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Issue 52

NOESIS

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Contents

Editor's Page, by Ronald K. Hoeflin	2
Chess, by Andy Soltis	3
Inherited Intelligence, by Gina Kolata	4
The Top One Percent Society, by Ronald K. Hoeflin	6
Titan Test Data, by Ronald K. Hoeflin	8

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Editor's Page

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Membership Status: As of October 13, 1990, the following members and subscribers have sent \$10 or more as requested in issue 51 of Noesis to cover expenses for issues 51 through 56.

Anthony J. Bruni (\$20)
Chris Cole (\$10)
Eric Erlandson (\$10)
James D. Hajicek (\$10)
C. M. Langan (\$10)

Richard May (\$20)
Robert D. Russell (\$10)
Richard Sterman (\$20)
S. Woolsey (\$20)
Jeff Wright (\$20)

The following members and subscribers have not as yet sent any funds to cover this period:

Geraldine Brady (\$0)
H. W. Corley (\$0)
George W. Dicks, Jr. (\$0)
Eric Hart (\$0)
Dean Inada (\$0)
Johann Oldhoff (\$0)

Keith Raniere (\$0)
Marilyn vos Savant (\$0)
Cedric Stratton (\$0)
Jeff Ward (\$0)
Karl G. Wikman (\$0)
Ray Wise (\$0)

If any of you listed above believe I have made an error, please notify me. I assume that George Dicks and Ray Wise will renew their memberships before long and perhaps one or two others will, as well.

Issue 38: I found a lot of unmailed copies of issue 38 in one of my files recently. I assume Eric Erlandson wanted me to staple them, fold them, and mail them out and I failed to do so. I will enclose a copy with the next issue of Noesis. I have only 18 copies, which is not quite enough to send to everyone listed above, but since I will be mailing the next issue to only 10 or 12 of you, there will be enough to go around then.

Issue 50: In issue 51 I erroneously asked you all to renumber Ray Wise's "issue 53" to "issue 49." I meant to say to renumber it to "issue 50."

Issue 51: Richard Sterman states that he accepts Dean Inada's detection of an error in his solution to the interpenetration problem involving a tetrahedron and four spheres when the spheres are arranged symmetrically, but he believes his more general solution to the problem for when the spheres are arranged asymmetrically is still correct.

Issue 52: George Dicks was to have provided material for this issue but the material he sent (twice) has so far failed to materialize in my mail box, so I am throwing this issue together from items I have published in my other journal, In-Genius, to which only 3 out of 22 of you subscribe. My apologies to those 3 for the redundancy. At least this page will be distinctive.

Future issues: I will take over all responsibility for getting out these 6 issues (51-56) of Noesis rather than let the journal get further behind schedule. If I receive any publishable material from any member, I will make room for it in the next available issue.

Annual meeting: There will be no annual meeting this year due to insufficient interest, but I will be attending an annual meeting of my Top One Percent Society on December 4th in Minnesota. If interested in attending, phone me at (212) 582-2326.

CHESS

By ANDY SOLTIS

LAST year, at a gathering in Edmonton, Canada, of authorities on chess computers, this question was raised: "In what year do you think a chess program will be able to defeat the world champion?"

If the question had been asked of a group of typical grandmasters, the answers most likely given would be something on the order of "2050" and "Never."

But the Edmonton answers were, depending on your viewpoint, either more informed — or more omnious.

International Master David Levy, who had twice taken on top programs in stakes matches, said 2014 would be the year.

Former world junior champion Julio Kaplan, who has worked for several years on Scisys/Saltek projects, predicted 2002.

David Slate, who helped design the pioneering Chess 3.0 program at Northwestern University, answered 1995 — as did IMs Mike Valvo, Larry Kaufman and Danny Kopec.

And the programmers of the two strongest computers in recent years, Hans Berliner of Hitech and Feng-hsiung Hsu of Deep Thought, figured on 1994.

