

# **Psy 357: Pseudopsychologies** **SYLLABUS FOR SPRING 1985**

## 0.0 Catalog Details

- 0.1 Designation: Psy 357: Pseudopsychologies
- 0.2 Credits: 3 hours, Social Science
- 0.3 Meetings: UH , 14:00-15:20
- 0.4 Room: 146 Straub
- 0.5 Instructor: Ray Hyman, 323 Straub, 686-4910  
OFFICE HOURS: MF 14:30-15:30
- 0.6 Prerequisites: none.

## 1.0 Textbooks

(In order of assigned reading)

- 1.1 Neher, A. The psychology of transcendence. 1980.
- 1.2 Vogt, E.Z., & Hyman, R. Water Witching U.S.A. 1979 (2nd Edition).
- 1.3 Marks, D., & Kammann, R. The psychology of the psychic. 1980.

## 2.0 Examinations

- 2.1 MIDTERM: Tuesday, May 7, 1985
- 2.2 FINAL: Monday, June 10, 1985, 10:15-12:15

Both examinations will consist of multiple choice and essay questions. Some typical multiple choice items would be:

Many instances of "seeing" auras can be attributed to

- 1) afterimages
- 2) phosphenes
- 3) habituation
- 4) sensory driving

From a scientific viewpoint, water witching "works" if

- 1) it is consistently more successful than chance selections
- 2) it is consistently more successful than a geologist using her knowledge of surface cues
- 3) both (1) and (2)
- 4) neither (1) nor (2)

A typical essay question would be:

Write about any two of the following cases:

URI GELLER, CLEVER HANS, THE PSYCHIC READING, TM

In your writeup try to deal with the following questions:

- a) What is the case about and how is it related to similar cases?
- b) What is being claimed? Both at the level of general

theory and of specific predictions?

c) What arguments are offered to justify the claims and how sound are they?

d) If the arguments do not justify the claims, what further evidence and arguments would suffice?

e) What alternatives might account for the reported evidence and the belief in the claims?

### 3.0 Reports

For each of the three books you are expected to submit, on the assigned date, a brief report. This report is not a book report. We do not want a summary nor an evaluation of the book. Rather, what is wanted is a two or three page description of a possible term paper based on ideas you have obtained from the assigned reading.

The purpose of the reports is to get you to do your reading with the goal of developing a suitable project for your term paper. The reports enable us to get an idea of what sorts of term papers you have in mind and gives us the opportunity to supply you with feedback as to whether your proposals are suitable.

The due dates for reports are as follows:

3.1 Report on Neher: Thursday, April 18, 1985

3.2 Report on Vogt & Hyman: Thursday, May 2, 1985

3.3 Report on Marks & Kammann: Tuesday, May 21, 1985

### 4.0 The term paper

The term paper, which is due on Tuesday, June 4, is your opportunity to summarize the lessons you have learned about how to evaluate and understand the claims and beliefs of a pseudo-psychology. One strategy is to choose one or more examples of a pseudoopsychology for analysis. The idea is to select a case or cases sufficiently complex and rich as to enable you to discuss a number of different issues relevant to belief in systems that lack suitable justification.

Another strategy is to compare and evaluate the treatments of particular cases and topics as presented in the lectures and the textbooks with alternative treatments such as some of those listed in the references appended to this syllabus. For example, you might compare and contrast the treatment given to Uri Geller by Marks and Kammann with that of Panati (1976), Puharich (1974) or by Collins and Pinch (1982). Or Vogt and Hyman's coverage of dowsing could be contrasted with either Bird's (1979) or Hitching's (1978) coverage. Be sure to include your Master Checklist with your term paper.

## 5.0 Grading

The course grade will depend upon the number of points earned in each of the following:

Midterm: up to 50 points

Final: up to 100 points

Reports: up to 30 points (10 points for each)

Term paper: up to 100 points

Grading is not based on a a curve; nor is it based on fixed rules. For most of you, your final grade will depend upon the total number of points accrued. But, in some cases, poor performances on early reports and assignments may be discounted if later performances improve substantially. Also, failure to complete any of the assignments may lead to a lower grade than might otherwise be predicted on basis of total points.

## 6.0 Course objectives

Some very general objectives of this course could be stated as follows:

a) to acquaint you with the range and types of arguments put forth to support claims for various anomalistic systems which offer promises of healing, growth, hidden knowledge and transcendence of "normal" human limits.

b) to give you some practice in evaluating the soundness of such claims.

c) to understand how current theories of human cognition and personality can account for belief in such systems even when they are not supported by sound arguments and evidence.

More concretely, here is what we would like you to be able to do as a result of having taken this course: Whenever you are confronted with a potentially pseudopsychological claim, such as the four examples described below, you can supply a written evaluation which:

1) clearly describes the actual claim and distinguishes it from the implied claim, if these differ;

2) identifies the argument and evidence, if any, that is used to justify the claim;

3) evaluates the adequacy of such a justification;

4) suggests reasonable psychological hypotheses which can supply an alternative account of why proponents and followers may falsely believe in the reality of the claims.

Here are some examples that we will encounter during the course and some of the questions they raise. You might find it instructive to write out your current analysis of these examples and then compare it with your analysis at the end of the course.

### 6.1 Uri Geller and Scientists

Uri Geller, a young Israeli, gained widespread publicity in the 1970's as a result of his alleged paranormal powers which were certified by a number of scientists including a Nobel Prize Laureate. Geller claimed to be able, among other things, to cause metal to bend or deform through sheer mental concentration and

without the use of physical force. Several physical scientists (see Panati for one set of examples) and many more non-scientists testified that they had witnessed Geller perform such feats under conditions that precluded trickery. The magician Randi argued that Geller performed all his feats by trickery and that the scientists were being duped (see Randi's book). The parapsychologist, Charles Tart, in a review of three books on Geller in Contemporary Psychology (July, 1976), wrote that, "Randi is a zealot defending scientific orthodoxy.....solid evidence exists for Geller having occasionally demonstrated paranormal abilities under stringent conditions that seem not to permit fraud.....If you're caught cheating once, (Randi's) convinced that you've always cheated....Many Geller fans believe he never cheats, but this position seems as extreme as Randi's. Suppose you had some genuine paranormal abilities, but they didn't always work. The temptation to move things along with a little conjuring might be overwhelming."

