HYPNOTICALLY INDUCED ATTITUDE CHANGE, AND FOREIGN WORD ACQUISITION IN A PAIRED ASSOCIATE LEARNING TASK

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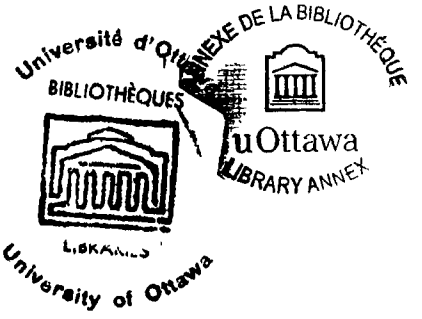

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CURRICULUM STUDIORUM

James W. Buechele was born on September 25, 1938, in Chicago, Illinois, U.S.A. He received the Master of Arts degree in Philosophy from the Aquinas Institute in River Forest, Illinois, in 1962, and the Master of Arts degree in Theology from the Aquinas Institute, Dubuque, Iowa, in 1966.

ABSTRACT

The present experiment sought to assess the effects of hypnotically induced attitude change toward a cultural group on learning paired associate foreign words belonging to that community. Twenty-eight male and 22 female subjects were assigned to one of five conditions: hypnosis with favorable ethnic attitude and learning suggestions (HAL), hypnosis with favorable ethnic attitude suggestions (HA), hypnosis with learning suggestions (HL), task motivation instructions (TMI), and control (C)). Recognition of Italian words assessments was taken at pretest and posttest. Attitudes toward Italians were monitored at pretest, after hypnotic manipulation, and postexperimentally. Recall scores for five trials of an English-Italian paired associate vocabulary list were recorded. The HA group recalled significantly more words than the TMI and the control group on four trials, and exceeded the control group in their recall scores on the last trial. HA subjects showed significant learning of new words on Trial 1 compared with all other groups, while HAL and HL subjects showed this effect on Trial 3. Although HAL and HA groups significantly increased in positive attitudes toward Italians, attitude change was unrelated to learning.

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CHAPTER I

REVIEW OF THE LITERATURE

Brief History of Hypnosis

Although hypnosis has existed for thousands of years, historians tend to date its scientific understanding at 1784. That year, Louis XVI commissioned Benjamin Franklin and several scientists to investigate the theory of animal magnetism proposed by Anton Mesmer. After several years of curing persons of various maladies by a process which resembled what most people today call hypnotism, Mesmer borrowed ideas from Paracelsus and Von Helmont to explain his work. He concluded that health was restored by balancing an ethereal magnetic fluid pervading the universe to its proper proportion in the afflicted body. Abandoning his earlier use of magnets, from 1776 onward he relied on techniques such as suggestion, fixing the gaze, and making passes over the body, and concluded that a convulsive crisis preceded the balancing of the fluid. It was clear to him that he must induce the patient's cooperation and will-to-be-cured; otherwise curing did not occur.

It was this latter point that the Franklin Royal Commission fastened upon (Tinterot, 1970, p. 102). In its experiments the scientists noted that when the patient was naive about what the mesmerist expected or when the patient

was unwilling to go along with the induction, nothing happened. Thus they concluded that animal magnetism was not the explanation; rather, they felt that anticipated persuasion and the power of imagination over sensations being experienced were the causes of cure.

The Royal Commission singled out key factors in the scientific explanation of hypnosis; namely, the required subjective cooperation and imagination on the part of the subject.

The same year, Mesmer's lay disciple, Armand Chastinet, Marquis de Puysegur, discovered somnambulism, which is generally conceded to be the deepest hypnotic condition. In this condition the subjects could speak lucidly, open their eyes and walk about, respond to the mesmerist's wishes and commands, and subsequently forget their experiences. Later, de Puysegur was able to produce the major hypnotic phenomena such as motor automatisms and catelepsies, amnesias, anesthesias, positive and negative hallucinations, post-hypnotic phenomena, and individual differences in suggestibility. He felt that if the mesmerist had exuberant faith and unaltering self-confidence, his willpower could transfer his magnetic influence to the patient. Scientific experimentation hampered this influence because it proceeded from scepticism, whereas de Puysegur's method relied upon cooperation and enthusiastic expectations. The work of Marquis de Puysegur is important, not only for the hypnotic

phenomena he produced, but for the underscoring of shared expectations at the heart of the induction (Fromm & Shor, 1972, pp. 21-24).

Because of the Royal Commission report and the excesses surrounding the work of de Puysegur, hypnotism was held in scientific disrepute. The scientific community tended to label it as the work of shamans and to ignore any serious investigation which asked for an open hearing. For example, John Elliotson (1791-1866) used mesmerism at the University College Hospital, London, to cure certain hysteric diseases. He appealed for scientific study of his work, only to receive scorn from the scientists. In spite of this, his publication, the Zoist (1843-1856), became an isolated clearinghouse for ideas and successes with hypnosis.

Undaunted by this inimical atmosphere, workers went ahead. In 1842, W. S. Ward used hypnotism to amputate a leg painlessly, establishing hypnosis as a surgical anesthetic (Boring, 1950, p. 121). James Braid (1795-1860), after witnessing demonstrations by Lafontaine in 1841, induced "artificial sleep" by having a subject stare at a fixed point. His Neurypnology: Rationale of Nervous Sleep (1843) defined hypnosis as a nervous sleep caused by paralysis of the eyes' levitator muscles which, in turn, caused a functional inactivity of the central nervous system. By 1847, he revised his view and said that hypnosis was due to monoideism; that is, to a trance state caused by fixing

attention on dominant ideas. Thus Braid emphasized the notion that hypnosis is a nervous sleep state brought about by fixed attention.

In India, James Esdaile was having great success with medical hypnosis. He published reports of over a hundred successful surgeries and other medical procedures. Although he received qualified approval from the Indian government in 1847, he was rebuffed by scientists when he returned to work in his native Scotland.

The last door was shut against hypnosis when ether was used as an anesthetic for extracting teeth by Wells (1844) and Morton (1846), and chloroform was used for surgery in England in 1847. These became medicine's preferred anesthetics, and hypnosis would have to fend for itself for the next thirty years until the famous controversy between the schools of Salpetriere and Nancy re-opened scientific curiosity.

While Europe officially ignored hypnosis, it was brought to the United States and set off two powerful movements of faith-healing (New Thought and Christian Science) and compelled American psychology to take notice in a publication by Clark University's Henry H. Goddard in 1899. His extended article reported on a two year comparison of healings achieved by New Thought, Christian Science, and hypnotism. He dismissed the charge that the cures were illusions worked upon credulous minds because too many of the cured were

highly intelligent and successful persons. Maladies cured ranged from hysterically induced symptoms in the joints and viscera, to non-malignant tumors, lameness, painful menstruation, retroversion and inflamation of the uterus.

How did they cure? Goddard showed that whenever cures occurred, the person's ideas were influenced by the healer. Failure occurred when the person did not believe the ideas or would not follow the suggestion. In short, cures were the result of suggestions. The power of suggestion lay in its ability to have an idea generate its motor activity. Just as disease can be caused mentally by translating suggestions (or conscious sensations of disease) into their motoric results, such as ideas of nausea leading to the physical preparations to vomit, so, too, disease can be cured by diverting attention away from pain, allowing muscular relaxation and the renewal of tissues. Either hypnosis or conscious re-eduction did this by utilizing subconscious nerve tracts which control involuntary muscular functions. He was careful to say that cures can be interfered with if needed organs are missing, or if time is lacking for regeneration to transpire, or if the mind could not cooperate due to prejudice and questioning (Goddard, 1899). Goddard is important because he defended the power of suggestion as a curative force and proposed possible biological-psychological relationships, in addition to showing how its force could be destroyed by prejudice and doubt.

By 1878, European scientists were ready to re-open their inquiry into hypnotic phenomena. At issue was whether hypnosis was a morbid or a natural condition. From his work with hysterical women, Charcot of the Salpetriere concluded that it must be a morbid state caused by different kinds of physical stimuli, which could issue into catalepsy, lethargy or artificial somnambulism, depending upon which brain reflexes were triggered. However, he missed the fact that hypnotic suggestion is related to that of normal "waking" life. Thinking that his subjects were unconscious, he discussed his theories before his audience, not realizing that the subjects were doing what he was suggesting in his explanations. Bernheim and Liebeault at Nancy returned to Braid's monoideism, which showed that hypnosis involves social stimulation of the subject. They extended this insight to explain hypnosis as a normal psychological process of suggestion. Bernheim called attention to the fact that we are constantly stimulated in everyday life by influences which could easily lead to errors of perception, hallucinations and illusions. Unless checked by reason, these errors would lead to their motoric counterpart. The same impression-motor linkage is involved in hypnosis, except that the tendency to activate is increased. If the idea of sleep is suggested, for example, the person's entire nervous force focuses on the idea of sleep and the body complies. In waking life, on the other hand, there is an inhibitory process at work which

allows time to judge perceptions and to consider the consequences of action. In this way, the impression-motor linkage can be delayed, and errors can be avoided (Sarbin, 1950).

The Nancy school felt that most people could be hypnotized. Because suggestibility is normal behavior, the person need only concentrate on the one dominant idea in this interpersonal exchange for it to activate automatically the sleeping behavior. Bernheim and Liebeault of the Nancy school should be credited for introducing and developing the notion of suggestion again, which later researchers refined into the concepts of imitation, identification and role-taking.

Elsewhere, Russia's Pavlov (1927) explained the non-volitional aspect of post-hypnotic suggestions as a special case of conditioned reflex. Over the course of a lifetime, a person accumulates a vast network of experiences which are stored and interconnected by conditioned reflexes. Speech has the power of recalling them by retrieving them to consciousness. There is a slight tendency to go into motor activity at this point. What happens in hypnosis is that there is a general state of inhibition in the cortex. When the hypnotist focuses the mind on a particular reflex, his continuing vocalization prevents other associations from working. Thus we have an isolated reflex translating itself into action while critical judgment is held in abeyance. Given the further suggestion to forget how this transpires,

the person finds himself reacting in conscious life without other associations at work, but doing something apparently automatically. The hypnotist has paired the suggestion with a conscious-life cue. Hence, the nonvolitional motor response.

Until the late 1920's, most theorizing about hypnosis was based on clinical reports describing it in terms of a therapeutic agent. Dissatisfied with this approach, Clark Hull in America set up a systematic experimental program to uncover the psychological characteristics of hypnosis and its relationships to waking suggestibility. To establish likenesses and differences, Hull used normal waking subjects as controls.

In more than 30 articles in the publication Hypnosis and Suggestibility (1933), Hull and his collaborators demonstrated that true sleep and hypnosis are unrelated, that post-hypnotic suggestions lose strength over time, and that recently acquired memory material is recovered as readily in the waking state as in hypnosis. Experimenting with relatively simple motoric behavior, Hull showed that everything that could be done under hypnosis could also be done in waking suggestibility, but in a somewhat attenuated form.

For Hull, hypnosis boiled down to a prestige suggestion, a condition not confined to the trance state. He defined prestige suggestion as the subject's belief from the experience of other subjects that the experimenter can get results. Even prestige suggestion was a learned habit like

waking suggestion; it was another example of an association between stimulus and response. The difference between hypnosis and ordinary waking suggestion was with the qualitative shift upward in susceptibility to prestige suggestion. It seemed that subjects were twice as susceptible to continuous suggestions to perform a variety of simple movements.

By tying hypnosis to S-R psychological theory, Hull removed much of the hocus-pocus surrounding the subject matter. Making prestige suggestion his explanation, he laid more of the groundwork for interpersonal or social-psychological explanations. However, his neo-behavioristic methodology was unable to deal with the complexities of the social interaction. Furthermore, his rejection of introspectionism precluded self-report data about the recall of otherwise inaccessible memories, as well as research into increased orgamismic involvement.