Although computer people have always been more optimistic than the GMs, even Garry Kasparov is modifying his view.

Although he easily defeated Deep Thought in an exhibition match here last year, the world champion seems to foresee a day when a com-

puter will beat him. Formerly a member of the "Never" group, Kasparov now indicates the terrible day will come sooner or later.

The case for that day being sooner rather than later is laid out in "How Computers Play Chess" (Computer Science Press, \$11.95) by Levy and Monty Newborn, whose Ostrich program was an impressive competitor in early computer-only events.

Computer hardware is rapidly improving, they point out, and by 2000 computers will be 10 million times faster than the first chess programs.

Moreover, the best programs have been able to expand the number of half-moves they see ahead — the "search depth" — every few years. Each additional half-move of depth seems to be worth 200 rating points of playing strength.

Slate's early programs went from a search depth of five in 1972 to six in 1975 and seven in 1978 — and in rating from 1600 to 2000.

Ken Thompson's Belle reached a depth of eight in 1980 and a 2200 rating, topped by Hitech's nine and 2400 rating six years later, and Deep Thought's 10 and 2600 rating last year.

Does that mean that a search depth of 11 — and a Kasparov-like rating of 2800 — can be expected within two years?

Maybe Newborn knows. His answer to the Edmonton question was 1992.

Study Raises the Estimate of Inherited Intelligence

By GINA KOLATA

A study of twins reared apart has come up with one of the highest estimates yet for the heritability of intelligence, as judged by test scores.

By comparing intelligence test results of identical and fraternal twins who were brought up separately, investigators estimated how much of the differences in the scores was due to genes and how much was due to environment.

The investigators report that fully 70 percent of the differences in the twins' IQ scores were attributable to inherited traits. Previous studies had suggested that about 50 percent of the differences in scores were inherited.

The new findings, which were immediately questioned by other experts, could mean that inheritance is the overwhelming contributor to intelligence test scores. The findings could become part of the never-ending debate over the role that schools and environments can play in determining the test scores.

'Settle the IQ Issue'

Dr. Thomas J. Bouchard Jr., a psychologist at the University of Minnesota who directed the study, predicted that his results "will settle the IQ issue for most people." He added that with such strong evidence that differences in IQ scores are largely attributable to heredity, it will become harder for skeptics to argue against the influence of genes on intelligence.

He also said that although his estimate is higher than most others, it is not out of line. He attributed his findings to a "very simple, straightforward design" in the study. And he said there was still plenty of room for environment to be an influence.

"We're saying that nothing in the study tells us that intervention is not a possibility, but we have to pay attention to the unique talents of each child," he said.

Dr. Bouchard's paper is being published today in *Science* magazine.

Several experts played down the significance of the results, saying that the study did not overturn data from many others. One scientist, Dr. Marc Feldman of Stanford, also questioned Dr. Bouchard's methodology, saying that if he had included relatives of the twins in his study, the heritability estimate would have been much lower.

A 70 percent heritability estimate "is pretty wild," said Dr. Norman Krasnegor, chief of the Human Learning and Behavior Branch of the National Institute of Child Health and Human Development. He said that if it were true, "it shouldn't matter too much what you do or where you go to school. Everything would fall into place."

Dr. Krasnegor emphasized, "I do respect Dr. Bouchard's work." But he added that he wonders whether the finding might be due to the relatively small size of the sample or to some other factor.

Interest of Social Scientists

Although more and more psychologists believe test scores are not an accurate measure of intelligence, the tests are at least good predictors of how well children will do in school. They have also been of abiding interest to social scientists as one of the few inheritable psychological attributes that can be measured.

"In social science, it's rare that we can explain even 10 percent of the variance" of a trait, said Dr. Robert Plomin of Pennsylvania State Univer-

sity.

Dr. Bouchard has spent more than a decade seeking and studying identical and fraternal twins who were separated early in life and reared apart. Separated twins are of great interest to researchers because they give a unique chance of distinguishing the roles of heredity and environment in

New fuel for the debate on heredity vs. environment.

human personality.