Tart concludes that the most reasonable position is to assume that Uri has genuine psychic powers which he supplements with trickery because he does not have full mastery of the paranormal ability. The Geller controversy is no longer in the limelight, but parapsychologists have not given up their hopes for metal bending. At the recent meetings of the Society for Psychical Research and the Parapsychological Association in Cambridge, England an Israeli parapsychologist showed a film of a new "psychic" metal bender; a spoon bending party was held; and the physicist Hasted, the author of a recent book on metal bending, defended the reality of paranormal metal bending by children and others. And in a recent book, Collins and Pinch bring to bear sophisticated philosophy and sociology of knowledge to argue that the reality of psychic metal bending depends upon your framework.

How plausible does it seem to you that individuals can deform metal by use of their mind without the aid of physical force? What sort of evidence, if any, would convince you this was possible? How do you account for the fact that physicists of high repute claim that they have observed such paranormal metal bending under controlled scientific conditions? And how about other scientists who argue that the evidence is worthless and that Geller is nothing but a clever fraud? What suggestions do you have for the interested layman who is confronted with these contrasting positions by eminent scientists?

## 6.2 Clever Hans

"A horse that solves correctly problems in multiplication and division by means of tapping. Persons of unimpeachable honor, who in the master's absence have received responses, and assure us that in the process they have not made even the slightest sign. Thousands of spectators, horse-fanciers, trick-trainers of first rank, and not one of them during the course of many month's observations are able to discover any kind of signal.

"That was the riddle.."

Professor Carl Stumpf in the Introduction to O. Fungst's Clever Hans (1911).

"And now what was it that this wonderful horse could do? The reader may accompany us to an exhibition which was given daily before a select company at about the noon hour in a paved courtyard surrounded by high apartment houses in the northern part of Berlin. No fee was ever taken. The visitor might walk about freely and if he wished, might closely approach the horse and its master, a man between sixty and seventy years of age. His white head was covered with a black, slouch hat. To his left the stately animal, a Russian trotting horse, stood like a docile pupil, managed not by means of the whip, but by gentle encouragement and frequent reward of bread or carrots. He would answer correctly, nearly all of the questions which were put to him in German. If he understood a question, he immediately indicated this by a nod of the head; if he failed to grasp its import, he communicated the fact by a shake of the head....His master, to be sure, was usually present whenever questions were put to the horse by others, but in the course of time, he gradually responded to a greater and greater number of persons. Even though Hans did not appear as willing and reliable in the case of strangers as in the case of his own master, this might easily be explained by the lack of authoritativeness on their part and of affection on the part of Hans, who for the last four years had had intercourse only with his master."

—O. Pfungst (1911)

Hans had apparently completely mastered the cardinal numbers from 1 to 1000; he could solve problems in arithmetic; he could readily read both printed and written German; he knew the value of all the German coins; "he could give you not only the date for each day without having been previously taught anew, but he could give you the date of any day you might mention"; he recognized persons after seeing them once, even from photographs; his musical ability was extraordinary; Hans "was declared by experienced educators to be at about the stage of development of a child of 13 or 14 years."

The argument that animals, if properly educated, have both consciousness and intellectual abilities that approach our own keeps recurring. Today we have controversies over the linguistic capabilities of apes and dolphins. And some individuals, such as the parapsychologist D. Scott Rogo, strongly defend the intellectual abilities of Clever Hans and his successors.

Again, we are confronted with a controversy in which experts disagree. Hans was tested and endorsed by a commission consisting of animal trainers, circus owners, zoologists, psychologists and educators. Other scientists argued, just as forcefully, that Hans was simply a horse doing what horses do best—obeying commands and cues from humans. How would you decide? What sorts of evidence and arguments would convince you?

If the experts were wrong in their assessment of Hans, does this reflect upon their intelligence and competence? If not, what does it suggest?

### 6.3 TM and levitation

In 1977 Maharishi Mahesh Yogi announced a "new breakthrough in human potential" in the form of the Age of Enlightenment Course. According to Maharishi, "Enlightenment implies the

ability to act without making mistakes, to be successful in our undertakings without making problems for ourselves, our community, or our environment. This means that one has the ability to function without violating the laws of nature, to act in such a way that one is always supported by nature...Practice of the sutras simultaneously produces beneficial effects on the inner level of consciousness and the outer observable levels of physiology and the environment. Profound development of mind-body coordination is the automatic and immediate result...with the growth of enlightenment the ability to perform the siddhis, known throughout the ages as 'supernormal powers,' automatically grows...In this context it is now practical and scientifically significant to discuss such phenomena as levitation, invisibility, and mastery over the fundamental forces of nature in general. We have passed a new threshold in the field of consciousness: the discovery and demonstration of consciousness as the field of all possibilities, we can, from current results, already envision the development of an ideal society, established on the basis of even a few individuals functioning with full potential..."

For an investment which could eventually reach a total of four thousand dollars or more, the student who has already gone through the regular transcendental meditation course, could now go through the siddhis program which develops supernormal abilities including "the ability to experience anything at will on the level of inner sense-awareness, the ability to perceive things which are beyond the reach of one's senses, the development of profound intimacy with and support from one's physical environment, and even such abilities as disappearing and rising up or levitating at will."