An explicit interpersonal explanation of hypnosis is White's role-taking theory (White, 1941). The hypnotist induces a state of drowsy consciousness midway between the levels of volition and unconscious striving by techniques designed to relax the subject and to reduce sensory input. In this state, there is a slight lowering of cortical inhibition and a release of more primitive energy processes. The subject is then motivated to strive in a meaningful, goal-directed way, the most general goal being to behave like a hypnotized subject as this is continuously defined by

the hypnotist and understood by the subject. White found that motivation is positively correlated with the need for deference, and negatively with the need for autonomy. Other needs may also influence success, such as the need for recognition, the need for sex, and the need to participate in the hypnotist's supposed power. Thus, in the context of role-taking, the subject can transcend the normal limits of volitional control, without experiencing his willpower and without subsequent memory.

At this point one can contrast the two major paradigms governing research today: the state theories and the non-state ones. Barber (1970) summarizes the opposites in the following way. State paradigms hold that hypnosis involves a state of awareness that is qualitatively different from other states of consciousness such as the waking state, the deep sleep state, and the state of unconsciousness. The hypnotic trance is not a momentary condition that the subject enters for only a few seconds, but is one in which he typically remains for a period of time. In this state, the subject can respond both subjectively and overtly to the various kinds of phenomena cited in the history of hypnosis. Whether or not different authors agree with the genuineness of the phenomenon, they do agree that it is a trance and label it hypnotic, rather than merely suggested. There are levels of the trance, varying from light, to medium, to deep, and to very deep (somnambulism). As the depth increases,

the ability to experience suggested phenomena vividly and intensely increases.

Barber's own nonstate paradigm states that the subject is like a member of an audience at a play. He comes to the theatre to have new experiences, with the attitude that it is interesting and worthwhile to feel happy, to empathize, and to have other thoughts, feelings, and emotions that the actors are trying to communicate. He expects and desires them. He knows he is part of a contrived situation, but does not attend to that. Having positive attitudes, motivations and expectancies of the communications from the stage, he imagines and thinks along with their statements and actions. Thus he thinks, feels, emotes, and experiences in line with the intentions of the actors.

So, too, the hypnotic subject comes with positive attitudes, motivations and expectancies; he lets himself imagine and think along with those things that are suggested and he experiences the suggested effects. If he has negative sets, he cannot go along with the suggestion. In either case, the subject has attitudes, motivations, and expectancies toward the communication, and these three factors vary on a continuum from negative, to neutral, to positive. Furthermore, these factors may interact in complex ways to determine to what extent a subject will let himself think along with and imagine those things that are suggested. This in turn determines his subjective and overt responses to test

suggestions. Concepts derived from abnormal psychology (trance, somnambulism and dissociation) can be replaced by those from normal, social psychology. The latter conceptualizes social influences such as attitudes, motivations and expectancies as mediating variables which induce conformity to the demands.

Hypnosis and Learning

Having reviewed the history of scientific hypnosis, we now turn to the literature on learning and hypnosis. Even though a number of earlier studies report increasing learning ability under hypnosis, they have been criticized on methodological grounds. A short summary of these criticisms will preface the review rather than explain them with each study.

Among many confounding variables in this type of research, Barber (1965, 1969) draws particular attention to the following. First, inadequate numbers of subjects. In some clinical reports or in some applied situations, too few subjects make the results highly unstable. An experimenter might get good results with some of his subjects and not with others. Or a replication might get very different results. The problems are legion--depth of hypnotizability, kinds of controls, sampling errors, and so forth.

A second problem in design confounds hypnosis per se with suggestions. If there is no control group given

only suggestions to balance a group given hypnosis with suggestions, one cannot be sure which variable caused the results.

A third error confounds hypnosis per se and/or hypnosis with suggestions with suggestibility itself. Here the experimenter may assign high susceptible subjects to the treatment conditions but not to the control group.

Then there is the special problem involved in an "own control" design. It is argued that, if the subject perceives unconscious but subtle cues from the experimenter, he may respond by trying harder in the hypnotic condition than in the waking condition. So the design must build in either an experimenter blind, or find ways for controlling the varying motivation levels within subjects.

The following review will be subdivided into work concerning tasks for learning only, recall only, and both. Each area will be further subdivided, depending upon whether the task was done before, during, or after hypnosis per se and/or hypnosis with motivating suggestions.

Three studies deal with improving general academic performance. Krippner (1963) compared 23 sophomores given hypnosis and 27 upperclassmen controls, and found general improvement in study habits, reduced exam anxiety and deeper long-term commitment to vocational goals. Little information about controls makes the report ungeneralizable. Estabrooks and May (1965) contrasted 18 students with

a posteriori controls (10 other students of comparable grade point average for each hypnotic subject). Giving them two to six sessions for discussion and hypnosis, they found 16 of the 18 showing some improvement in grade point average for the semester and over their subsequent college record. Confounding variables were hypnosis confused with suggestions, a strong personal relationship with the experimenter, and a lack of real control groups. Egan and Egan (1968) gave subjects two sessions in autohypnosis for increased relaxation, alertness, concentration and attention during study, plus Higgin's study guide to reinforce the hypnotic suggestions. They were unable to find any significant improvement in grade point average, changes in class rank and average hours of study per week.

Studies on Learning Only

Rosenhan and London (1963) compared tranceable and untranceable subjects given hypnotic induction only. They were asked to learn lists of nonsense syllables and poems. They found no significant differences between groups on either task. Edmonston and Stanek (1966) matched subjects on high and low susceptibility and then gave only hypnotic induction. Tasks involved learning material of varying meaningfulness. Results showed no significant gains due to hypnosis, but a nonsignificant gain in learning high meaning words.

Studies on Recall Only

Young (1925) compared 16 hypnotizable subjects with six nonhypnotizables on 15 physical and mental functions, one of which was recalling nonsense syllables. He found no significant gains on the latter, but progressive inability as the subjects entered somnambulism. Stalnaker and Riddle (1932) used 18 persons of deep trance capability as own controls on a task to remember meaningful material learned a year before. Under hypnosis alone, subjects remembered far more material, made up less material that they could not recall, and had fewer recall errors than when trying to recall the same in a waking condition. Design flaws included insufficient numbers and own control procedures. White, Fox and Harris (1940) had eight subjects of at least trance-able depth memorize nonsense material, poetry, and watch films in a waking state. Then, under hypnosis, they recalled 53% more meaningful material and 83% of the films, but did not improve significantly on the nonsense material. Again, the problems were with insufficient numbers and absence of control for motivational level (own control design).

Shubat (1969) had 48 subjects of hypnotic ability learn meaningful material 24 hours before, then had them recall it both under hypnosis with recall suggestions and in the waking state alone. She found that hypnosis made little difference. Major gains in remembering were due to

the close personal relationship which certain of the students had with the experimenter. Cohen (1972) presented a psychological case to 72 subjects three weeks before the experiment. In one of the eight testing conditions, subjects were given hypnotic regression suggestions. Even though they felt themselves to be back to the day of the case presentation, they showed no significant gains in memory. Cooper and London (1973) had high and low hypnotizable subjects read meaningful material a week before the experiment. They found no significant results for working under hypnosis with memory suggestions as compared to waking suggestions.

Studies on Learning and Recall

Using Hypnosis Only.

Shulman (1962) asked whether learning and recalling nonsense lists and two original poems under hypnosis without suggestions would improve performance. Using 60 subjects of high, medium, and low susceptibility, he found no significant improvements in any group on either of the tasks.

Using Hypnosis with Suggestions.

The first group of studies concerns learning done while under hypnosis. Gray (1934) tested six subjects matched on college entrance scores, hypnotizability, and difficulty with spelling. One day he put them into deep hypnosis, taught the words, and told them that they would always spell them that way. The

next day he taught them an equally difficult list in the waking state without suggestions. Overall gains were not significant, but hypnosis did help some of the subjects, while others, due to their particular learning problems, were not helped that much. He concluded that hypnosis was not warranted to correct spelling.

Sears (1955) used two groups of 25 matched on IQ and trance depth. He taught them Morse Code in three 10-hour sessions, giving the experimental group hypnosis with suggestions for good learning and recall; learning was done under hypnosis. The experimentals showed significant gains at 7-1/2, 10, 12-1/2, and 15 words per minute. The design flaw was mixing hypnotic effects with suggestion effects.

Salzberg (1960) assigned 35 subjects to four groups (hypnosis with suggestions for the learning; post-hypnotic suggestion; waking suggestions; control). He tested them on learning tasks of simple, medium, and complex difficulty. He found significant gains for the two hypnotic groups. Further, the gains on the medium and complex tasks seemed to argue against Eysenck's idea that learning decreases as tasks become complex. Unfortunately, he assigned no high subjects to the control group, thus confounding suggestibility with hypnosis and/or suggestions.

Anavi (1963) randomly assigned 16 hypnotic subjects matched on WAIS Information, Similarities, and Vocabulary scores, to four conditions. He asked whether hypnotic

presentation and recall of cognitively dissonant sentences would improve recall of those sentences. Twenty of 40 sentences had endings which did not follow from the beginning. He found significant gains for those sentences under hypnotic presentation and recall, but not for any other condition. All groups did equally well on the cognitively consonant sentences.

The second group of studies deals with learning after post-hypnotic suggestions. Hammer (1954) gave nine subjects acting as own controls 25 tasks related to school performance. They were run through the tasks four times in counterbalanced order, twice under normal waking conditions and twice under waking hypnosis with post-hypnotic suggestions for improved performance. He found significant improvement on most of the tasks for the hypnotic suggestions condition. Two errors marred the study: the own control format and the confusion of hypnosis and suggestions.

Three studies using hypnotic suggestions given either before or during sleep have been culled from Russian journals. Kulikhov (1964), Zavalova, Zukhar and Petrov (1966), and Zukhar, Kaplan, Maksinov and Pushkina (1966) utilized this teaching technique (called hypnopedia) to teach and recall meaningful material such as foreign language words and stories. Subjects were given suggestions for learning and retention either before or during sleep. Learning took place during sleep. The next morning they

were asked to recall the material in the waking condition. They reported significant gains for these groups as compared to controls. The findings must be looked at with caution because the journals did not give full information about crucial aspects of the experiments, for example, the exact instructions given to controls.

Cooper and Hoskovec (1972) tried something similar. After an adaptation night, 11 high suggestible subjects were hypnotized before sleep on the second night, and given suggestions to learn and remember 10 Russian-English pairs to be presented during sleep. Learning was done during Stage 1 REM sleep monitored encephalographically and electromyographically. When learning similar material in the waking condition, subjects retained 90%, whereas the sleep learning showed a 30% retention. They concluded that sleep learning is possible but not practical.

Parker and Barber (1964) assigned 30 high suggestibles to three groups (hypnosis with motivating suggestions: waking suggestions, and controls) and 10 low suggestible subjects to waking suggestions. Testing them on the Digit Symbol, Memory for Words, and an abstract reasoning task, they found that the three experimental groups outdid the controls only on Digit Symbol, but did not differ among themselves on that task. They concluded that suggestions given to hypnotic or waking subjects of either high or low suggestibility improves performance on simple tasks, but maybe not on more complex tasks.

Donk, Vingoe, Hall and Doty (1970) randomly assigned 32 volunteers from a mental health class to four groups (alert trance with suggestions for increased speed and comprehension; traditional induction with the same suggestions; waking suggestions; and controls). They tested them on reading material. They found that the alert hypnosis and waking suggestions groups improved significantly on speed, but without affecting their comprehension in either direction. The traditional group also improved nonsignificantly on speed.

