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DEDICATION FOR:

CHESS AND EDUCATION: A BIBLIOGRAPHY

This bibliography is dedicated to Harry Lyman, who does heavy research with a light heart.

CHESS AND EDUCATION: A BIBLIOGRAPHY

What follows is a rather extensive list of book and magazine articles generally relating to Chess and Education.

In doing research for this manual, I combed the files of five different library systems. I made use of the Inter Library Loan requests system as well. It is common in doing any kind of research work to accumulate much more material than you eventually end up using, so it was with this project. While I did utilize some of the material, much of it was either too esoteric for this project or simply irrelevant. However, it may not be irrelevant to you. Accordingly, I have arranged it into three loose categories to simplify your access to it.

The categories are SCHOLASTIC, PSYCHOLOGY, and GENERAL.

The Scholastic category includes almost anything related to chess in the schools. Many of these articles are news stories or human-interest pieces showing how kids like to play chess. This section does have a lot of interesting photos which you might like to put up in your club room or paste in your club scrapbook.

The Psychology category contains a number of fascinating laboratory experiments relating to how the human brain works when trying to play chess and solve chess related problems. Much of the material requires at least some background in formal psychology, and much of it is of an esoteric nature considerably removed in focus from the design of this layman-oriented scholastic chess manual. A number of in-house clinical psychology theories are debated. Still, if you can get past the clinical terminology, many of you as teachers will find this material absorbing reading.

The General category contains articles which do not comfortably fit completly in either of the two previous categories. This section includes everything from chess slang to chess and politics.

Inside these three separate categories, I have arranged the articles alphabetically by SOURCE. I have included the article name, page number, volume and/or month, where listed, and the author's name.

I have also included a brief review of the article, when one was available.

The articles were culled from the following sources: The Reader's Guide, Sociological Abstracts, Psychological Abstracts, Humanities Index, Education Index, International Index to Periodicals, Experimental Psychology (Human), Cognitive Process and Motivation, as well as miscellaneous other sources.

All sources were used which might reasonably relate (if even in a small way) to the subject of chess and education. Articles on general chess topics clearly unrelated to the subject at hand are not included in this Bibliography.

The articles are more than 60 in number. To our knowledge, this is the most extensive collection of articles on this subject ever compiled in English.

Perhaps one or more of these articles will be the starting point for an original contribution to the growing field of chess and education by you.

We hope you like this list. Happy hunting!

—Russell Potter

P.S. In case you have never experienced the somewhat questionable pleasure of time-consuming research for library materials such as these, I have a suggested plan to attack, based on rather painfully, delay ridden, first-hand experience.

First. Try to get the materials you want from your local library.

Second. Make an inter-library loan request through your state library system.

Third. Make an I.L.L. request to the Library of Congress.

The Library of Congress will not generally fill a request unless you have exhausted your local and state resources first.

Be prepared to pay up to 25¢ per page in some cases for Xeroxed materials.

Expect delays, sometimes quite lengthy--so start months before any projected deadline that you might have to meet.

If you live on the East Coast, and time is an object, but money is not, a two to three day visit to the Library of Congress in Washington, D.C. might be well worth your while for an important project. But don't be overly discouraged--most of the articles you will want will probably be available without too much trouble. Good luck!!

Individual Publication, 1978 (English Language Translation), 89 pages, Chess and Aptitudes, Frank, Albert (Professor). For Copies: Mr Harry Lyman, P.O. Box 1091, Saugus, MA 01906.

Chess...aptitudes? Does the ability in chess depend on some aptitudes? And, can chess develop some attitudes? Two hypotheses that had to be tested.

In Kisangani, (Zaire), I got the opportunity of doing it: the Government gave me the authorization to do, for one year, and obligatory course of chess, at school. In that way, in Africa, we got a homogeneous population: none of them had heard anything about chess before the experiment.

These pupils, plus another group (control) would pass aptitude test before and after the experiment.

Of course, difficulties arose, principally because the time was short.

But, finally, we got some fascinating results...that you will see at the end of the text!

We can answer "yes" to the question: must chess be taught at school?
AUTHOR'S INTRODUCTION--PROFESSOR ALBERT FRANK

Arithmetic Teach., vol. 21, 1974, May, page, 396-400, 5 pages, Mathematics and chess, Robitaille, D. F.