With this startling announcement, TM changed its image as the McDonald's of the Consciousness Raising circuit—from a system for relaxing and relief of stress to a sure-fire recipe for transcending ordinary human limits such as the adherence to the law of gravity. The media focussed on this claim to levitate, but the leaders and practitioners refused to demonstrate their claimed powers before the uninitiated. If you were curious, you had no other recourse but to pay the enormous fee and go through the course. Many obviously did. And many of these insist that they can, in fact, levitate. However, no one has ever performed such a feat before an outsider.

Again, we have a situation in which experts disagree. Physicists and TM adherents who have gone through the siddhis course insist they can levitate. Outsiders and skeptics insist that this is blatant deception and self-deception and other than normal hopping up and down, no actual levitation occurs. Many defenders of TM, while still insisting that the levitation actually occurs, argue that all this attention to the supernormal feats is unfortunate because it detracts from the real purpose of the program which is to develop cosmic consciousness and achieve cosmic bliss.

How would you evaluate the success and claims of this program? What sorts of evidence would you seek? Is it plausible that these individuals actually can levitate? Are there other reasons why they may believe and report that they levitate?

#### 6.4 "Pseudoscience on the campus"

"A seminar on reincarnation is being conducted this semester at Iowa State University by a professor who takes a 'phenomenological' approach to psychology, lectures on astrology and teaches his students to see the 'visible color of the energy field around people.' Twin issues are thus raised once again at a major institution of higher learning: where does the boundary lie between science and pseudoscience and to what extent should academic freedom protect the right of eccentric faculty members to present material that most of their colleagues believe is at best outside the mainstream of their discipline and is at worst either religious or mystical special pleading or even fakery?...

"David Weltha is associate professor in Iowa State's department of family environment, which offers courses in consumer management, housing, and household equipment, as well as on 'the individual and the family.' Weltha teaches a course titled 'The Individual and Family Development' that he says emphasizes 'man's potential' and the 'awareness of consciousness.' In it he includes instruction in astrology and its 'relation of the cosmic to the mundane' and on the 'aura' that surrounds an individual, which, he teaches, can be seen and can be recorded by Kirlian photography. In his seminar on 'Your Former Lives' he intends 'to explore the meaning of life through the reincarnation theory and regression techniques through guided fantasies.' Regression in this sense means becoming aware of life before one's birth, both in utero and in possible previous incarnations. Weltha says, 'I'm not a researcher. I'm simply a conveyor of information to the students and it is very controversial.'

"John W. Patterson, professor in the Iowa State department of materials science and engineering, has challenged Weltha precisely on the ground that because what he teaches is controversial it should not simply be 'conveyed' to students but should be supported by evidence and subjected to the challenge of conflicting opinion. He believes, along with some other faculty members who have not taken a public position, that Weltha is accepted by many of his students not simply as a conveyor but as a kind of oracle with special access to the truth..."

---Scientific American, April, 1978

"To let scientists discount astrology because it isn't scientific is like letting musicians discount athletics because athletics aren't musical, said Dave Weltha, family environment, Tuesday.

"Weltha, who has earned notoriety because of his efforts to teach such subjects as reincarnation and hypnosis at ISU, gave a lecture on astrology to about 40 persons at the YWCA in Alumni Hall.

"My opponents have suggested that I should not talk about astrology, or auras, or voodooism or anything else until it has been scientifically proven. Now, I don't tell engineers not to build bridges until they have been psychically tested,' Weltha said.

"He said the main disagreement between him and physical scientists is the methods used to prove or disprove theories...He

said scientists who say there is no truth to astrology, have never studied astrology. 'There's this notion of "do you believe in astrology?" That is a very stupid question. Nobody asks if you believe in physics. They are methods of explaining, and they themselves are not something to believe in. They are not the issue..'"

---Iowa State Daily, March 15, 1978

What do you make of Weltha's argument that scientists should not evaluate astrology and psychics should not test bridges? How would you suggest resolving the controversy between Weltha and Patterson. If you were president of ISU, what would you propose?

#### 6.5 Pseudopsychologies and these cases

The TM case and Weltha's teaching of astrology and reincarnation seem clearly relevant to issues in pseudopsychologies. But what about Geller and Clever Hans? Whatever else it may be, Geller's claims to paranormally destroy metal objects is not a pseudopsychology. It does not constitute a claim to treat, develop, or enhance mental processes. Nor is Clever Hans, no matter how accomplished his feats (no pun intended), a prototypical example of a pseudopsychology. So why are we discussing them? Can you think of good reasons for their inclusion in this course?

#### 7.0 Calendar

(Note: the list of lecture topics is very tentative. Some changes will be made. However, the list should provide some idea of what will be covered.)

| <u>Week</u> | <u>Dates</u>  | <u>Topics</u>                                       | <u>Assignments</u>  |
|-------------|---------------|---|---------------------|
| 1           | Apr 4         | Metacognition                                       | Begin Neher         |
| 2           | Apr 9, 11     | Cognitive Failure                                   |                     |
| 3           | Apr 16, 18    | Observation & Testimony                             | Report 1 due Apr 18 |
| 4           | Apr 23, 25    | Dissociation  | Begin Vogt/Hyman    |
| 5           | Apr 30, May 2 | Deception   | Report 2 due May 2  |
| 6           | May 7         | MIDTERM   |                     |
|             | May 9         | Uri Geller (Video)                                  | Begin Marks/Kammann |
| 7           | May 14, 16    | GUEST: JERRY ANDRUS<br>"Psychic Confession" (Video) |                     |
| 8           | May 21, 23    | Psychic Research                                    | Report 3 due May 21 |
| 9           | May 28, 30    | Gall & Phrenology                                   |                     |
| 10          | Jun 4, 6      | Psychic Reading                                     | TERM PAPER DUE JU 4 |
| 11          | June 10       | FINAL EXAMINATION                                   | 10:15 to 12:15      |

#### 8.0 Bibliography

(Most of these are in the UD library)

Abell, G.O., & Singer, B. (Editors). Science and the paranormal. New York: Charles Scribner's Sons, 1981.