Sakata and Anderson (1970) assigned 45 subjects of high suggestibility to three groups (hypnosis with suggestions for good performance; hypnosis only; and waking suggestions) and tested them on the Digit Symbol and Peterson's Rational Learning Test. The latter requires associating the numbers 1 to 10 with the first 10 letters of the alphabet. This is done by a series of guesses, the range of which can be greatly limited by a rational organization of the situation. Results showed the post-hypnotic subjects significantly improved over waking suggestion subjects on time, total errors, and perseverative errors. The hypnosis only group did the same on total errors and perseverative errors. Only the post-hypnotic group failed to improve on the Digit Symbol. The authors concluded that post-hypnotic subjects changed in the expected direction over waking suggestions on emotional control, speed, accuracy

and increased retention. Since performance was asked shortly after dehypnotization, they felt that post-hypnotic suggestions were not more effective than hypnotic induction alone. Possibly the general relaxation caused by hypnosis enhanced task performance. It was also possible that the post-hypnotic subjects failed to improve Digit Symbol because certain of the subjects became overly relaxed and confident in their test-taking attitude and perhaps succumbed to a distorted impression that they were performing efficiently upon responding to the post-hypnotic suggestions for enhanced ability.

Swiercinsky and Coe (1970) matched subjects for suggestibility and assigned them to three groups (group induction under which reading material was presented, followed by suggestions for improved memory; waking suggestions to imagine the effects of the task and to do their best to remember, followed by the material; and waking controls). Tested immediately after, the groups showed no significant differences.

The same authors (1971) randomly assigned high and low suggestible subjects to three similar groups, except that individual induction was used. Again, no group reached significant memory improvement.

Gilbert and Barber (1972) had 120 nurses take part in a study with a 3 X 2 X 2 design which tested hypnotic induction (none, minimal, extended), high vs. low suggestibility, and

suggestions (given, not given). They were asked to do the Digit Symbol, French's Number Facility Task, Salzberg's Abstract Reasoning Task, and French's Associative Memory Task. On the Digit Symbol there was a trend ($p < .11$) for the extended induction to produce gains. On Number Facility, high suggestibles with motivating instructions improved over highs and lows without suggestions ($p < .05$). There were no significant gains for any group on Abstract Reasoning or Associative Memory.

As can be seen, the results of the studies are not all that clear. However, a few things emerge. Most studies indicate that positive motivating suggestions and suggestibility can produce equal results as hypnosis per se and hypnosis with the same suggestions. Four well controlled studies are exceptions. Cooper and Hoskovec (1972) had 30% retention of sleep-learned material; Donk, Vingoe, Hall and Doty (1970) improved reading speed without affecting comprehension; Sakata and Anderson (1970) improved rational learning; and Anavi (1963) improved recall of dissonant material. Why hypnosis should make the difference in these cases remains to be investigated. Perhaps it is a combination of suggestion, suggestibility, and deep relaxation. There is a hint of this interaction in Sakata and Anderson's finding that their hypnosis and suggestions group failed to improve on Digit Symbol, probably from overconfidence in the suggestions due to deep relaxation. Talone, Steadman and Diamond (1973) found

that suggestibility could be elevated by simply using a period of restful silence or music before giving suggestions. Relaxed confidence and positive motivation in a person ready to get involved in the task (suggestibility) should produce good learning and retention. It is possible, however, that there are other factors involved in hypnosis above and beyond these variables. Given these special hypnotic factors, there may be an interaction that produces specific hypnotic results.

Barber and De Moor (1972) list some induction variables which may be at work in the hypnotic situation. Simply defining the situation as hypnosis raises test responsiveness in most modern subjects. Another powerful factor is securing the cooperation of the subjects. Vivid imagination with the eyes closed induces the subject to get more involved in the task. Coupling the suggestions with naturally occurring events and preventing or reinterpreting the failure of suggestions lead the subject to concentrate on what the hypnotist wants him to do and to suppose that he truly is in a situation where he can go beyond normal capacities. All of these can raise the critical mediating variables of positive attitudes, motivations, and expectancies.

The importance of motivation to explain hypnosis is so central in Barber's mind that he developed a testing

routine that incorporates a special control called Task Motivation Instructions. Barber feels that with sufficient waking motivation a subject can "get himself up" for the required task and do as well as the subject given hypnotic suggestions. In his experiments usually at least one waking group is given an extended and emphatic appeal to involve themselves and to give their very best. By using a Task Motivation group, Barber obtains an equitable control on the motivation factor.

Hypnosis and Change of Ethnic Attitudes

The present experiment compared five groups of high hypnotizable subjects on their recall of a paired associate Italian-English vocabulary list after these groups had undergone either hypnotic suggestions or waking suggestions. In essence, it employed two types of hypnotic suggestions (to have positive attitudes toward Italian culture and/or to want to learn the Italian words) and compared them to strong task motivation instructions. Because it involved ethnic attitude suggestions given under hypnosis as a way to increase learning, the review now surveys the success of hypnosis as a way to change ethnic attitudes. Surprisingly, there are very few attempts to do so reported in the literature.

Attitudes involve three components: the beliefs one has about an object; one's positive or negative evaluations

of the object; and the pro or con action tendencies one has as a result of one's beliefs and evaluations. In order to change attitudes, hypnotic suggestions have been given to modify either the cognitive or the evaluative components of the subject's stated attitude. Two experiments (Glasner, 1953; Stachowiak & Moss, 1965) suggested new reasons why the subject should re-evaluate certain ethnic groups. Another experiment (Rosenberg, 1960) simply and directly told the subject to feel differently about the groups.

Glasner (1953) tested the effectiveness of single and repeated hypnotic suggestions in producing ethnic attitude change as compared to waking suggestions and no suggestions. In his first experiment, he pretested 160 undergraduates of both sexes on their attitudes toward Negroes, Chinese, and Hindus. Later, he hypnotized 29 of the subjects to light hypnosis and suggested that students like themselves are much more tolerant of such groups than other people and that they should show their true feelings on the retest. While they were instructed to give their real feelings, they were also told that in case of doubt they were to prefer the underdog. Two weeks later, all 160 subjects were retested. Results showed that both hypnotic and waking suggestions subjects reported significantly more favorable attitudes toward the ethnic groups than the control subjects.

In his second experiment, Glasner tested the effect of repeated hypnotic and waking suggestions. Fifty-eight undergraduates of both sexes were pretested on attitudes not only toward Negroes, Chinese, and Hindus, but also toward Frenchmen and Mexicans. Twenty-seven subjects were later hypnotized to light depth and given the positive suggestions from the first experiment about Negroes, Chinese, and Hindus, while 14 other subjects simply observed this procedure. Seventeen others served as the control group and were re-tested five weeks later. Over the intervening five weeks, the hypnosis and waking subjects were given hypnotic and waking suggestions, respectively, as to why they should view Frenchmen unfavorably and Mexicans favorably. In each of the eight sessions they were tested on their attitudes toward the two nationalities. They were not given further suggestions about Negroes, Chinese, and Hindus. This procedure allowed a comparison of the effectiveness of a single suggestion as opposed to repeated suggestions. Glasner found significantly favorable attitude changes only within the hypnosis group. Most of the upward shift occurred in the early hypnotic sessions. As far as durability of attitude change was concerned, Glasner found that the single suggestion regarding the Negroes, Chinese, and Hindus lost some of its effectiveness over the five weeks. However, the repeated hypnotic suggestions maintained the durability of

attitude change. In terms of the amount of attitude change, the repeated suggestions were not significantly more effective than the single suggestion. In light of both experiments, Glasner concluded that single hypnotic and waking suggestions can produce significant change toward ethnic groups. However, repeated hypnotic suggestions produce more enduring change than single or repeated waking suggestions. Furthermore, the changes seemed to be in basic attitudes rather than changes in the responses to a particular test.

Stachowiak and Moss (1965) asked whether hypnotic suggestions could influence the subjects' attitudes over and above the experimenter demands as noted by Orne. They hypothesized that if hypnosis adds more, then attitude shifts toward Negroes should be more extreme than those produced by waking suggestions. They cast the hypothesis in terms of Osgoode's congruity principle. It states that whenever two differently polarized objects of judgment are related by an associative assertion, the less polarized object (a slightly favorable concept--the Negro) becomes less so by being favored more, while the more polarized object (a quite positive object--the experimenter) becomes less favorably prized. Accordingly, hypnotic subjects should initially view the experimenter more favorably than waking subjects and thus create more pressure to elevate attitudes favorable to Negroes following hypnotic suggestions. Forty male

university students of varying hypnotic susceptibility were randomly assigned to hypnosis and waking suggestions groups. All were pretested by semantic differential scales and Bogardus social distance scales on their attitudes toward Negroes, the experimenter, and four dummy concepts. Then the experimenter gave both groups an 11-minute communication which attacked racial prejudice. The experimental subjects were given this suggestion under hypnosis, while the others received it in the waking state. Compared to waking subjects, the hypnotic subjects were immediately more favorable toward Negroes and, surprisingly, less unfavorable toward the experimenter on the semantic differential scale, but not on the Bogardus scale. Fifteen to 18 days later, they filled out the same scales to test the durability of change. Results remained consistent with earlier testing. Thus, attitude change was durable in the predicted direction. And compared to the waking group, the hypnosis group was more favorably inclined toward the Negro and the experimenter in both magnitude and durability of attitude change. Finally, durability of positive change toward the Negro was significantly correlated with susceptibility to hypnosis. The results were interpreted as showing that ethnic attitudes can be altered by hypnotic suggestion in magnitude and durability above the experimenter demands referred to by Orne.

Rosenberg (1960) examined the effect of hypnotic suggestions in changing affective evaluations of an attitude object, thus altering the attitude itself. From a pool of 32 subjects of high susceptibility, Rosenberg trained 11 to amnesia for hypnotic suggestions. These subjects became the experimental group and the others served as waking controls. All subjects were pretested on how strongly they felt about 31 values and how they saw various attitude objects (some of which were ethnic groups) promoting or blocking attainment of the 31 values. After determining the subject's high and low interest in the values, Rosenberg selected a high interest value object and a low interest value object as the focus of attitude change. Rosenberg hypnotized the experimental subjects to the point where they could have amnesia for suggestions and told them simply and directly to reverse their feelings toward the ethnic group. He gave the same suggestions on the waking level to the control subjects. For example, if the pretest showed a subject to feel quite negatively about Negroes moving into one's neighborhood, Rosenberg told him to feel quite positively about it. However, no subject was told to change his thinking as to how the objects would attain or block the 31 values; each received a straightforward suggestion to feel differently. Results showed that only hypnosis subjects produced cognitive change about high ($p < .01$) and low

interest objects ($p < .0002$), but not about objects for which there were no suggestions. All subjects were reported affect reversal, but only hypnotic subjects changed their cognitive structures. That is, they increased the importance of values associated with the attitude object and saw the attitude object either more strongly enhancing or blocking those values. Further, they saw other values being promoted or blocked by the object, as the suggestions dictated. Until the amnesia for the suggestions was lifted two weeks later, they continued to argue strongly on the conscious level about how the object would now help or hinder the attainment of certain values.

To summarize, hypnotic suggestions have been shown to be effective for changing attitudes, either by suggesting changes in the cognitive component (Glasner, 1953; Stachowiak & Moss, 1965) or by reversing the affective component (Rosenberg, 1960). Single suggestions can be as effective as repeated hypnotic suggestions as far as magnitude of change is concerned, but repeated hypnotic suggestions promote more durability of change (Glasner, 1953). There is a positive correlation between depth of hypnosis and attitude change (Stachowiak & Moss, 1965); extreme feelings can be reversed under amnesia depth (Rosenberg, 1960); the hypnotic effect is more than experimenter demands (Stachowiak & Moss, 1965); and the change seems to be in basic components of attitudes (Glasner, 1953; Rosenberg, 1960).