Camp. Mag., vol. 25, 1953, June, page 12, 1 page, Try chess as a camping activity, Kirnmann, E. N.

Chess in schools. Chess education society. 1s, 1945, 20 pages, G. Allen.

Individual Publication, 1981 (English Language Translation), 66 pages, Chess and Cognative Development, Christiaen, Johan (Christaen). For copies: Mr. Harry Lyman, P.O. Box 1091, Sagus, MA 01906.

"Learning chess makes youngsters smarter in the classroom."

This is the 'surprising' finding of a two year (1975-76) experiment in Belgium by Johan Christiaen, Gent National University, Faculty of Psychology and Pedagogic Science.

He taught an experimental group of twenty boys (average age 10½ years) an elementary chess course totalling 42 hours of after school chess sessions over a two year period in a municipal school There was a control group of like number and grade (initially grade 5, later grade 6).

There was a significant difference between the two groups in scholastic results in favor of the chess group.

Johan Christiaen: "Considered generally, the rather great positive influence of chess on school results in both the fifth and sixth school year seems rather unexpected..."

Why perhaps unexpected?

The primary purpose of the experiment was centered on the cognative development theories of Jean Piaget (died in Geneva on 16 September, 1980, age 84): "Can an enriched environment (chess playing) accelerate the transition from the concrete lever (state 3) to the formal level (stage 4)?"

The scholastic achievements were thus incidental to the aim of the experiment.

Adriaan D. deGroot, noted introspective psychologist, in his 10 page memorandum (Dec. 1977) "Chess Instruction In School?" ranks the Belgium Study as the best experiment he has seen in educational research concerned with the differential effects of chess instruction on the mental development of school children:

"...The mastery of the rules (of chess)...mastery of standard mating procedures...and knowing something about a few opening systems...are easily defined knowledge objectives that are attainable by almost all pupils. In addition, the Belgium study appears to demonstrate that the treatment of the elementary, clearcut and playful subject matter can have a positive effect on motivation and school achievement generally..."

I am grateful for the aid, cooperation and supportive encouragement of Dr. Max Euwe, A. D. deGroot, Prof. Albert Frank (The Zaire Experiment) and of course Johan Christiaen, all overseas. Here in USA, Allen Kaufman (Amr. Chess Foundation), George Miriganian (Pres., MACA), my nephew, Shelby Lyman, my confidant, Dr. Stanley Epstein (translator) and my dear patient wife, Adeline.
EDITOR'S PREFACE--HARRY LYMAN

Collier's, vol. 16, 1945, September, page 24, 3 pages, It's a kid's game, Neikind, C.

Economist, vol. 201, 1961, December, page 218-19, 2 pages, Young man's game [chess in America].

State Ed., vol. 46, 1959, March, page 409, 4 pages.

General Distribution Article, 1977, 8 pages, Education and Social Objectives (of Promoting Chess In The Schools), McGrath, William, For copies: Mr. William McGrath, 518 S. Union Street, Burlington, VT 05401.

French R., vol. 50, 1977, February, page 417-20, 4 pages, Teaching direction and motion through chess, Gordon, W. T.

Grade Teach, vol. 85, 1968, March, page 25, 1 page, It worked for me. Vision, S.

Instruction, vol. 78, 1969, January, page 49, 2 pages, Chess; play to learn, Klaiman, A., and Hochman, S. R.

Math Teach, vol. 68, 1975, January, page 71-2, 2 pages, Chess in the geometry classroom, Whitman, N.C.

New Statesm, vol. 49, 1977, August, page 210, 1 page, Young man's game, Jones, M.

Newsweek, vol. 57, 1961, January, page 78, 1 page, Boy is the master.

Newsweek, vol. 90, 1977, August, page 44, 1 page, New City Game; Philadelphia's Vaux Junior High School team.

Times Mag, 1977, June, page 86, one page, Championship season: Vaux Junior High School and Frederick Douglass Elementary School chess teams. Lelyved, J.

Recreation, vol. 27, 1933, page 288-9, September, Chess tournaments in Milwaukee, Dyer, D. B.

Recreation, vol. 29, 1935, June, page 157-8, 2 pages, King of games conquers the playground; Milwaukee's experience with chess.