Skeptical chapters on monsters, plant sensibility, parapsychology, astrology, moon madness, biorhythms, scientists and psychics, life after death, psychic healing, Kirlian photography, Velikovsky, Ancient astronauts, pyramid power, lost continents, Bermuda triangle, and UFO's.

Alcock, J.E. Parapsychology: science or magic? New York: Pergamon, 1981.

Alcock looks at parapsychology both in terms of the arguments for it and the psychology of belief in it. The verdict: it is a pseudoscience.

Bird, C. The divining hand: the art of searching for water, oil, minerals, and other natural resources or anything lost, missing or badly needed. New York: Dutton, 1979.

"The second half of the book is devoted to experiments and achievements in modern times, including the successful diagnosis of car-engine trouble, the location of munitions caches during the Vietnam War and the astonishingly accurate finding for Standard Oil Company of oil in six wells by dowser Paul Clement Brown.... Enjoyment of this book does not depend on unquestioning belief, although it is difficult to maintain skepticism in the face of such convincing and well-written arguments."

--Doris Grumbach, New York Times Book

Reviews, Sept 2, 1979.

Just the book for those who are looking for excuses to believe.

Blackmore, S.J. Beyond the body. London: William Heinemann Ltd., 1982.

An excellent examination of the Out-of-body experience with proposed explanations in terms of contemporary psychology.

Cialdini, R.B. Influence: how and why people agree to things. New York: Wm. Morrow & Co., 1984.

Collins, H.M., & Pinch, T.J. Frames of meaning. London: Routledge & Kegan, 1982.

I have not read this book. But I am told that they take me and other skeptics to task for exaggerating the amount of chicanery underlying spoon bending performances. Because they caught a few children cheating, they argue, does not mean that all such phenomena are tricks.

Davies, J.D. Phrenology: fad and science. New Haven: Yale Univ. Press, 1955.

Deutsch, R.M. The new nuts among the berries: an expose of America's food fads. (Revised edition). Palo Alto, CA: Bull Pub. Co., 1977.

Doyle, A.C. The coming of the fairies.

Ellwood, R.S. Religious and spiritual groups in modern America. Englewood Cliffs, N.J.: Prentice-Hall, 1973.

Evans, C. Cults of unreason. New York: Farrar, Straus & Giroux, 1973.

Mostly covers Scientology, but also flying saucer cults, black boxes and other related matters.

Flournoy, T. From India to the planet Mars. New Hyde Park, N.Y.: University Books, 1963 (Originally published 1900).

Frazier, K. (Editor). Paranormal borderlands of science. Buffalo, New York: Prometheus Books, 1981.

A collection of articles from The Skeptical Inquirer covering such matters as parapsychology, fairies, psychic reading, Uri Geller and metal bending, Amytyville Horror, Biorythms, astrology, Bermuda Triangle, Dowsing, Cattle mutilations, extraterrestrial visitors, psychic archeology, Velikovsky, UFO's.

Fuller, U. Confessions of a psychic. Teaneck, N.J.: K. Fulves, 1975.

Fuller, U. Further confessions of a psychic. Teaneck, N.J.: K. Fulves, 1980.

In these two booklets, Uriah Fuller, Uri's mythical rival tells all.

Gardner, M. Fads and fallacies in the name of science. New York: Dover, 1957.

Gardner, M. Science: Good, bad, and bogus. Buffalo, N.Y.: Prometheus Books, 1981.

Grim, P. (Editor). Philosophy of science and the occult. Albany, N.Y.: State University of New York Press, 1982.

Hansel, C.E.M. ESP and parapsychology: a critical evaluation. Buffalo, N.Y.: Prometheus, 1980.

Hardy, A., Harvie, R., & Koestler, A. The challenge of chance: a mass experiment in telepathy. New York: Vintage, 1975.

See Marks and Kammann for an unflattering discussion.

Hasted, J. The metal benders.

Hendry, A. The UFO handbook: a guide to investigating, evaluating and reporting UFO sightings. Garden City, New York: Doubleday & Co., 1979.

Hitching, F. Dowsing: the psi connection. Garden City, N.Y.: Anchor Books, 1978.

By far the best pro-dowsing book. Hitching argues that controlled scientific studies fail to support dowsing. But since he knows dowsing works, he wants scientists to change their rules so that dowsing will pass muster.

Jackson, H.G., Jr. The spirit rappers: the strange story of

Kate and Maggie Fox. Garden City, N.Y.: Doubleday, 1972.

Jahoda, G. The psychology of superstition. Baltimore: Penguin, 1970.

Jastrow, J. Wish and wisdom. New York: Appleton-Century, 1935 (reprinted by Dover as "Error and Eccentricity").

Kahnemann, D., Slovic, P., & Tversky, A. (Editors). Judgment under uncertainty: heuristics and biases. New York: Cambridge Univ. Press, 1982.

Keene, H.L. The psychic mafia. New York: St. Martin's Press, 1976.

Klass, P.J. UFOs explained. New York: Random House, 1968.

Koestler, A. The roots of coincidence. London: Hutchinson, 1972.

Kusche, L.D. The Bermuda triangle mystery---solved. New York: Harper & Row, 1975.

Leahey, T.H., & Leahey, G.E. Psychology's occult doubles: psychology and the problem of pseudoscience. Chicago: Nelson-Hall, 1983.

Leoni, E. Nostradamus: life and literature. New York: Nosbooks, 1961.

Mackay, C. Extraordinary popular delusions and the madness of crowds. New York: Noonday, 1970. (Originally published in 1840).

Moore, R.L. In search of white crows: spiritualism, parapsychology, and American culture. New York: Oxford University Press, 1977.