Because the experiment is about to be described, some findings from the literature pertinent to the design should be recalled. Generally speaking well designed experiments on hypnotic learning have concluded that waking suggestions are equally effective as hypnosis per se and hypnosis with suggestions to raise learning. Barber's experiments routinely feature a special control group (Task Motivation Instructions) to ensure that waking suggestions are at their strongest in order to guarantee methodological equality between hypnotic and waking suggestions. Thus, a TMI group was added in the present experiment.

The literature cautions the experimenter to prevent a confusion between hypnosis and/or suggestions with suggestibility itself. This mistake can result either by having high suggestible subjects in experimental conditions and not in control groups or, as Barber has pointed out, by raising suggestibility by merely saying that the experiment involves hypnosis. To counteract this mistake, only high suggestible subjects were used in all groups. Furthermore, it was felt that the TMI group should be sufficiently motivated as a result of the instructions so as to counteract the raised suggestibility of those subjects in the hypnosis groups.

The purpose of the present experiment was to study the extent to which subjects scoring high on a suggestibility

scale can learn an Italian-English vocabulary list more easily by inducing them to have more favorable attitudes toward the European Italian linguistic community and toward learning the Italian words. Stated more fully, in addition to seeing whether hypnosis can be a useful vehicle in changing ethnic and learning attitudes, the experiment was designed to see whether such induced attitude changes would have a direct influence on learning a vocabulary list when these hypnotic suggestions were compared to emphatic task motivation instructions and to control suggestions.

Hypotheses

The first hypothesis predicted that subjects undergoing hypnosis and receiving suggestions to have positive attitudes toward the linguistic group would change their attitude toward that community following the hypnotic manipulation.

The second hypothesis of the experiment was to the extent that subjects could be induced to change their attitudes toward the linguistic community and/or toward learning the Italian words, this would facilitate their overall vocabulary learning as measured by their ability to recall Paired associate words.

A third hypothesis predicted that HAL subjects given hypnosis and positive attitudes (A) plus "a desire to learn"

suggestion (L) would perform better on the overall paired associate recall task, compared with subjects in the HA group and subjects in the HL group.

A fourth hypothesis predicted that to the extent that subjects were given Task Motivation Instructions their overall vocabulary learning would be facilitated as compared to control subjects not given these instructions.

The fifth hypothesis predicted that groups given hypnotic suggestions for attitude change and/or for learning the words would show greater motivation to learn new words as measured by the count of new words learned per trial.

CHAPTER II

METHOD

The present experiment involved having subjects learn a vocabulary list of English-stimulus Italian-response paired associates presented on a memory drum following three different hypnotic treatment manipulations and two control manipulations. The hypnosis manipulations involved having subjects in the HAL and HA groups undergo a 15-minute taped hypnotic induction followed by inducing them over a period of 6 minutes to imagine pleasant scenes highlighting the positive attributes of Italy, its people, and its culture (Appendix 10). The HAL group then heard 1 minute and 40 seconds of suggestions emphasizing that they would want to learn Italian words because of their pleasant experiences of Italy. The HL group was given only the learn-the-words suggestions after the hypnotic induction (Appendix 11). A fourth group (TMI) was given 2 minutes and 40 seconds of Task Motivation Instructions, as outlined by Barber (1969), to ensure that subjects were motivated to comply with the demands of the experiment and to do the best they could (Appendix 12). A final group served as an untreated control group in that they were given only 22 seconds of the instructions, "Do your best on this portion of the experiment," when they came to learn the words (Appendix 13).

Subjects

Fifty undergraduate psychology students at the University of Ottawa, of whom 28 were males and 22 females, volunteered for the experiment. Their ages ranged from 18 to 27 years. They were taken from a pool of 70 students who were found to be highly hypnotizable on the basis of their scoring 7 or above on 9 items from the Harvard Group Scale of Susceptibility: Form A (Shor & Orne, 1962). This pool was gathered by administering the scale after a taped induction in several undergraduate classes. After randomly assigning a potential subject by order of appearance to one of the five conditions, the experimenter phoned to ask the subject to volunteer (Appendix 7). Those in the three hypnosis groups were told that the experiment was to study the relationship between hypnosis and learning. Those in the TMI group were told that it was to examine the relationship between motivation and learning. Subjects in the control group were simply told that it was a learning experiment. The volunteers were unpaid, but were promised a written report on the findings of the experiment.

Procedure

Testing on 43 of the subjects was done individually by the experimenter. Unforeseen circumstances necessitated

that three co-workers individually test the other seven subjects.[1] All work was done in a single room in a university psychology laboratory. It contained two wooden chairs and a comfortable cushioned chair, a tape-recorder for all instructions, and a memory drum.

All subjects were greeted by the experimenter and engaged in a few minutes conversation about their school career and general interests. Then, when each felt ready, the experiment began. All instructions were given by tape.

Every subject filled out an Italian-English pretest vocabulary list to assess pre-manipulation Italian vocabulary (Appendix 2). This list served as a recognition-learning test before and after the experiment proper. Next, each subject was given a 33-item Attitudes Toward European Italians Survey (Appendix 3).

After completing the questionnaires, subjects in the hypnosis groups were seated in the comfortable chair, which faced a blank wall a few feet away, and given the taped Harvard hypnotic induction. This portion of the tape lasted 15 minutes. The next 6 minutes of the tapes for the HAL and HA groups suggested that they had been on an extended trip to Italy (Appendix 10). It contained warm, pleasant scenes which evoked Italy's rich cultural

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1 By use of *t* tests for matched groups, it was shown that there was no experimenter bias at work in the experiment.

past and love of life. It was also suggested that they had stayed with an Italian family and had become very close to them. For the subjects in the HAL group, the tape concluded with 1 minute and 40 seconds of suggestions indicating that they wished to learn Italian words as best they could. Thus, the HAL group had positive attitude (A) and "learn the words" (L) suggestions. The HA group, however, did not hear the (L) suggestions. The HL group skipped the (A) suggestions and moved directly into 1:50 minutes of (L) suggestions (Appendix 11). Then all subjects in the hypnosis groups were "awakened."

At this point, all subjects except the Control subjects received the Attitudes Toward Italians questionnaire for the second time. This was to check for any hypnotically induced changes. The control group was not given the questionnaire here because they had completed it a few minutes before. Members of the TMI and control groups did not receive an induction or any of these suggestions. The TMI group heard an emphatic appeal for them to do their very best to learn and recall the words and that the entire experiment depended on their cooperation in this respect (Appendix 12). This lasted for 2 minutes and 40 seconds. The control group (Appendix 13) was simply told to do their best on the learning portion of the experiment (22 seconds).

The recall learning portion of the experiment was next. Sixteen English-Italian word pairs were taken from

the 50-item pretest. Subjects were told that each English word and its Italian translation would be presented for 8 seconds on the memory drum. They were to say the Italian word aloud and to remember how to spell it. After all pairs had been presented, they were told that the English words alone would appear for 16 seconds, and that they were then to write the Italian translation. The list was presented in five different random orders in counterbalanced design to each group. Another five random orders presented the English words alone for the written recall of the Italian translations.

To be counted as a correct match, the Italian word had to be paired to the proper English stem. Second, the spelling of the Italian word had to bear a substantial resemblance to its true spelling. That is, in a 6-letter Italian word, four letters had to be in their correct places; in a 7-letter word, five; in an 8, six; and so on. A subject's score on any trial was obtained by adding up the number of correct matches.

When the learning portion of the experiment was over, a "demands-for-honesty" questionnaire was given. It asked subjects to be candid about how they really felt toward Italians, whether they thought they had been hypnotized, and whether they had used any strategies for learning the words. Following this, the Attitudes Toward Italians was administered

for the third time to the hypnosis and TMI groups and for the second time to the control group. This was to see if attitudes had been artificially inflated by the demand characteristics of the hypnosis test situation. Finally, the 50-item Italian word list was given again to see if any groups differed significantly in recognition learning at the end of the experiment.

Dependent Measures

Italian-English Recognition List. The list consisted of 50 Italian words, each having five possible English translations. Sixteen of the words were those that were to be learned on the memory drum. The list was adapted in two ways from the Cooperative French Test: Elementary Form Q (Greenberg & Spaulding, 1940). First, Italian equivalents of the French words were substituted. Secondly, 16 items of the Cooperative French Test were replaced by the 16 words the subject was to learn. More will be said of these words below.

Attitudes Toward European Italians Survey. This survey (Appendix 3) is an adaptation of an attitude scale composed by Gardner, Smythe, Kirby, and Bramwell (1974) to measure reactions toward French-speaking peoples.[2]

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2 Test-retest coefficients and inter-item correlations are found in Appendix 15.

The word Italian was inserted wherever the word French appeared. In addition, other statements were introduced as well. The present survey consists of 33 statements and asked the subject to circle a response on a 7-point scale running from 1 (very unfavorable) through 4 (neutral) to 7 (very favorable). A subject's attitude score was obtained by adding up the value of the answers circled. The first 30 items measured attitudes toward the Italian culture and thus formed an Italian Culture Attitudes Scale (ICAS). Questions 31 and 32 were Bogardus Social Distance Scale items (Bogardus, 1925). Question 31 measured the subject's willingness to have an Italian-speaking (a) neighbor, (b) roommate, and (c) spouse. Question 32 measured the desire to study in (a) England, (b) the United States, (c) Italy, and (d) France, if given the opportunity to study abroad.

English-Italian Recall List. As was mentioned above, 16 words in the Cooperative French Test: Elementary Form Q were replaced by a special list of English-Italian paired associates which then comprised a vocabulary list (Appendix 5). This replacement was made to take advantage of paired associate word lists matched on variables such as the words' imagery value, meaningfulness, and frequency of appearance. This permitted a check on the learning difficulty of the word pairs to be learned and recalled.

It was decided to make all words difficult to learn in order to avoid a possible ceiling effect, although 8 of the 16 were somewhat easier than the others. There was another accommodation made. The paired associate lists in the literature are not vocabulary lists; rather, they are matches of English words whose stem and response are of known values. It was decided that the experiment should test vocabulary acquisitions. Therefore, 16 English words were taken from lists cited in the literature and their Italian translation served as the response.

A survey of literature on English paired associates pertinent to the selection of the 16 words follows. Testing stimulus words, Saltz (1967) and Modigliani and Saltz (1969) found that words with high objective Thorndike-Lorge (T-L) frequency with associative meaningfulness (m) held constant, interfered with learning of the stimulus word. Saltz explained that a high frequency word is used more and is strongly attached to the responses associated with it and that these S-R bonds interfered with new learning. Then, testing response words, Saltz and Modigliani (1967) discovered that if the response word was of either low meaning or low T-L frequency, raising m (or T-L as the case demanded) increased the learning of the response word. To keep m low prevents differentiation of that word from other possible responses. To keep T-L low cuts down the availability of

that word to come to mind as a response. In either case, learning is made more difficult.

Another variable of the words is their concreteness and imagery. In general, the more concrete the word, the better it is learned as either stimulus or response. Paivio, Smythe and Yuille (1968) compared the learning contributions of meaningfulness and imagery. In one part of their study they constructed two lists of paired-associate words. The Imagery List (I) had 32 nouns equated on m, with 16 high on imagery and 16 low on imagery. The Meaning List (M) had 32 nouns equated on imagery, with 16 high in m, and 16 low in m. For List I, with m controlled, analysis showed a highly significant effect of stimulus imagery, and a smaller but also significant effect of response imagery. Analysis of the M list revealed a significant negative main effect of the response m. That is, low m-low m pairs were learned significantly better than either high m-low m or low m-high m pairs.