He found more than 100 separated pairs and subjected them to a battery of personality tests and intelligence tests, asking how much of their similarities in intelligence and personality traits is due to inheritance and how much is due to environment.

In Dr. Bouchard's studies that have been widely reported, he said most personality traits were strongly affected by heredity. In his paper published today, he analyzes the IQ test results.

Previous Studies

Others have found less heritability of IQ in similar studies. For example, Dr. Plomin said, his own recent study of several hundred pairs of Swedish twins reared apart finds that about half the variation in test scores is due to heredity in a result that is consistent with most other studies.

Dr. Plomin said that Dr. Bouchard's study "is a relatively small study compared to the world literature on twins," and added that it did not lead him to believe that the heritability of IQ is much more than 50 percent.

Dr. Robert Sternberg, a professor of psychology and education at Yale University, agreed. He said that Dr. Bouchard "is a competent psychologist and it's a good study." But, he added, "no one study is definitive."

Heritability estimates vary, he noted, depending on "the test you use, when you do the study, the population you use, the country you do it in, and the ethnic groups." In addition, he said, "identical twins reared apart are just not a random sample of the population."

Dr. Feldman said that heritability estimates also depend on technical details involving the statistical model. In the late 1970's, he said, investigators discovered that if they added IQ data on relatives of twins to the data on twins when estimating how much of IQ test results were due to genes, their heritability estimates were cut in half.

Dr. Feldman contends that if Dr. Bouchard had used twins' relatives in his study, "he would have had to change his estimate."

The Top One Percent Society

Founded in July 1989, the Top One Percent Society is one of approximately a dozen high-IQ societies active today.

As of July 1990 the Society had 300 members throughout the United States and Canada plus two members in Europe.

The Society accepts as full members anyone who has scored within the top one percent of the general population on a test of intelligence or scholastic aptitude. A sampling of qualifying scores follows. Those unable to meet the minimum requirement are welcome to join as associate members.

The chief benefits of membership are (1) a twice-monthly journal called In-Genius, (2) a membership card, and (3) an annual meeting -- if at least ten members express an interest in holding one when it is announced each year.

In-Genius is a 20-page booklet to which all members and associate members are welcome to contribute letters, essays, poems, etc. Items of strong intellectual interest are preferred. The name and mailing address of each contributor are published in order to facilitate direct feedback from the members, who are also welcome to submit their responses to the editor of In-Genius for publication. The names and addresses of all members are published in In-Genius once a year.

The even-numbered issues of In-Genius are devoted to miscellaneous material submitted by the members, often accompanied by the editor's comments. Odd-numbered issues are devoted to philosophy and psychometrics, in each of which the editor has a special interest. Most of the material in the odd-numbered issues is accordingly written by the editor, although relevant material submitted by the members will also be included.

The founder and editor, Ronald K. Hoeflin, is an award-winning philosopher. He has also designed two high-ceiling, untimed, self-administered tests of intelligence published in Omni Magazine, which has a circulation of nearly a million copies a month.

To join, simply send a photocopy of your qualifying score together with a check or money order in one of the amounts specified below, made payable to "Ronald K. Hoeflin" at P. O. Box 7430, New York, NY 10116.

The subscription fee is \$40 per annum if you opt to receive all 24 issues. This can be paid in installments of \$10 every 3 months or \$20 every 6 months, if preferred. You may also choose to receive only the even-numbered (regular) issues or just the odd-numbered (philosophical and psychometric) issues for \$20 per 12 issues or \$10 per 6 issues. As of July 1990, 7 members were receiving just the even-numbered issues, 6 were receiving just the odd-numbered issues, and the rest were receiving all issues.

All back issues remain available at \$10 per 6 issues.