Recreation, vol. 36, 1942, May, page 95, 1 page, Night of knights; Milwaukee chess tournament.

Saturday Evening Post, vol. 214, 1942, December 12, page 39, 1 page, Chess for the masses, Nelson, A. P.

School Activities, vol. 10, 1938, September, page 21-2, 2 pages, Where chess is played in school, Geithmann, H.

School Activities, vol. 29, 1958, May, page 298-9, 2 pages, Casucci, J. G.

School Activities, vol. 31, 1960, February, page 166-7, 2 pages, Game of chess is fascinating, Casucci, J. G.

School Arts, vol. 78, 1978, page 24-7, 4 pages, Multiple wheel throwing; and chess sets, Sapiro, M. L.

Sr. School, vol. 28, 1973, November, page 28-30, 3 pages, Are you strong enough for chess?, Lyman, S.

Teacher Magazine, 1976, September, page 76-77, 2 pages, Chess Captures Classroom!, Doyle, James.

Times Ed. Sup., vol. 2150, 1956, August, page 998, 2 pages, Five rounds rapid.

Times Ed. Sup., vol. 2351, 1960, June 10, page 1196, 2 pages, Chess.

Times Ed. Sup., vol. 2642, 1966, January 7, page 33, 1 page, Game with a wide appeal.

Times Ed. Sup., vol. 2697, 1967, January 27, page 258-9, 4 pages, Chess: the friendly game.

PSYCHOLOGY

American Scientist, vol. 61(4), 1973, July, page 349-403, 10 pages, Skill in chess, Simon, Hebert A., Chase, William G.

Reports some unexpected byproducts of experiments with chess-playing tasks and computer simulation of skilled performance and problem solving. First, the theory of the process used by expert chess players in discovering checkmating combinations and the MATER computer simulation of these processes are reviewed. Next phenomena involving the perceptual bases of mastery in chess and eye movements at the chess board are described. Perceptual processes were evaluated by way of the MATER program, and a new program, PERCEIVER, was used to explain the eye movement phenomenon. To further refine the above findings, other more sophisticated simulation programs were introduced. Findings indicate that acquisition of chess skills depend, in large part, on building up recognition memory for many familiar chess patterns.
S. DENHAM—COGNATIVE PROCESSES AND MOTIVATION—51:6235-6242

Cognative Psychology, vol. 4(1), 1973, January, page 55-81, 14 pages, Perception in Chess, Chase, William G., Simon, Herbert A.

Develops a technique for isolating and studying the perceptual structures that chess players perceive. Three chess players of varying strength--from master to novice--were confronted with two tasks: a perception task, where the player reproduces a chess position in plain view; and A. D. de Groot's 1965 short-term recall task, where the player reproduces a chess position after viewing it for 5 sec. The successive glances at the position in the perceptual takes and long pauses in the reconstruction protocol. The size and nature of these structures are analyzed as a function of chess skill.
JOURNAL ABSTRACT--COGNATIVE PROCESSES AND MOTIVATION--50: 2237-2245

Cognative Psychology, vol. 5(1), 1973, July, page 29-46, 10 pages, Simon, Herbert, A., Gilmartin, Kevin.

Describes the "Memory-Aided Pattern Perceiver" (MAPP), an information-processing model, implemented as a computer program, that simulates the processes used to remember and reproduce chess positions they have seen briefly. The model incorporates chess positions they have seen briefly. The model incorporates processes adapted from PERCEIVER, an information-processing theory of eye movements in chess perception, and EPAM, a theory of rote verbal learning. The data from MAPP show good agreement with the performance of strong chess players in identical tasks.
JOURNAL ABSTRACT--COGNATIVE PROCESSES AND MOTIVATION--51: 8455-8462

An Experiment To Alter "Achievement Motivation" In Low-Achieving Male Adolescents By Teaching The Game Of Chess, 1971, 131 pages, Turner, Harry Milburn.

From a rual middle Georgia junior high school, 66 subjects were identified from a ninth grade of 403 as low-achieving males with no history of failure or acceleration. The subjects were not assessed as retarded or emotionally disturbed. Their academic average for the previous semester was 72 percent or below and their reading achievement was below 6.0 grade level. Sixty of these low achievers were randomly assigned to participate in a teaching experiment. Ninely-two percent of the subjects were black in a school population which is 70 percent black.