Objective frequency was measured by using the Thorndike-Lorge lists (1944) and those of Kucera and Francis (1967). Associative meaningfulness was measured against word lists of Noble and Parker (1960) and Silverstein and Dienstbier (1968). Imagery was comapred to the lists of Paivio, Smythe and Madigan (1968).

To sum up, two kinds of words were in the list. The eight harder words had an imagery value of 2.92, a meaningfulness value of 4.18, and a T-L frequency count of 15. The eight easier words had an imagery value of 2.99, m of 5.82, and T-L of 40.25. t tests showed that neither the imagery nor T-L was significantly different between the lists. Words were relatively hard (imagery and T-L held constant), but some were harder than others (i.e., having lower m responses).

The 16-word vocabulary list monitored recall learning in two ways. First, words learned per trial measured overall vocabulary learning. Second, the list measured motivation to acquire new vocabulary by counting a correct match only once; that is, the first time it appeared in a given subject's five learning trials. Counted only once, it was considered a new word. This indicated how early in the trials a subject had learned the vocabulary words.

Demands-for-Honesty Questionnaire. Orne (1959) has shown that subjects in an experiment may pick up subtle cues as to what the experimenter wants to prove and then complies with these "demand characteristics." Since this influence could be at work among the hypnosis groups on the second attitude assessment, it was decided to include a Demands-for-Honesty statement (Appendix 4) just before the third attitudes assessment. The statement asked the subject to be as honest as possible about how hypnotized he felt, how

genuine he felt his attitudes to be on the second assessment, and how much he experienced the scenes described under hypnosis. The results of his answers are listed in the raw scores (Appendix 1). By comparing attitudes on the second and final assessments, one can see how much the "demand characteristic" might be at work.

CHAPTER III

RESULTS

The results can be summarized under three headings: attitude change, word learning, and possible relationships between attitudes, learning, and treatment manipulations.

Attitude Change

There were three assessments of attitudes: pretest, post-hypnotic manipulation, and postexperimental. There was an exception to this: the control group did not have the second assessment because they had completed the first only moments earlier. A subject's total score on any assessment was given by adding up the point values of the answers he circled on the 7-point scale.[1]

A 4(Groups) X 3(Assessment Periods) repeated measures analysis of variance of the ICAS scale shows significant change in scores across trials ($F(2,72) = 27.62$, $p < .001$) and an interaction ($F(6,72) = 6.13$, $p < .0001$) between groups

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1 All tests in the experiment met their statistical assumptions, e.g., homogeneity, randomization, etc. The only exception was the violation of homogeneity of the recall learning two-way analysis of variance. Greenhouse-Geisser values will be shown below for this exception to indicate that the analysis can be considered valid (Tables 1 and 2).

Table 1

Box's Chi Square Tests for Equality and Symmetry of Variance-Covariance Matrices of Two Kinds of Recall Learning

Equality of Matrices

	Chi Squares in Normal Unit Deviation	df	p
Overall Recall	1.79	60	.05
New Words	-.86	60	ns

Symmetry of Matrices

	Chi Squares	df	p
Overall Recall	12.19	13	ns
New Words	13.28	13	ns

Table 2

Comparison of Results for the Overall Recall Learning Analysis of Variance by Conventional and Conservative Tests

	Conventional		Conservative	
	F	*p*	*F*	*p*
Overall recall				
Groups (A)	2.53	ns	4.84	ns
Trials (B)	257.52	.001	4.08	.001
AB	1.20	ns	2.59	ns

and assessments (Table 3). One-way analyses of variance of groups on each assessment period revealed no significant differences between groups. However, a Tukey comparison of means on the post-hypnotic manipulation assessment showed that the HAL group had significantly more favorable ICAS attitudes than the TMI subjects. Thus, one of the two hypnosis groups which received suggestions favorable to Italian culture responded with significantly more favorable attitudes than the TMI group on this assessment. The other hypnosis group (HA) started from a lower pretest base than TMI subjects and, although their attitudes shifted more favorably by an average of 22.9 points, they were not significantly more favorable in attitude than the TMI subjects. Because the control subjects started from such a high pretest level, no hypnosis group was significantly more favorable than control subjects on this assessment.

Since only the hypnosis groups received suggestions involving attitudes toward Italian culture and/or the desire to learn the Italian words, their scores on the ICAS items were studied by one-way repeated measures analyses of variance in order to locate significant shifts of attitudes. Significant changes in a favorable direction were found for the HAL group ($F(2,18) = 16.42$, $p < .001$) and for the HA group ($F(2,18) = 12.69$, $p < .001$). Table 4 summarizes these data. Tukey tests revealed that HAL attitudes moved upward

Table 3

Two-way Repeated Measures Analysis of Variance of HAL, HA, HL, and TMI Groups over Three Assessments of Italian Culture Attitudes Scale

Source	SS	df	MS	F	p
Between subjects					
Groups (A)	5116.83	3	1705.61	1.27	n.s.
Subj. within groups	48167.97	36	1337.99		
Within groups					
Trials (B)	3059.32	2	1529.66	27.62	.0001
AB	2037.55	6	339.59	6.13	.001
B X Subj. within groups	3987.13	72	55.38		
Total	62368.80	119			

Table 4

One-way Repeated Measures Analysis of Variance of HAL and HA Groups over Three Assessments of Italian Culture Attitudes Scale

Source	SS	df	MS	F	p
HAL group					
Within subjects	2461.40	2	1230.7	16.42	.001
Residual	1348.60	18	74.9		
Total	3810.00	20			
HA group					
Within subjects	2468.80	2	1232.4	12.69	.001
Residual	1748.50	18	97.1		
Total	4213.30	20			

to significance from pretest to post-hypnotic manipulation assessment by an average of 20.9 points and maintained that significant difference between pretest and posttest assessments by an average of 16.9 points. Tukey tests showed that the HA subjects' attitudes shifted significantly upward by an average of 22.2 points from pretest to post-hypnotic manipulation assessment, but then lost an average of 10.8 points by the posttest assessment. Therefore, there was no significant difference from pretest to post-test assessments. A one-way analysis of variance of change scores for groups across assessments (Table 5) showed significant differences between groups ($\underline{F}(4,45) = 5.16$, $\underline{p} < .001$). Tukey tests indicated that the change scores pretest to posttest of the HAL group were significantly higher than the HL, TMI, and control subjects.

To summarize, an examination of raw scores for attitudes toward Italian culture showed that the two hypnosis groups receiving suggestions favorable to Italian culture reported significantly more positive attitudes from pretest to post-hypnotic manipulation assessment. On this assessment, the HAL group was significantly higher than the TMI group. The reason why neither the HAL nor HA group had significantly higher attitudes than the control group was the high level of favorable attitudes which control subjects reported on the pretest assessment. After the

Table 5

One-way Analysis of Variance of Change Scores of Five Groups Pretest to Posttest Assessments on Italian Culture Attitudes Scale

Source	SS	df	MS	F	p
Between	2122.08	4	530.52	5.16	.001
Within	4624.50	45	102.77		
Total	6746.50	49			

demands for honesty, the HAL subjects lost an average of 4.0 points, but maintained a significant upward change in attitudes from pretest to posttest assessments. By posttest the HA subjects reported attitudes an average of 10.8 points lower than their post-hypnotic manipulation assessment. Thus, their pretest-posttest change was not maintained at a significant level. An analysis of change scores across groups showed that the HAL subjects had significantly more favorable attitude change than the HL, TMI, and control subjects from pretest to posttest.

Questions 31 and 32 were examined by 4 X 3 repeated measures analyses of variance, a one-way analysis of variance (groups on individual assessment periods), and a one-way repeated measures analysis of variance (each group across its own assessments). As Table 6 shows, repeated measures analysis of variance for the HA group on 31a (willingness to have an Italian-speaking neighbor) showed a significant change ($F(2,18) = 3.86$, $p < .05$). Tukey tests showed that the HA subjects became significantly more favorable between pretest and post-hypnotic manipulation assessment, then reverted back to their pretest level on the posttest assessment, again at a significant level.

In terms of an analysis of variance, the factor associated with the assessment period on the question concerning willingness to have an Italian roommate (31b) was

Table 6

One-way Repeated Measures Analysis of Variance of the HA Group over Three Assessments on Question 31a

Source	SS	df	MS	F	p
Within subjects	0.6	2	.30	3.86	.05
Residual	1.4	18	.08		
Total	2.0	20			

significant ($F(2,72) = 5.75$, $p < .001$). The results appear in Table 7. However, no post hoc procedures proved significant in locating differences between groups on assessments or within any group over assessments.

Analysis of the question assessing the desire to study in Italy (32c) showed a significant interaction between groups and assessment periods factors ($F(2,72) = 2.56$, $p < .05$). A one-way repeated measures analysis of variance of the HAL group over its assessments showed significant differences ($F(2,20) = 7.36$, $p < .001$). Results are shown in Tables 8 and 9, respectively. Tukey tests indicated that the HAL subjects reported attitudes significantly more favorable between pretest and post-hypnotic manipulation and maintained that significant favorable change between pretest and posttest assessments.

Thus, there were parallels in the way that the hypnotic suggestions affected HAL and HA answers on the ICAS scales measuring feelings about Italian culture and the Bogardus Social Distance scales measuring willingness to interact with Italian-speaking people and to study in Italy. The HAL subjects indicated an increased desire to study in Italy that was maintained in the face of demands for honesty. Their attitudes on the ICAS scales showed the same durability. Immediately following hypnotic suggestions, HA subjects reported a significantly increased

Table 7

Two-way Repeated Measures Analysis of Variance of HAL, HA, HL and TMI Groups over Three Assessments on Question 31b

Source	SS	df	MS	F	p
Between subjects					
Groups (A)	11.82	3	3.94	.55	ns
Subj. within groups	256.63	36	7.13		
Within subjects					
Trials (B)	2.15	2	1.08	5.75	.001
AB	1.05	6	.17	.93	ns
B X subj. within groups	13.47	72	.19		
Total	285.12	119			

Table 8

Two-way Repeated Measures Analysis of Variance of HAL, HA, HL and TMI Groups over Three Assessments on Question 32c

Source	SS	df	MS	F	p
Between subjects					
Groups (A)	35.93	3	11.98	1.65	ns
Subj. within groups	261.93	36	7.23		
Within subjects					
Trials (B)	.82	2	.41	2.71	ns
AB	2.32	6	.39	2.56	.05
B X subj. within groups	10.87	72	.15		
Total	311.87	119			

Table 9

One-way Repeated Measures Analysis of Variance of the HAL Group over Three Assessments on Question 32c

Source	SS	df	MS	F	p
Within	2.40	2	1.20	7.36	.001
Residual	2.93	18	.16		
Total	5.33	20			

willingness to have an Italian-speaking neighbor, but after demands for honesty were made, they reported the same level of willingness as on their pretest assessment. This paralleled their answers on the ICAS scale.

Italian Word Learning

There were two basic measures of knowledge of Italian words. One was a recognition memory assessment given prior to the experimental manipulations and once more at the end of the fifth recall trial; the other was the number of words recalled on each trial. These analyses of variance on recognition words at pretest and posttest showed that subjects did not differ in their ability to recognize Italian words (Tables 10 & 11). A 5(Treatment groups) X 5(Trials) repeated measures analysis of variance was carried out on the overall recall learning. The results are summarized in Table 12. As can be seen, there was a highly significant Trials effect ($F(4,180) = 257.52$, $p < .001$), suggesting that subjects increased their learning dramatically across trials. Figure 1 illustrates the nature of the results obtained for recognition at pretest and posttest assessments and for recall learning across five trials.