Nisbett, R., & Ross, L. Human inference: strategies and shortcomings of social judgment. Englewood-Cliffs, NJ: Prentice-Hall, 1980.

Nolen, W.A. Healing: a doctor in search of a miracle. Greenwich, Conn.: Fawcett, 1974.

Panati, C. (Editor). The Geller papers: scientific observations on the paranormal powers of Uri Geller. Boston: Houghton-Mifflin, 1976.

It might help, after reading this, to look at:

Gardner, M. Geller, gulls, & nitinol. The Humanist, 1977, (May/June), 37, 25-32.

Hyman, R. Review of The Geller Papers. The Zetetic, (Now known as The skeptical inquirer), 1976, (Fall/Winter), 1, 73-80.

Pfungst, O. Clever Hans. New York: Holt, 1911.

Puharich, A. Uri: a journal of the mystery of Uri Geller. Garden City, N.Y.: Anchor, 1974.

This was the first book on Geller, written by the man who discovered him and brought him to the United States. This will test your credulity. If you can buy Puharich's story about the planet Hoova and all the rest, then your credulity is unlimited. With this book, Doubleday Anchor cinched its claim to be the The National Inquirer of the publishing world.

Radner, D., & Radner, M. Science and unreason. Belmont, Calif.: Wadsworth, 1982.

Randi, J. The magic of Uri Geller. New York: Ballantine, 1975.

Randi, J. The truth about Uri Geller. Buffalo, NY: Prometheus Press, 1982.

Slightly updated version of the preceding item. Either one will do.

Randi, J. Flim Flam.

Rogo, D.S. Parapsychology: a century of inquiry. New York: Dell, 1975.

Rose, L. Faith healing. Baltimore: Penguin, 1971.

Sargant, W. Battle for the mind: a physiology of conversion and brainwashing. New York: Harper, 1957.

Sargant, W. The mind possessed. Baltimore: Penguin, 1974.

Trance states, religious ecstasies, possession states, and mystical experiences.

Sebeok, T.A., & Rosenthal, R. (Editors). The Clever Hans phenomenon: communication with horses, whales, apes, and people. New York: New York Academy of Sciences, 1981.

Clever Hans, ape language, porpoises, psychic reading, self-deception, placebos, deception.

Seybert Commission. Preliminary report of the commission appointed by the University of Pennsylvania to investigate modern spiritualism in accordance with the request of the late Henry Seybert. Philadelphia: J.B. Lippincott, 1920 (reprint of 1887 edition).

Targ, R., & Puthoff, H.E. Mind-reach: scientists look at psychic ability. New York: Delacorte, 1977.

This is worth reading in conjunction with Marks and Kammann. This gives you the story from the other side. You may also be interested in my review:

Hyman, R. Psychics and scientists, "Mind Reach" and remote viewing. The Humanist, 1977, (May/June), 37, 16-20.

Targ, R., & Harary, K. The mind race: understanding and using psychic abilities. New York: Villard Books, 1984.

This goes beyond Mind-reach in many ways. Again, you might want to read my review in the Winter 1984-85 issue of The Skeptical Inquirer.

Turner, F.M. Between science and religion: the reaction to scientific naturalism in late Victorian England. New Haven, Ct.: Yale Univ. Press, 1974.

Vaughan, A. Incredible coincidence: the baffling world of synchronicity. New York: Lippincott, 1979.

White, J., & Krippner, S. (Editors). Future science: life-energies and the physics of paranormal phenomena. Gardena City: N.Y.: Anchor, 1977.

Among other things the authors still take animal magnetism and N-rays quite seriously.

Wilhelm, J. The search for superman. New York: Pocket Books, 1976.

Another view of Uri Geller.

Wolman, B.B. (Editor). Handbook of parapsychology. New York: Van Nostrand Reinhold, 1977.

Now in paperback, this tome of almost a thousand pages should count as the most official presentation of what parapsychology is all about.

Zoellner, J.C.F. Transcendental physics. New York: Arno Press, 1976 (reprint of 1888 translation).

Zusne, L., & Jones, W.H. Anomalistic psychology: a study of extraordinary phenomena of behavior and experience. Hillsdale, N.J.: Lawrence Erlbaum, 1982.

The nearest thing to a textbook in this field.

Two magazines that are highly relevant:

The Skeptical Inquirer.

Put out by the Committee for the Scientific Investigation of Paranormal Phenomena, this quarterly presents skeptical, popular accounts of current belief systems.

The Zetetic Scholar

This is a more scholarly journal that attempts to keep a dialogue going between the more serious believers and critics on anomalistic phenomena.

## KEY WORDS &amp; CONCEPTS

The terms or phrases listed below have been taken from the lectures and the three textbooks. They include names of people, cases, illustrations, principles, phenomena and processes. Each of them serves as a pointer to important concepts and ideas for helping us to understand and evaluate pseudopsychological claims. Some of them are redundant or closely related. You may want to add important ideas or terms that I have overlooked.

AFTERIMAGES  
ALLOCATION OF RESOURCES  
ANOMALIES OF COGNITION  
AURAS  
AUTOKINETIC EFFECT  
AUTOMATIC WRITING  
AUTOMATISMS  
AUTONOMOUS  
AVAILABILITY  
BARRETT & BESTERMAN  
BIRTHDAY PROBLEM  
BRIDEY MURPHY  
CASE HISTORIES  
CIRCLE-IN-TRIANGLE  
CLEVER HANS  
CLUSTERING ILLUSION  
COGNITIVE FAILURE  
COLD READING  
CON GAMES  
CONDITION I  
CONDITION II  
CONFIRMATORY BIAS  
CONTRIBUTIONS(O,E)  
CROOKES  
CRYPTOMNESIA  
DARTMOUTH-PRINCETON GAME  
DATA LIMITS  
DATA SELECTION  
DAVENPORT BROTHERS  
DECEPTION  
DEFAULT VALUES  
DEJA VU  
DELAYED CONTROL GROUP  
DEMAND CHARACTERISTICS  
DIFFERENCE DETECTORS  
DISSOCIATION  
DIVINATION SYSTEMS  
DIVINING ROD  
DOMINANT EYE  
DOMINO  
DRAMATURGICAL APPROACH  
ELIZA  
EQUIVALENT ODDMATCHES  
ESP  
EXPERTISE  
FALSIFIABILITY  
FARADAY