QUALIFYING SCORES

Standard intelligence tests:

Stanford-Binet	137 IQ
Wechsler Adult Intelligence Scale	135 IQ

College admissions tests:

SAT (verbal + math)	1300
ACT	30

Graduate school admissions tests:

GRE (verbal + math)	1300
Miller Analogies Test	74

Mensa admissions tests:

California Test of Mental Maturity	137 IQ
Cattell-Verbal	156 IQ

Tests designed by Dr. Hoeflin:

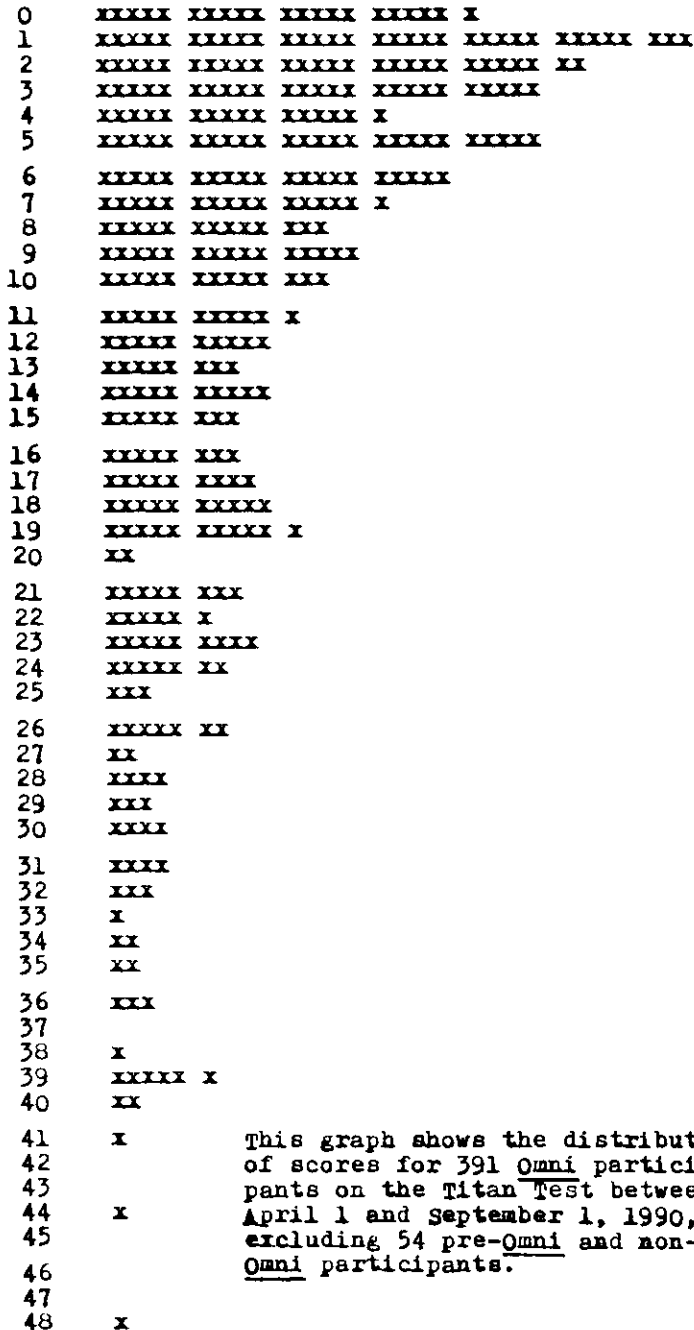
Mega Test	137 IQ
Titan Test	137 IQ

To try the untimed, self-administered Mega or Titan test, send Dr. Hoeflin a stamped, self-addressed envelope plus a \$25 scoring fee per test payable to "Ronald K. Hoeflin."

8 Titan Test Score Distribution

The Editor

Raw score



This graph shows the distribution of scores for 391 Omni participants on the Titan Test between April 1 and September 1, 1990, excluding 54 pre-Omni and non-Omni participants.