The problem was identified as a need to increase success experiences of these boys in order to increase attitudinal changes toward intellectual tasks. It was hypothesized that a positive relationship would exist between the acquisition of a "success experience" (chess playing skill plus social reinforcement) and "achievement motivation" operationally defined as self-reported changes in attitudes toward achievement in an academic setting.)

The treatment was six weeks of small group instruction in playing chess, using mastery teaching techniques and monetary reinforcement. The dependent variables were positive changes in self-reported attitudes conducive to achievement in school. These were measured by two self-report instruments known to be positively correlated to achievement in school: Students' Self-concept to Ability (SCA) (Bookover et al., 1962) and A Childhood Attitude Inventory for Problem Solving (CAPS) (Covington & Crutchfield, 1968). Analysis was accomplished by using analysis of variance and analysis of covariance with a Solomon 4 group experimental design (Campbell & Stanley, 1965).

Findings: The hypothesis was not supported by the data. The effects of pretesting were found to be interactive with treatment, significant at the .01 level on the SCA measure.

Conclusion: The treatment was considered effective in maintaining interest, imparting a skill and a feeling of success. This was evidenced by students expressed attitudes toward the game of chess, demonstrated proficiency and continuation of chess play by 94% of the participants for six weeks beyond (the last observation) the period examined, one hour per day, five days per week, for six weeks, is insufficient to effect significant attitudinal changes toward academic achievement by the method employed with the experimental population.
PSYCHOLOGICAL ABSTRACTS--6041B

Gifted Child, vol. 16, 1972, Summer, page 112-13, three pages, Chess Champion grows up gifted, Bidlack, G. H.

Ind. Woman, vol. 16, 1937, February, page 41, three pages, Brain work that's play: women chess players, Weart, E. L.

Lit. Digest, vol. 122, 1936, August 29, page 32, one page, Parade: women chess players.

Liv. Age, vol. 331, 1926, December 15, page 512-17, six pages, Chess and brains, Lafora, G. R.

Memory and Cognation, vol. 4(5), 1976, September, page 541-47, seven pages, Recall memory for visually presented chess positions, Frey, Peter W., Adesman, Peter.

Three experiments replicated and extended earlier research reported by W. G. Chase and H. A. Simon (1973), A. de Groot (1965), and N. H. Charness (1974). Fifty-nine members of university and local chess clubs representing 3 levels of skill, participated. Exp I demonstrated that the relationship between memory for chess positions and chess skill varied directly with the amount of chess-specific information in the stimulus display. Exp II employed tachistoscopic displays to incrementally "build" tournament chess positions by meaningful or nonmeaningful chunks and demonstrated that meaningful piece groupings during presentation markedly enhanced subsequent recall performance. Exp III tested memory for 1 of 2 positions presented in immediate sequence and demonstrated that memory (Chase Simon) are not adequate for explaining performance on this memory task.
JOURNAL ABSTRACT--EXPERIMENTAL PSHCYOLOGY (HUMAN)--57: 7449-7457

Memory and Cognation, vol. 7(4), 1979, July, page 253-56, four pages, The generality of the levels of processing hypothesis: An application to memory for chess positions, Lane, David M., Robertson, Lauren.

Tested the generality of the levels of processing approach to memory by using chess positions rather than words as stimuli. Exp I compared recall following semantic orienting instructions (find the best move and determine which side has the advantage), formal orienting instructions (determine the number of pieces on light squares and the number of pieces on dark squares), and intentional learning instructions using 19 undergraduate novice chess players. Ss completed the Spatial Visualization Subtest, Form B, of the Guilford-Zimmerman Aptitude Survey. Formal orienting instructions produced poorer recall than did either semantic orienting or intentional learning instructions, which yielded similar levels of retention. These results were replicated in Exp II with 16 tournament chess players. Chess rating correlated with recall .82 under semantic orienting instructions but only--.15 under formal orienting instructions. The levels of processing framework have applicability outside the area verbal learning.
JOURNAL ABSTRACT--EXPERIMENTAL PSYCHOLOGY (HUMAN)--64: 11808-11817

Journal of Nervous & Mental Disease, vol. 152(2), 1974, August, page 145-45, three pages, Visual neglect in a chess player, Cherington, Michael.