FIELD EXPERIMENTS  
FIELD TESTS  
FISHING  
FIXING WATCHES  
FORER  
FOSTER  
FOX SISTERS  
FUGUE STATES  
GAIN COOPERATION  
GALL  
GARFINKEL  
GRASSHOPPERS  
GELLER  
GREMLIN ILLUSION  
HALLUCINATIONS  
HARE  
HENRY GROSS  
HINDSIGHT  
HOW MANY F'S?  
HYDRICK  
HYPERESTHESIA  
HYPNAGOGIC IMAGERY  
HYPNOPOMPIC IMAGERY  
HYPNOSIS  
HYSTERICAL AMNESIA  
IDEOMOTOR ACTION  
ILLUSION OF INVULNERABILITY  
ILLUSORY CORRELATION  
IMAGERY  
IMAGINATION VS. PERCEPTION  
INCREMENTALISM  
INFERENCE  
JAMAIS VU  
KEY BENDING  
KOEHLER'S FALLACY  
KRESKIN  
LABORATORY EXPERIMENTS  
LADY WONDER  
LUCID DREAMS  
MAGICAL DIVINATION  
MALINOWSKI  
MEDITATION  
METACOGNITION  
MIKE  
MISDIRECTION  
MISTORIES  
MONTE

MULTIPLE END POINTS  
MULTIPLE PERSONALITY  
N-RAYS  
NOSTRADAMUS  
"NOT ME" SYNDROME  
OBE  
OBJECTIVE BASELINES  
OBSERVATION  
ODDMATCHES  
OUIJA  
OVER-VALUED IDEAS  
PAPER FOLDING  
PARANORMAL METAL BENDING  
PARAPSYCHOLOGY  
PAREIDOLIA  
PENDULUM  
PERKY  
PERSONAL VALIDATION  
PERSUASION VS CONVICTION  
PFUNGST  
PHRENOLOGY  
PILTDOWN MAN  
PITTED WINDSHIELDS  
PK  
PLACEBO  
POLARIZATION  
POPULATION STEREOTYPES  
POSSESSION  
POWER-OF-THE-SITUATION  
PROBABILITY MATCHES  
PROGRESSIVE MATCH MAKING  
PSYCHIC FISHING FALLACY  
PSYCHIC HEALING  
PSYCHIC READING  
PSYCHICS & SCIENTISTS  
PSYCHOGENIC AMNESIA  
PUTHOFF  
RADIESTHESIA  
RATIONALIZATION  
RECIPROCITY  
REMOTE VIEWING  
REPRESSION  
RESOURCE LIMITS  
RHINE  
ROLES  
ROOTS OF COINCIDENCE  
ROPE TIE  
RUBINI  
SCARCITY  
SCHEMA-WITH-CORRECTION  
SELECTIVE EXPOSURE  
SELF-FULFILLING PROPHECY  
SELF-PERCEPTION  
SELF-PERPETUATING BELIEFS  
SELF-SEALING BELIEFS

SEMANTIC SATIATION  
SHILL  
SEMIOTICS  
SETTING THE STAGE  
SEVEN-OF-CLUBS TO SEVEN-OF-CLUBS  
SHIPI STRANG  
SHYNESS EFFECT  
SILVER CORD  
SLADE  
SLATE WRITING  
SMALL WORLD PROBLEM  
SOCIAL PROOF  
SOCIETY FOR PSYCHICAL RESEARCH  
SPIRIT COMMUNICATION  
SPURZHEIM  
SRI  
STOCK SPIEL  
SUBJECTIVE VALIDATION  
SUGGESTIBILITY  
SYMBIOSIS  
TABLE TILTING  
TARG  
TESTIMONY  
THE GELLER EFFECT  
THE NEW WORD EFFECT  
THE SHYNESS EFFECT  
THEORY OF 4D  
TIP-OF-THE-TONGUE  
TRADEOFFS  
TRANSCENDENTAL EXPERIENCES  
TRIZONAL SPACE WARPERS  
TYPE I ERROR  
TYPE II ERROR  
UNSEEN CAUSE  
UNTESTED FALSE ASSUMPTION  
URBAN DOWSER  
VETO  
VIVIDNESS  
WALLACE  
WATER WITCHING  
WOLFE, JEFFREY  
WRONG CONCLUSIONS FOR RIGHT REASONS  
ZOELLNER

**FINAL EXAMINATION**

Please print your name legibly, both on this examination form and the multiple choice answer sheet.

**PART I: MULTIPLE CHOICE (60 points)**

Choose the one best answer to each of the following 60 items. Fill in the answer with a #2 pencil on the separate answer form.