Table 10

One-way Analysis of Variance of Recognition Learning on Pretest of Italian-English Vocabulary List

Source	SS	df	MS	F	p
Between	18.92	4	4.73	.92	ns
Within	232.20	45	5.16		
Total	251.12	49			

Table 11

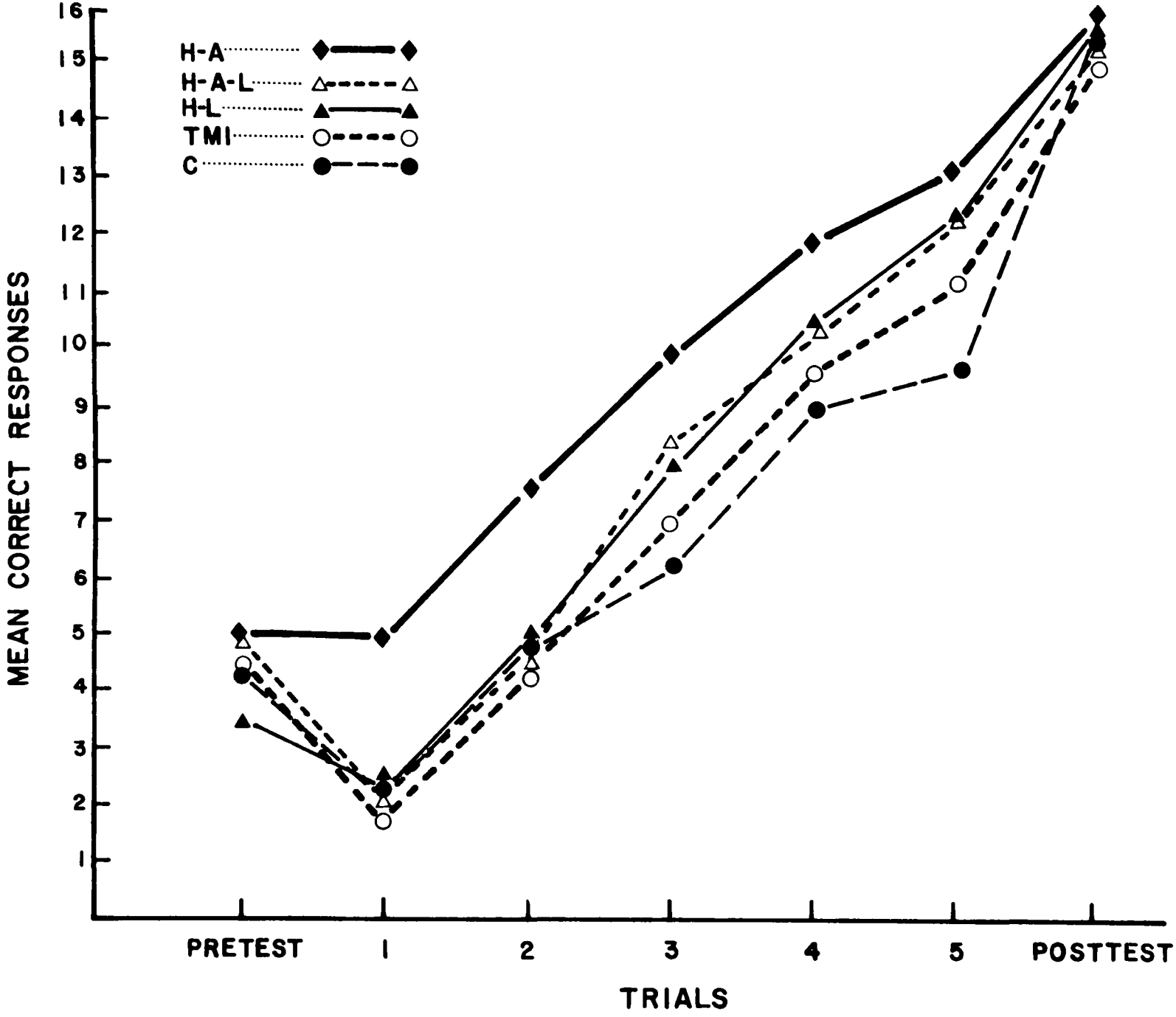
One-way Analysis of Variance of Recognition Learning on Posttest of Italian-English Vocabulary List

Source	SS	df	MS	F	p
Between	3.08	4	.77	.80	ns
Within	43.40	45	.96		
Total	46.48	49			

Table 12

Two-way Repeated Measures Analysis of Variance of Overall Recall Learning

Source	*SS*	*df*	*MS*	*F*	*p*
Between subjects					
Groups (A)	446.10	4	111.52	2.53	ns
Subj. within groups	1986.66	45	44.15		
Within subjects					
Trials (B)	3052.70	4	763.17	257.52	.001
Interaction	57.06	16	3.57	1.20	ns
B X subj. within groups	533.44	180	2.96		
Total	6057.96	249			


H-A
H-A-L
H-L
TMI
C
MEAN CORRECT RESPONSES
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
PRETEST
1
2
3
4
5
POSTTEST
TRIALS

Separate one-way analyses of variance were carried out across treatment groups at each trial. Table 13 summarizes these analyses. As can be seen, a significant group effect is found only at Trial 1 ($F(4,45) = 4.30$, $p < .01$). Tukey tests showed that HA subjects attained significantly higher recall scores than subjects in all other groups on Trial 1. Although no significant treatment effects were obtained on the other analyses of variance, a Tukey test indicated that the HA group was significantly higher than the control group on Trial 3. Use of Duncan Multiple Range Tests (Duncan, 1955) revealed an interesting pattern of data. On Trials 2, 3, and 4, the HA group was significantly higher on recall scores than the TMI and control groups. On Trial 5 the HA subjects were significantly higher than the control group, while the other hypnosis and TMI subjects scored somewhere midway between the HA and control subjects.

Further analyses were done to compare the increase in the rate of learning across trials by looking at gain scores between Trial 1 and 2, 2 and 3, 3 and 4, and 4 and 5. Also, while qualitative differences in these dependent measures were existent, it was interesting to examine gains or changes between recognition scores at pretest and recall scores on Trial 1, and changes in recall scores at Trial 5 and recognition scores at posttest.

Table 13

One-way Analyses of Variance of Five Treatment Groups on Each Recall Trial

Source	SS	df	MS	F	p
Trial 1					
Between	65.88	4	16.47	4.30	.01
Within	172.24	45	3.83		
Total	238.12	49			
Trial 2					
Between	120.52	4	30.13	2.14	ns
Within	632.66	45	14.06		
Total	753.18	49			
Trial 3					
Between	132.20	4	33.05	2.42	ns
Within	614.31	45	13.65		
Total	746.51	49			
Trial 4					
Between	91.48	4	22.87	1.96	ns
Within	525.43	45	11.68		
Total	616.91	49			
Trial 5					
Between	93.08	4	22.27	1.83	ns
Within	573.78	45	12.76		
Total	666.86	49			

As Table 14 shows, the analysis of variance for change scores across trials reveals a highly significant Trials effect ($F(3,135) = 6.23$, $p < .001$). Tukey tests indicated that Trial Block 4-5 was significantly lower than Trial Blocks 1-2 and 2-3. There were no significant differences between groups on any trial block with Duncan's Multiple Ranges. This indicates that most gains in recall occurred early in the experiment at the first two trial blocks, but with each group tending to have a similar rate of increase.

It will be recalled that the HA group scored highest, but not significantly higher than the others, on the recognition pretest. It could be argued that their higher recall scores across trials was due to their recognizing more words before learning began. This argument was tested and discarded by an analysis of covariance and Scheffe comparisons. The pretest to Trial 1 analysis of covariance (Table 15) still shows a significant effect ($F(4,45) = 4.47$, $p < .005$). The Scheffé results showed that even when the pretest advantage was subtracted, the HA group's recall learning was significantly greater on Trial 1 than that of the HAL and TMI subjects, while that of HL and control groups fell in between. A similar analysis of covariance between Trial 5 and posttest recognition was not significant (Table 16).

Table 14

Two-way Repeated Measures Analysis of Variance of Recall Learning Change Scores

Source	SS	df	MS	F	p
Between subjects					
Groups (A)	19.62	4	4.905	1.955	ns
Subj. within groups	112.925	45	2.51		
Within subjects					
Trials (B)	83.935	3	27.98	6.23	.001
AB	36.74	12	3.06	.68	ns
B X subj. within groups	606.575	135	4.49		
Total	859.795	199			

Table 15

Analysis of Covariance between Pretest Italian Recognition List and Recall Learning on Trial 1

Source	SS	df	MS	F	p
Between	59.08	4	14.77	4.47	.005
Within	145.42	45	3.31		
Total	204.50	49			

Table 16

Analysis of Covariance between Recall Trial 5 and Posttest Italian Recognition List

Source	SS	df	MS	F	p
Between	2.50	4	.63	.69	ns
Within	39.87	45	.91		
Total	42.37	49			

To summarize, no group was significantly different on either pre- or posttest recognition of Italian words. Even though the HA group had a higher pretest recognition score, its recall scores on Trial 1 were the result of recall learning and not due to the initial pretest recognition level, as the analysis of covariance shows. The analysis of change scores shows that the greatest gains were made from Trial Blocks 1-2 and 2-3, and that the groups tended to show similar rates of change over trial blocks. Thus, the lead in recall learning which HA subjects achieved on Trial 1 was maintained throughout.

Another interesting way of examining the pattern of data is to look at the number of new words that were learned from trial to trial. This is a rough but fair estimate of motivation to learn new words. There are some problems with this kind of analysis, two of which are particularly salient. First of all, while one may examine new words learned, this does not take into account the fact that previously learned words may be dropped out. Yet, it is a measure of the degree to which subjects are motivated to acquire new words, even though this acquisition may have an interfering effect on old words. The second limiting factor is that, as we examine total number of new words learned across trials, there is a limitation due to the degrees of freedom. As subjects tend to learn more new

words, there are fewer new words eligible for them to learn. Nevertheless, in spite of these limitations, it is possible to look at the pattern of data as it occurs, at least for the early trials. An analysis of this kind of new word learning was done, looking at the total number of new words learned on each trial. An analysis of variance on these data showed that the HA group made its greatest gains on the first trial, learning an average of 4.7 words, whereas the other groups learned an average of 1.8, 1.8, 1.7, and 2.1 words for the HAL, HL, TMI and control groups, respectively. Figure 2 illustrates the pattern of data associated with these findings. On Trial 2, none of the groups differed significantly in new words gained. However, subjects in the HA group still showed the highest amount of new words learned, although not significantly higher when compared to other groups. On Trial 3 the HA group drops dramatically on new words learned. However, HAL and HL subjects now show significantly higher gains than both the control and HA groups, while the TMI group falls between these extremes. There were no significant effects on Trials 4 and 5. It appears, on the basis of this formulation of data, that the reason why the HA group does so well is due to the early gains that are made, and that HAL and HL groups only make their greatest new word gains by Trial 3. More will be said about the significance of these findings later.