First Norming of the Titan Test

9

The Editor

<u>Raw Score</u>	<u>I.-Q.</u>	<u>Percentile</u>
1	120	90
2	123	92
3	126	94
4	128	95
5	130	96
6	132	97
7	134	98
8	135	98.6
9	136	98.8
10	137	99.0
11	138	99.2
12	139	99.3
13	140	99.4
14	141	99.5
15	142	99.57
16	143	99.6
17	143	99.67
18	144	99.7
19	145	99.75
20	146	99.80
21	147	99.84
22	148	99.87
23	149	99.89
24	150	99.90
25	151	99.92
26	152	99.94
27	153	99.95
28	154	99.97
29	156	99.975
30	157	99.980
31	158	99.986
32	159	99.989
33	160	99.990
34	162	99.994
35	163	99.996
36	164	99.997
37	165	99.998
38	166	99.9987
39	168	99.9990
40	170	99.9994
41	172	99.9997
42	174	99.9998
43	177	99.9999
44	180	99.99997
45	183	99.99999
46	186	99.999997
47	190	99.999999
48	190 +	99.999999 +

Titan-Mega Score Pairs

The Editor

This page shows 114 pairs of scores for those who have taken both my Titan and Mega tests, including pre-Omni and non-Omni as well as Omni participants. Scores in parentheses were on a preliminary version of the Titan Test that was almost identical to the final version in Omni. The following page graphs the distribution of scores on each test for these 114 participants.

person No.	Titan Score	Mega Score	person No.	Titan Score	Mega Score	person No.	Titan Score	Mega Score
1	7	10	41	23	24	81	29	27
2	23	23	42	22	15	82	41	42
3	17	19	43	3	6	83	40	29
4	31	34	44	(12)	17	84	30	33
5	35	23	45	9	17	85	27	26
6	1	5	46	(5)	4	86	7	9
7	24	21	47	13	24	87	39	21
8	(2)	11	48	36	44	88	18	20
9	(9)	18	49	4	24	89	14	11
10	(16)	26	50	11	14	90	4	13
11	13	14	51	39	35	91	25	31
12	(15)	23	52	20	24	92	39	40
13	(13)	23	53	24	23	93	31	26
14	29	33	54	23	19	94	24	20
15	20	15	55	1	6	95	19	23
16	8	5	56	22	26	96	32	38
17	2	4	57	5	11	97	9	12
18	24	13	58	12	25	98	17	29
19	8	16	59	11	27	99	8	20
20	25	32	60	33	35	100	35	36
21	41	35	61	6	8	101	29	31
22	19	24	62	28	28	102	14	11
23	33	28	63	36	35	103	23	29
24	27	27	64	48	47	104	3	12
25	31	23	65	19	33	105	8	15
26	28	20	66	31	32	106	39	39
27	18	20	67	10	15	107	5	12
28	5	4	68	39	30	108	9	11
29	28	23	69	6	13	109	18	30
30	24	28	70	13	22	110	6	12
31	7	15	71	22	33	111	12	19
32	29	11	72	34	29	112	23	24
33	26	19	73	16	23	113	35	40
34	12	18	74	40	36	114	19	32
35	14	20	75	7	9			
36	32	29	76	12	16			
37	29	19	77	38	41			
38	19	21	78	15	15			
39	27	25	79	23	33			
40	16	16	80	4	8			

Titan vs. Mega

Score Distributions

Mega Test
Raw Score

Titan Test
Raw Score

0
1
2
3
4 x x x
5 x x
6 x x
7
8 x x
9 x x
10 x
11 x x x x x x
12 x x x x
13 x x x x
14 x x
15 x x x x x x
16 x x x
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36 x x x
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38 x
39 x
40 x x
41 x
42 x
43
44 x
45
46
47 x
48

0
1 x x
2 x x
3 x x
4 x x x
5 x x x x
6 x x x
7 x x x x
8 x x x x
9 x x x x
10 x
11 x x
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First Class
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