1. Vogt and Hyman conclude that witching is more likely to be employed
  - a. under conditions of uncertainty and risk
  - b. under conditions where water is easiest to find
  - c. by the less educated
  - d. by well-drillers
2. Vogt and Hyman conclude that water witching is a form of
  - a. superstition
  - b. magical divination
  - c. institutional decision
  - d. individual decision
3. Believers and skeptics agree that
  - a. only experimental data should be considered in evaluating dowsing
  - b. field experiments yield results in favor of dowsing
  - c. dowsers can find water better than chance
  - d. the more closely the investigation approximates the conditions of a laboratory experiment, the worse the diviner performs
4. A serious drawback in the case for Bridey Murphy as presented by its defenders was
  - a. the lack of scientific credentials by the author
  - b. the failure to investigate Ruth Simmon's childhood
  - c. Bridey's inability to speak with an Irish brogue
  - d. all of the above
5. The probability of my thinking of a hippopotamus and then unexpectedly finding one in my bedroom when I arrive home is very low. But the probability of at least one of my many daily thoughts matching some event in my environment is much higher. This is
  - a. the new word fallacy
  - b. the gremlin illusion
  - c. the principle of equivalent oddmatches
  - d. the small world problem
6. When Hardy and Harvie found that the number of target matches was no greater than the number of control matches, they repeated the control matches with further shuffling of the data. This is an example of
  - a. the type II error
  - b. selective exposure
  - c. the delayed control group
  - d. the psychic fishing fallacy
7. Geller's apparent success in fixing broken watches
  - a. is the one phenomenon that Marks and Kammann could not explain by natural forces
  - b. depends upon his handling of the watches
  - c. cannot be studied by the delayed control group
  - d. depends on the fact that 50% of "broken" watches will start to run when handled
8. Marks and Kammann gave sealed envelopes to students to see if they could reproduce the folded drawing inside. This is an example of the method of
  - a. clairvoyance
  - b. personal validation
  - c. the delayed control group
  - d. the unseen cause



9. People are surprised that keys bend in Uri's hands and assume the bending must be psychically induced. This is an example of
- an untested false assumption
  - hindsight
  - the gremlin illusion
  - data selection
10. When Kreskin suggests to a woman that he is mentally receiving an impression of a crack in the kitchen door, she hesitates and then replies "no...its in the bedroom door." Presumably, she hadn't been thinking of a crack, but remembered one to match Kreskin's expectations. This is an example of
- psychogenic amnesia
  - equivalent oddmatches
  - demand characteristics
  - cryptomnesia
11. When Susan Blackmore was having her OBE, the roofs and chimneys she saw while she felt she was hovering above the ground
- did not agree with the actual roofs
  - agreed remarkably with the real roofs
  - were attached to her by a silver cord
  - turned out to be those of another place
12. Susan Blackmore's OBE
- reduced her fear of death
  - increased her fear of death
  - convinced her that mind was separate from body
  - was deliberately ignored
13. Susan Blackmore defines the OBE as
- an experience in which one seems to perceive the world from a location outside the physical body
  - an experience in which some part of the personality leaves the physical body
  - an experience in which the mind can paranormally pick up information from distant places
  - an experience which is shared with at least one other person
14. Autoscopy is
- the experience of seeing the apparation of a person who has just died
  - the experience of seeing one's own double
  - the belief that one is flying
  - a lucid dream in which one dreams of having a lucid dream
15. Of the individuals who have reported an OBE
- only a small minority report being connected to their body by a cord
  - a majority report having been connected to their body by a cord
  - a majority report a silver cord that is connected to the head
  - a majority report a silver cord that is connected to the navel
16. OBE's
- occur mainly to individuals in western societies
  - occur only in dreams in other cultures
  - are widespread and occur both in developed and less-developed countries
  - are restricted only to specially trained individuals
17. After reviewing various surveys and taking into account their biases, Blackmore estimates that the percentage of people in our culture who have had an OBE is
- 10%
  - 25%
  - 50%
  - 75%
18. In a lucid dream, the dreamer
- experiences an OBE
  - experiences flying or falling
  - has a double
  - knows she is having a dream
19. Dreams tend to occur during
- stage 4 sleep
  - the stage of "paradoxical sleep"
  - the earlier half of the sleep period
  - a fraction of a second

20. The physiological evidence on those subjects who have experienced OBE's in the laboratory suggest that the OBE
- occurs during REM sleep
  - is physiologically identical to normal dreaming
  - is a discrete physiological state
  - is not associated with any discrete physiological state
21. OBE's and autoscopy
- both share the experience of leaving one's physical body
  - differ in that in autoscopy, the patient believes another person has left her body
  - differ in that in autoscopy the patient does not experience leaving her physical body
  - both occur in conjunction with depersonalization
22. According to Blackmore, the physical body that we see during an OBE
- rarely matches what an objective observer would see
  - is based on our own mental image of that body
  - has missing gaps corresponding to those features of our bodies which we cannot observe
  - is fuzzy and lacks detail
23. In Blackmore's opinion, the world through which we travel in an OBE
- is based on information obtained through ESP
  - is based on our cognitive maps
  - is two-dimensional rather than three-dimensional
  - is parallel with, but separate from, the everyday physical world
24. Comparisons of those who have had OBE's with those who have not suggest that persons who have had an OBE also score higher on tests of
- vividness of imagery
  - control of imagery
  - absorption
  - habitual imagery
25. Blackmore argues that the OBE
- cannot be accounted for in terms of physiological mechanisms
  - is the same as the experience of seeing one's double
  - is distinct from hallucinatory experiences
  - is one form of a hallucination
26. Among other problems with evidence about ESP during OBE's is the phenomenon of
- doppelganger
  - the Capgras syndrome
  - jamais vu
  - cryptomnesia
27. Miss Z's correct reporting of a five-digit number apparently seen while she was having an OBE cannot be conclusive evidence for paranormal vision because
- it could easily have been a lucky guess
  - of Koestler's fallacy
  - of the gremlin illusion
  - all possibilities of normal vision, such as reflections, were not excluded
28. Blackmore concludes that paranormal vision during an OBE occurs
- only in spontaneous cases
  - mainly in deliberately induced experiences
  - if it occurs at all, extremely rarely
  - only to specially gifted individuals
29. Experiments which reported a loss in weight at the time of death
- demonstrate that a life force leaves the body at the time of death
  - suggest that the soul is material rather than immaterial
  - did not properly take into account the loss of water vapor
  - succeeded with animals but not with humans