Table 17

Two-way Repeated Measures Analysis of Variance of New Words Recall Learning

Source	SS	df	MS	F	p
Between subjects					
Groups (A)	11.94	4	2.99	1.49	ns
Subj. within groups	89.88	45	1.99		
Within subjects					
Trials (B)	105.42	4	26.36	7.87	.001
Interaction	129.66	16	8.10	2.42	.01
B X subj. within groups	602.92	180	3.35		
Total	939.82	249	3.35		

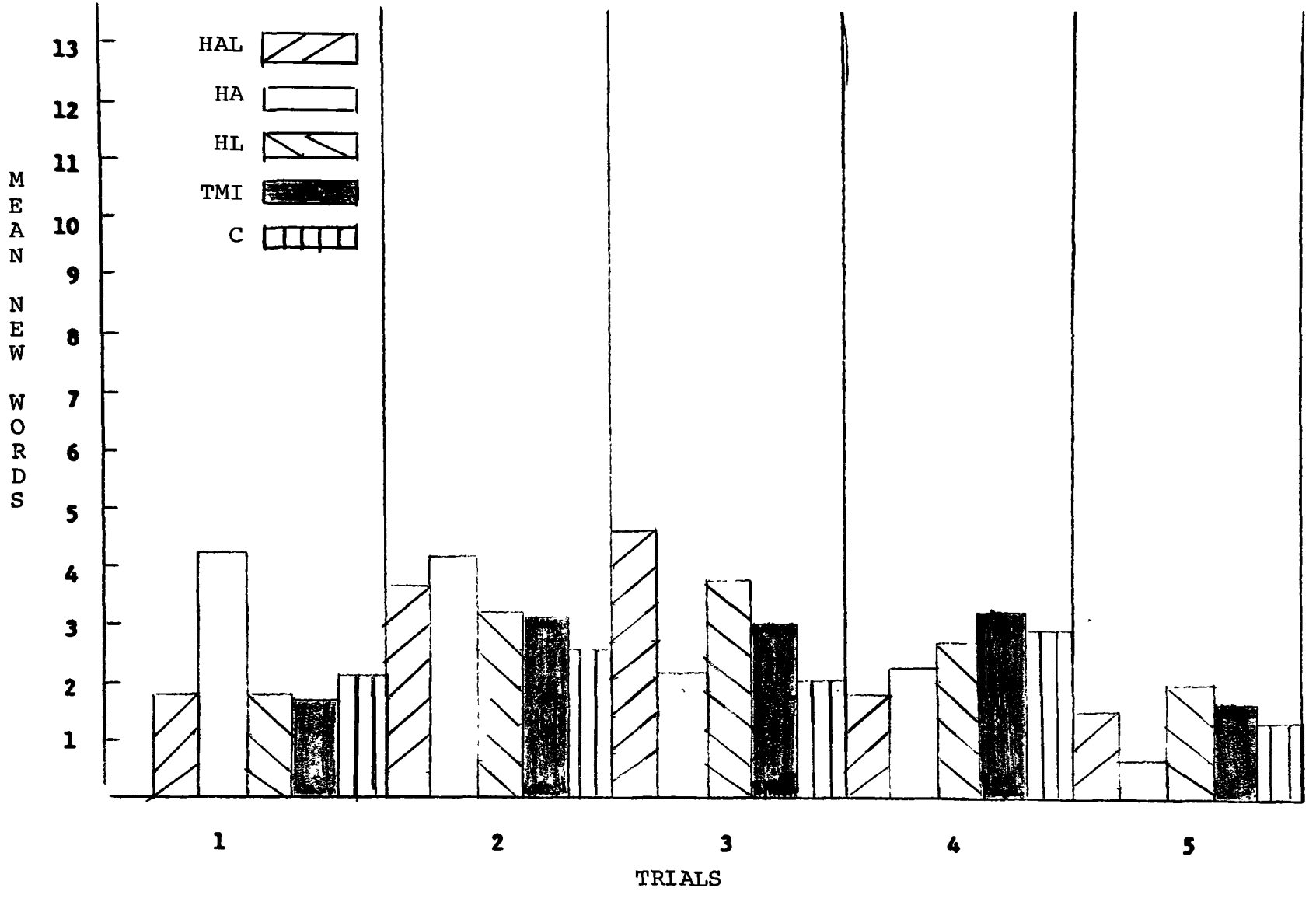


Figure 2. Groups Means of New Words Learned on Five Trials.

Attitudes and Learning

As will be recalled, the first hypothesis of the experiment said that hypnotic suggestions for attitude change would induce HAL and HA subjects to report higher liking for the Italian culture and an increased desire to interact with Italian-speaking persons. Both groups showed significantly more favorable attitudes toward the Italian culture on the post-hypnotic manipulation assessment. On the same assessment, the HAL group showed a significant increase in the desire to study in Italy, while HA subjects manifested a significantly higher desire to have an Italian-speaking neighbor. The HAL subjects maintained their favorable attitudes from pretest to posttest assessments on these particular items. The HA subjects responded to the demands for honesty instructions, and their increased favorable attitudes showed no significant differences between pretest and posttest assessments.

The second hypothesis stated that to the extent that a reported increased liking for the Italian culture and/or increased desire to interact with Italian-speaking persons occurred, recall learning of the Italian words should be facilitated. To establish a measure of the relationship between beginning attitudes toward Italians and recall learning, Pearson Product Moment Correlations were computed across all 50 subjects and the five recall trials. The

correlations were small and nonsignificant (Table 18). Then, to test the second hypothesis, two kinds of Pearson correlations were computed. First, each group's pretest-post-hypnotic manipulation assessment change scores on the ICAS and each part of Questions 31 and 32 were correlated to each group's five learning trials. This made a total of 200 correlations. There were only seven significant correlations scattered throughout the statistics (Table 19). It was concluded that these were chance occurrences of significance. Hence, in this experiment there seemed to be no significant relationship between recall learning and changes in attitudes on the post-hypnotic manipulation assessment.

Second, each group's pretest-posttest change scores were taken on the same items and each learning trial. Only four scattered correlations out of 200 were significant (Table 20). Again it was concluded that pretest-posttest attitude change was not significantly correlated with recall learning.

It was hoped that biserial correlations could be computed between learning and the scores of subjects scoring high or low on attitude change in the HAL and HA groups. This proved inadvisable because attitude shifts on any given question were small and erratically scattered. This created the problem of deciding tied ranks on quite arbitrary

Table 18

Pearson Product Moment Correlation Coefficients of Pretest Ethnic Attitudes and Five Recall Trials

Correlations		r	p
ICAS and	Trial 1	.01	ns
	2	.04	ns
	3	.06	ns
	4	.02	ns
	5	.01	ns
Question 31a and	Trial 1	.01	ns
	2	.03	ns
	3	.02	ns
	4	.01	ns
	5	.03	ns
Question 31b and	Trial 1	.01	ns
	2	.04	ns
	3	.06	ns
	4	.02	ns
	5	.01	ns
Question 31c and	Trial 1	.01	ns
	2	.01	ns
	3	.04	ns
	4	.05	ns
	5	.01	ns
Question 32a and	Trial 1	.06	ns
	2	.06	ns
	3	.05	ns
	4	.02	ns
	5	.01	ns
Question 32b and	Trial 1	.06	ns
	2	.06	ns
	3	.04	ns
	4	.01	ns
	5	.01	ns

Table 18 (Cont'd.)

Correlations		r	p
Question 32c and Trial	1	.06	ns
	2	.05	ns
	3	.04	ns
	4	.01	ns
	5	.01	ns
Question 32d and Trial	1	.05	ns
	2	.06	ns
	3	.03	ns
	4	.01	ns
	5	.01	ns

df = 49
All tests: two-tailed

Table 19

Pearson Product Moment Correlation Coefficients of Ethnic Attitude Change Scores from Pretest to Post-Hypnotic Manipulation Assessment and Five Recall Trials

Question	Trial	Groups HAL	HA	HL	TMI	C
ICAS	1	.42 ns	.03 ns	-.41 ns	-.14 ns	-.51 ns
	2	.04 ns	.05 ns	-.54 ns	-.08 ns	-.36 ns
	3	-.06 ns	.13 ns	-.13 ns	.50 ns	-.49 ns
	4	-.16 ns	.22 ns	-.11 ns	-.24 ns	-.45 ns
	5	-.08 ns	.27 ns	-.12 ns	.01 ns	-.34 ns
31a	1	-.08 ns	.14 ns	.00 ns	.00 ns	.00 ns
	2	.14 ns	-.05 ns	.00 ns	.00 ns	.00 ns
	3	.28 ns	.11 ns	.00 ns	.00 ns	.00 ns
	4	.13 ns	.19 ns	.00 ns	.00 ns	.00 ns
	5	.21 ns	.17 ns	.00 ns	.00 ns	.00 ns
31b	1	-.03 ns	.31 ns	.49 ns	.48 ns	-.36 ns
	2	-.27 ns	.16 ns	.64 .05	.46 ns	-.34 ns
	3	.06 ns	.24 ns	.72 .05	.25 ns	-.60 ns
	4	-.02 ns	.35 ns	.55 ns	.54 ns	-.54 ns
	5	.15 ns	.33 ns	.52 ns	.18 ns	-.46 ns
31c	1	-.28 ns	.26 ns	-.30 ns	-.31 ns	-.36 ns
	2	-.14 ns	-.02 ns	-.02 ns	-.40 ns	-.25 ns
	3	.00 ns	.05 ns	.31 ns	.00 ns	-.23 ns
	4	-.25 ns	-.02 ns	-.04 ns	-.13 ns	-.08 ns
32a	1	.09 ns	-.05 ns	.37 ns	-.28 ns	-.43 ns
	2	.20 ns	.14 ns	.14 ns	-.24 ns	-.25 ns
	3	.08 ns	.04 ns	.44 ns	.11 ns	-.22 ns
	4	-.17 ns	.05 ns	.13 ns	-.05 ns	-.05 ns
	5	-.14 ns	-.03 ns	-.20 ns	-.23 ns	-.14 ns
32b	1	.09 ns	.15 ns	.37 ns	.18 ns	-.36 ns
	2	.11 ns	.18 ns	.43 ns	.16 ns	-.25 ns
	3	.08 ns	.10 ns	.00 ns	-.45 ns	-.23 ns
	4	.06 ns	.24 ns	.21 ns	.11 ns	-.08 ns
	5	.17 ns	.26 ns	.33 ns	-.13 ns	-.25 ns

Table 19 (Cont'd.)

Question	Trial	Groups HAL	HA	HL	TMI	C
32c	1	.54 ns	.28 ns	.00 ns	.70 .05	.42 ns
	2	.42 ns	.01 ns	-.21 ns	.57 ns	.37 ns
	3	.33 ns	-.01 ns	-.32 ns	.60 ns	.25 ns
	4	.21 ns	-.16 ns	-.24 ns	.31 ns	.25 ns
	5	.31 ns	-.18 ns	-.20 ns	.26 ns	.45 ns
32d	1	.51 ns	-.46 ns	-.67 .05	.19 ns	-.29 ns
	2	.32 ns	-.36 ns	-.18 ns	.12 ns	-.21 ns
	3	.43 ns	-.36 ns	-.07 ns	.00 ns	-.26 ns
	4	.59 ns	-.42 ns	.01 ns	-.06 ns	-.03 ns
	5	.61 ns	-.53 ns	.20 ns	.40 ns	-.06 ns

df = 8

All tests: two-tailed

Table 20

Pearson Product Moment Correlation Coefficients of Ethnic Attitude Change Scores from Pretest to Posttest and Five Recall Scores