Describes a chess game in which one player, the patient, had a right parietal lobe lesion. His performance tended to support the concept that many factors are involved in visual neglect. It is believed that this is the first case reported in which visual neglect is demonstrated on the chess board.
PHYSICAL AND PSYCHOLOGICAL DISORDERS--53: 3477-3484

American Journal Psychology, vol. 18, 1907, July, page 269-308, 40 pages, Psychology of chess and learning to play it, Cleveland, A. A.

Journal of Psychology, vol. 91(4), 1978, December, page 659-71, 13 pages, Effects of orienting tasks on recognition of chess positions, Goldin, Sarah, E.

Two experiments using a levels-of-processing paradigm were performed to demonstrate the existence and usefulness of a semantic component in chess knowledge. Exp I with 8 male chess players compared forced-choice recognition of chess positions after a structural task (piece counting) as opposed to a semantic task (choosing a move). Recognition accuracy, confidence, and familiarity ratings all showed a facilitation effect in the semantic condition. By including an orienting task that did not encourage semantic processing but still allowed pattern-matching operations to occur (coping a board), Exp II with 9 task effect was a genuine enhancement of memory due to meaningful processing. Once again, the processing of meaningful relations in the semantic task (positional evaluation) produced a higher level of recognition performance than did the more structural processing. Results suggest that aspects of meaning have some input into the processes that generate the memory representation of chess position.
JOURNAL ABSTRACT--EXPERIMENTAL PSYCHOLOGY (HUMAN)

American Journal of Psychology, vol. 21(1), 1979, March, page 19-31, 13 pages, Recognition memory for chess positions: Some preliminary research, Goldin, Sarah, E.

Two important variables affecting recall of chess positions, chess skill, and meaningfulness of the material, were investigated in the contest of a forced-choice recognition task, using 15 chess players. Recognition accuracy was strongly influenced by chess experience. Analysis of protocols and patterns of recognition for random positions suggested that dynamic features generated during analysis of a position formed a component of the memory representation of that position especially for better players.
EXPERIMENTAL PSYCHOLOGY--64: 7158-7167

Comp. Psychol, vol. 13, 1933, April, page 301-11, 11 pages, Effect of caffeine upon chess problem solving, Holck, H. G. O.

Journal of Applied Psychology, vol. 61(3), 1976, June, page 319-342, 6 pages, Additive effects of task difficulty and goal setting on subsequent task performance, Campbell, Donald J., Ilgen, Daniel R.

Notes that the setting of difficult goals has been consistently found to improve performance in both laboratory and field settings; however, the setting of difficult goal has sometimes been confounded with the difficulty of the task, especially in field studies where the difficulty of goals and more complex tasks often co-vary. The present study investigated the relative contribution of goal setting and task difficulty to performance on chess problems. Employing a 3 X 3 factorial design, 82 chessplaying undergraduates attempted to solve either easy,

moderately difficult, or ditficult chess problems, after accepting either an easy, moderately difficult, or difficult goal. Results show that both goals and tasks difficulty contributed additively to task performance.
JOURNAL ABSTRACT--EXPERIMENTAL PSYCHOLOGY (HUMAN)--56: 167-175

Ed. Psychology, vol. 60, 1969, October, page 394-=401, 8 pages, Paragraph organization of written material: the influence of conceptual clustering upon the level and organization of recall, Frase, L. T.

Journal of Experimental Psychology, vol. 2(6), 1976, November, page 641-53, Memory for chess positions: Resistance to interference, Charness, Neil.