30. According to Blackmore, a serious problem with trying to weigh the soul as it departs from the body is
- the lack of sensitive scales
  - the ambiguity of determining the moment of death
  - the opposition of the church
  - that some individuals do not have souls
31. After reviewing the experimental evidence using human, animal and physical detectors, Blackmore believes that
- only humans can detect the presence of an astral body
  - what leaves the body is radioactivity
  - the body gives off N-rays
  - nothing detectable leaves the body during an OBE
32. Blackmore argues against the existence of a duplicate body that can perceive because
- this would violate the laws of entropy
  - no one has yet detected such a body
  - perception requires mechanisms which would be detectable
  - Descartes argued that the soul was a unity
33. Blackmore's theory assumes that the OBE
- is a form of lucid dream
  - is a situation in which only a mental, nonmaterial substance leaves the body
  - is an altered state of consciousness
  - can only occur to healthy individuals
34. The demonstration with the domino illustrated
- confirmatory bias
  - afterimages
  - resource allocation
  - data limits
35. The failure to detect all the F's is an example of
- multistability
  - hyperesthesia
  - data limits
  - resource limits
36. The mark gets taken in the three-card monte game because he
- is basically honest
  - is basically unintelligent
  - unconsciously wants to lose
  - plays the role that the other players have created for him
37. The roper is the person who
- is swindled
  - operates the game
  - brings the mark to the game
  - pretends to lose
38. The con-game illustrates
- contagious behavior
  - the power of the situation
  - the small world problem
  - progressive match-making
39. Zoellner's relationship to Slade can be characterized as
- antagonistic
  - parasitic
  - symbiotic
  - polarizing
40. Jerry Andrus claims he can fool you because
- you are irrational
  - you want to be fooled
  - the hand is quicker than the eye
  - you are perceptive and knowledgeable
41. Our failure to notice that Jerry Andrus had no lenses in his eyeglass frames indicates that
- our cognitive processes do not always function correctly
  - our cognitive processes were functioning normally
  - we are fooled because we accept what others say
  - he is a superb magician

42. According to Jerry Andrus, the trizonal spacewarper creates its effect because  
a. we cannot afford to question everything      c. of an inferred reality  
b. of the autokinetic effect      d. the senses are difference detectors
43. James Hydrick was able to move pencils and leafs by  
a. psychokenisis      b. using magnets      c. blowing      d. using invisible threads
44. Hydrick admits that he learned to perform his feats  
a. to spread the word of God      c. only to play a practical joke  
b. to gain a sense of power      d. from a confidence man
45. James Hydrick said that  
a. he regretted having deceived people  
b. he deceived people to make money  
c. he did not regret deceiving people because it was for their own good  
d. he did not regret deceiving people because it was a way of getting even
46. Robert Hare became converted to spiritualism  
a. by Henry Slade      c. as a direct result of reading Faraday's experiment  
b. when he personally experienced table-tilting      d. while he was still a young man
47. The scientist who claimed to have witnessed the materialization of a sunflower during a seance was  
a. Robert Hare      b. Alfred Russel Wallace      c. Sir William Crookes      d. Zoellner
48. The founders of the Society of Psychical Research believed that the strongest evidence for telepathy  
a. came from spontaneous cases      c. came from the experiments with the Creery sisters  
b. came from prophetic dreams      d. was the work with animals
49. The first man to make psychical research a systematic laboratory investigation was  
a. Alphred Russel Wallace      c. Michael Faraday  
b. Joseph Banks Rhine      d. Sir William Crookes
50. As a result of reading palms, Hyman  
a. decided that people are gullible  
b. discovered that some lines truly reflect aspects of a person's personality  
c. became a believer in the validity of palmistry  
d. was denied acceptance to graduate school
51. Much of the description of the whale and other characteristics in Melville's "Moby Dick" can only be understood in terms of  
a. semiotics      b. cryptomnesia      c. hypnopomic imagery      d. phrenology
52. The phrenologist Jeffrey Wolfe's suggested test of his abilities is inadequate because  
a. phrenology is known to be invalid      c. he would score the results  
b. it lacks an objective baseline      d. it fails to meet condition I
53. Gall called his system  
a. organology      b. phrenology      c. physiognomy      d. skullduggery
54. Gall's evidence for the validity of his system was inadequate because  
a. he lacked modern scientific tools for testing correlations  
b. he did not collect empirical data  
c. he was unwilling to admit that Descartes was correct  
d. he dissected the brain badly

55. Gall's system assumed that
- the brain was a unitary organ
  - the mind was separate from the body
  - the external shape of the skull reflected the shape of the underlying brain
  - personality was revealed by facial features
56. Gall was forbidden to lecture on his system in Vienna because
- it implied that the brain determined behavior
  - it denied the influence of the environment
  - it conflicted with Descartes' theory that the mind was unitary
  - he was a foreigner
57. Mike was convinced of the palmreader Barbara's authenticity because she
- told him what he wanted to hear
  - informed him of many specific details of his life
  - solved his current problem
  - felt a pain just at those moments Mike felt anxious about a personal problem
58. Eliza demonstrates that a computer program can
- understand natural language
  - create the illusion of understanding because of the contribution of the observer
  - diagnose human problems
  - create the illusion of understanding by properly setting the stage
59. When subjects responded to the identical quotation in different ways according to whether they believed the author was Jefferson or Lenin, Asch concluded that they were
- rational
  - irrational
  - inconsistent
  - prejudiced
60. The psychic reader, in effect, is
- a ghost writer
  - a psychic with compassion
  - a liar
  - a multiple personality

PART II: ESSAY (40 points)

Write your answer to this essay question on the blank pages attached to this test form.

Your task is to write an essay that captures the essential points of the course. You are to build the essay around five central or key examples. Use the three examples listed plus any two others of your own choosing. Try to choose the two additional cases so as to complement the three given ones.

CLEVER HANS  
ZOELLNER AND SLADE  
THE PSYCHIC READING