An information processing model. Memory-Aided Pattern Perciever (MAPP), that simulated the recall of briefly presented chess positions, was subjected to a test of its assumption that such positions are encoded and stored as chunks in short-term memory. In 4 experiments with 30 paid chess players representing 2 levels of playing skill, 30 sec. of additional processing were interpolated between exposure and recall using a modified Brown-peterson paradigm. Interpolated tasks varied in complexity, modality, and similarity. As a control, nonsense trigrams were substituted for chess diagrams with some of these tasks. It was observed that recall of chess positions was only slightly hampered (6-8%), whereas recall of trigrams were greatly reduced by some tasks. Latency to place the first chess piece at recall was doubled or tripled by interpolated processing. Results suggest that virtually all the information extracted during a 5-sec. exposure to a chess diagram is stored in long-term memory. Findings also support the view that interference in the Brown-Peterson paradigm is due to retrieval difficulty rather than encoding failure.
JOURNAL ABSTRACT--EXPERIMENTAL PSYCHOLOGY (HUMAN)--57: 7423-7431

Journal of Experimental Psychology: Human Learning & Memory, vol 4(6), 1978, November, page 605-616, Memory for the ordinary: Typicality effects in chess memory, Goldin, Sarah, E.

Reports on 3 studies that argue for the importance of prototypic configurations in chess memory representations. 32 chess players' recall of sterotyped or typical positions after 5-sec exposure was superior to recall of more unusual and interesting positions. This effect was very robust and was independent of skill level and prior experience with the ideas and plans that generated the stimulus position. Ss were also more liely to reconstruct a typical position correctly based on partial information. Finally, typical positions were recognized more accurately than atypical positions after a brief study period. These log-term knowledge about chess may be results suggest that organized around highly typical other domains.
JOURNAL ABSTRACT--EXPERIMENTAL PSYCHOLOGY (HUMAN)--64: 381-388

Exper. Psychology, vol. 7, 1981, April, page 467-76, 10 pages, Search in chess: age and skill differences, Charness, N.

Science, vol. 169, 1970, July, page 209-11, 3 pages, Cognitive model of problem-solving in chess, Wagner, D. A.

Sci. Digest, vol. 29, 1951, March, page 54-7, 5 pages, Chess men, and chess mentality, Lasker, E.

Sci. Digest, vol. 25, 1949, August, page 57-61, 5 pages, Same abr. with title Is chess a smart man's game?.

Sci. Digest, vol. 73, 1973, January, page 64-0, 6 pages, Psychology quirks of the greatest chess masters, Dreistadt, R.

Simulation & Games, vol. 10(2), 1979, June, page 207-221, 16 pages, The evaluation of chess positions, Holding, Dennis H.

Compares the way humans and computers pay chess.

Time, vol. 100, 1972, September 4, page 44-5, 2 pages, Why they play: the psychology of chess; Time essay, Cant, G.

Visual information processing, 1973, page 555, 78 pages, The mind's eye in chess, Chase, William G., Simon, Hebert A.

Reviews experiments by author and other researchers on the skill, perception, and cognitive process involved in chess-playing. Results support an information-processing theory of chess skill.
COGNATIVE PROCESSES AND MOTIVATION--51: 8319-8328

GENERAL

American Speech, vol. 46, 1971, Fall-Winter, page 231-6, 6 pages, Checkschmuck! the slang of the chess player, Patterson, K.

Nat. R, vol. 30, 1978, April 14, page 456-7, 2 pages, Soviet chess, Meyer, E.

Sat. R, vol. 46, 1963, March 23, page 25, one page, Poker, pawns, and power; adaption of address, Katzenbach, E. L.

Times Educ. Sup., vol. 2985, 1972, April 4, page 11, 2 pages, Pawn to God, Arden, L.

Times Educ. Sup., vol. 3261, 1977, December 9, Move among friends, Simpole, J.

International Review of Sport Sociology, 1974, page 117-126, The Social Phenomenon of Game and Sports, Ponomarev, I. N.

This is a theoretical presentation, tracing Soviet works on games and sports, with consideration of definition of terms. The following points are central: Games have significance in terms of SR. A game is an activity which liberates man from his work and cognitive pursuit. Man is being changed through sports, where the physical and other conflicts of life are represented. It is all but impossible to draw the line between games and education. The physical activity in sports is in the form of exercises which consume energy. The social role of childrens' sport and games prepares the younger generation for life in society. Internationalization of sports in a socialist society intergrates national sports thus promoting a better understanding of various peoples toward their peaceful coexistance.
G. SCHMELING--SOCIOLOGICAL ABSTRACTS--75H4952-H4958

Univ. of Nebraska, 1928, page. 296-297, 2 pages, A Varient of the Chessboard Illusion, Hyde, Winifred F. For copies: University of Nebraska (?).