Question	Trial	Groups HAL	HA	HL	TMI	C
ICAS	1	.66 ns	.03 ns	-.23 ns	-.21 ns	-.51 ns
	2	.25 ns	.08 ns	-.34 ns	-.44 ns	-.36 ns
	3	.20 ns	.16 ns	.15 ns	-.30 ns	-.49 ns
	4	.17 ns	.18 ns	-.20 ns	-.44 ns	-.45 ns
	5	.17 ns	.06 ns	-.16 ns	-.61 ns	-.36 ns
31a	1	-.16 ns	.00 ns	-.04 ns	.00 ns	.00 ns
	2	.16 ns	.00 ns	-.20 ns	.00 ns	.00 ns
	3	.29 ns	.00 ns	.12 ns	.00 ns	.00 ns
	4	.11 ns	.00 ns	-.26 ns	.00 ns	.00 ns
	5	.17 ns	.00 ns	.25 ns	.00 ns	.00 ns
31b	1	.14 ns	.37 ns	.29 ns	.00 ns	-.52 ns
	2	-.11 ns	.24 ns	.27 ns	.00 ns	-.40 ns
	3	.00 ns	.31 ns	.55 ns	.00 ns	-.55 ns
	4	-.21 ns	.27 ns	.16 ns	.00 ns	-.46 ns
	5	.03 ns	.21 ns	.15 ns	.00 ns	-.32 ns
31c	1	.06 ns	-.19 ns	-.40 ns	.00 ns	.36 ns
	2	.07 ns	.30 ns	-.26 ns	.00 ns	.25 ns
	3	.21 ns	-.14 ns	.16 ns	.00 ns	.23 ns
	4	.14 ns	-.17 ns	.04 ns	.00 ns	.08 ns
	5	.22 ns	-.18 ns	.07 ns	.00 ns	.25 ns
32a	1	.34 ns	-.05 ns	.70 .05	.00 ns	-.43 ns
	2	.38 ns	.14 ns	.64 .05	.00 ns	-.25 ns
	3	.37 ns	.04 ns	.25 ns	.00 ns	-.22 ns
	4	.35 ns	.05 ns	.35 ns	.00 ns	-.05 ns
	5	.27 ns	.03 ns	.31 ns	.00 ns	-.14 ns
32b	1	.19 ns	.19 ns	.84 .05	.00 ns	-.36 ns
	2	.14 ns	.30 ns	.71 .05	.00 ns	-.25 ns
	3	.20 ns	.14 ns	.39 ns	.00 ns	-.23 ns
	4	.37 ns	.17 ns	.40 ns	.00 ns	-.08 ns
	5	.38 ns	.18 ns	.26 ns	.00 ns	-.25 ns

Table 20 (Cont'd.)

Question	Trial	Groups HAL	HA	HL	TMI	C
32c	1	.54 ns	-.45 ns	-.46 ns	.00 ns	.41 ns
	2	.42 ns	-.36 ns	.25 ns	.04 ns	.33 ns
	3	.43 ns	-.36 ns	.00 ns	.00 ns	.25 ns
	4	.20 ns	-.41 ns	.14 ns	.18 ns	.18 ns
	5	.31 ns	-.53 ns	.01 ns	-.23 ns	.37 ns
32d	1	.62 ns	-.46 ns	-.67 .05	-.18 ns	-.28 ns
	2	.45 ns	-.36 ns	-.18 ns	.09 ns	-.21 ns
	3	.55 ns	-.36 ns	-.07 ns	.00 ns	-.26 ns
	4	.69 .05	-.42 ns	.01 ns	.21 ns	-.03 ns
	5	.68 .05	-.53 ns	.19 ns	.33 ns	-.06 ns

df = 8

All tests: two-tailed

grounds. The resulting correlations would have been suspect.

To sum up, neither beginning attitudes nor attitude changes were significantly related to recall learning.

The third hypothesis of the experiment held that the HAL group, because they had both kinds of suggestions, would have higher recall scores than subjects in the HA and HL groups. This was discounted because it was the HA group which did the significant learning throughout the experiment. And, as has just been seen, attitude change was not significantly related to recall learning.

The fifth hypothesis predicted that the hypnosis groups would evidence greater motivation to acquire new foreign vocabulary as measured by new words learned. As was reported earlier, Duncan's Multiple Range tests showed the HA group learning significantly more than all groups on Trial 1, while the HAL and HL groups learned more than the HA and control groups on Trial 3. To that extent, one can conclude that the hypnotic suggestions are related to early motivation to acquire new vocabulary words in this present experiment.

The other hypothesis in the experiment dealt with the differing motivation to learn between the TMI and control groups. Since the TMI subjects were given an emphatic appeal to do their best, it was expected that

they would perform significantly higher in recall than control subjects. The results reported earlier did not bear out the prediction. While the TMI subjects were consistently higher, they never reached significance.

CHAPTER IV

DISCUSSION

The results of the present experiment offer confirmation for some hypotheses but not for others. The heart of the experiment was to induce hypnosis subjects to view the Italian culture and/or the task of word recall more favorably, thereby raising their recall learning. Both the HAL and HA groups reported significant gains between pretest and post-hypnotic manipulation assessments on the ICAS items. HAL subjects maintained those gains from pretest to posttest. The HA subjects, however, reacted to the demands for honesty and failed to retain significant attitude gains from pretest to posttest. The same pattern occurred for each group on other items. HAL subjects maintained significant gains pretest to posttest on the desire to study in Italy. HA subjects, on the other hand, lost significant gains in the willingness to have an Italian neighbor. Thus, there seemed to be attitude change within the two groups as predicted by the hypotheses. However, there was an apparent attitude reversal in the HA group.

Why this was so could be due to different reasons. Perhaps the HA subjects were responding to experimenter demands and their attitudes on a given assessment were only mirrors of what the experimenter seemed to want. Seen in this

light, the HA subjects reported increased liking for Italians because they had just received favorable hypnotic suggestions. Then they reversed themselves because the experimenter demanded honesty. Another explanation could be that some high attitude changes were reported by subjects who admitted that their attitudes were not all that sincere. An examination of their scores on that question in the raw scores appendix offers some prima facie evidence for this possibility. However, it was difficult to do a statistical analysis of this explanation because of a major problem inherent in this experiment--the small number of subjects in the different groups.[1] Any analysis would be hampered with numerical insufficiency and the problem of tied ranks. Thus, we are left unsatisfied as to what was happening in the area of "true" attitude change.

The hypotheses connected with recall learning were partially confirmed. According to an analysis of variance, there was a significant group effect on Trial 1. Tukey tests revealed that the HA subjects had significantly more recall than all groups on this trial. A Tukey test showed that the HA subjects had significantly higher recall than the control subjects on Trial 3. Duncan Multiple Range Tests showed the HA subjects recalling significantly more than the TMI and control subjects on Trials 2 to 4, and having significantly higher recall than control subjects on Trial 5.

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[1] Powers of tests when available appear in Appendix 16.

As for new word learning, the HA group had significantly more recall on Trial 1 than all groups. On Trial 3 the HAL and HL subjects had significantly more recall than HA and control subjects.

When it came to the matter of the relationship between attitudes and learning, it was found that correlations were small and nonsignificant. This was so whether the attitudes were beginning attitudes, attitude changes from pretest to post-hypnotic manipulation assessment, or attitude changes from pretest to posttest. It is difficult to draw firm conclusions about this because of the small numbers of subjects in each cell. What was said about the problem of attitude reversal applies with equal force here.

There is still remaining the question as to why HA subjects showed significantly better learning while the other hypnosis groups had significant results only on Trial 3 of new word recall. Perhaps the answer lies in differences in the expectations that each of the hypnosis groups had. As will be recalled, each potential volunteer for a hypnosis group was told on the telephone that the experiment dealt with the relationship between hypnosis and learning. Barber and DeMoor (1972) have pointed out that merely defining the situation as hypnosis raises suggestibility. After receiving the call, it could have been that the subjects were telling themselves that some sort of hidden potential was to be

tapped through hypnosis. Once into the hypnotic induction, another factor was raising suggestibility--deep relaxation. Talone, Steadman and Diamond (1973) report that relaxation itself elevates a subject's receptivity to suggestion. Having had positive expectations about hypnosis and learning before arriving for the experiment and ready for further suggestions, two of the hypnosis groups (HAL and HL) were told by the experimenter that they were fully ready for learning and desiring to get to the task. It is possible that they interpreted this to mean that they would not have to expend great effort. Or perhaps they were lulled into believing that they were learning more words than they were. In short, they could have had false expectations as to what would happen.

The HA subjects, on the other hand, had suggestions describing the richness and humanity of Italian culture, but were told nothing about an increased desire for learning the words. Knowing somehow that hypnosis is supposed to help but not told that it would be easy and, together with positive feelings about the Italian culture, the HA subjects applied themselves diligently right from the beginning. They showed a desire to learn new words on an average of 4.5 words on the first two recalls and had learned more than half of the vocabulary list by that point.

There is some support for the effectiveness of this type of suggestion in the Lozanov method of suggestopedia (Racle, 1975). Lozanov points out that sometimes a direct suggestion for easy learning backfires. Either the person does not believe it, or it may make him lazy. On the other hand, Lozanov makes indirect attacks on negative attitudes toward learning by making the learning situation as non-threatening and relaxed as possible, while at the same time demanding high performance by giving a lot of material to learn. The student does in fact learn much because he does not refer to negative expectations.

If future research were to be done using the same basic design as the present experiment, it would be very useful to have more subjects in each group. Then we would have a more representative sample upon which to do statistical analysis. It might be interesting to add another hypnosis group which is simply given the hypnotic induction without receiving any suggestions. This would be another check on the effect of suggestions as opposed to the mere fact of being hypnotized. Or, the experimenter might have a number of hypnosis training sessions so that the subjects become quite responsive. Then he could give the various suggestions and see whether attitudes change in a stable manner.

Another change in the experimentation might be the use of material more personally meaningful than a vocabulary list to be learned by rote memory. The Lozanov method uses

dialogues and opportunities to communicate with a teacher in the new language. A future study might move into the more interesting area of language application by comparing the effect of hypnotic suggestions and other forced exposures to cultures on the skills of communicative competence. Communicative competence (Savignon, 1972) involves skills dealing with delivering messages and being understood in a foreign language.

To sum up, the results mirror the confusing pattern of hypnosis experiments in the literature. Like the subjects in the ethnic attitude change experiments cited above, the HAL group showed significant attitude changes and maintained them in the face of demands for honesty. On the other hand, the HA subjects first reported attitude change following hypnotic suggestions. Then they showed a reversed trend after the demands for honesty. As far as recall learning was concerned, the HA group joined the few sound design experiments that reached significant results for hypnosis groups, while the HAL and HL groups had significant learning on a single trial of new word acquisition. As for the relationship between attitude change and learning, no significant correlations were found. It is possible that the HA group was helped by the attitude suggestions they received because they had positive feelings about Italian culture and

no false expectations about easy learning. Finally, future research can incorporate more subjects, multiple hypnosis training sessions, and more meaningful material.

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RAW SCORES FOR HYPNOSIS GROUP HAL

Subj.[a]	50-item Italian Word List Trial 1	50-item Italian Word List Trial 2	Recall Learning Overall Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	New Words Trial 1	Trial 2	Trial 3	Trial 4	Trial 5
G.G.	7	16	3	8	12	14	15	3	5	5	1	1
C.C.	6	16	2	1	8	13	15	2	0	6	5	2
S.C.	5	16	2	2	2	7	6	2	2	1	1	1
T.G.	6	16	4	8	11	12	14	4	4	4	0	2
L.W.	5	13	0	2	7	8	10	0	2	5	2	1
V.S.	6	14	3	3	6	10	12	3	1	3	5	1
P.B.	4	16	1	8	12	16	16	1	7	4	2	0
H.S.	3	14	1	4	6	5	8	1	3	3	1	2
L.B.	3	16	1	8	12	12	15	1	7	6	0	2
J.W.	5	16	1	5	9	9	12	1	5	5	1	1
Sum	50	153	18	49	85	116	124	18	36	42	18	15
Mean	5.0	15.3	1.8	4.9	8.5	11.6	12.4	1.8	3.6	4.2	1.8	1.5
S.D.	1.33	1.16	1.23	2.88	3.34	3.03	3.37	1.23	2.41	1.55	1.81	.85

Subj.	Demands Enquiry Scale[b] 1	2	3
G.G.	6[c]	5	4
C.C.	6	5	6
S.C.	5	3	5
T.G.	5	5	5
L.W.	6	5	6
V.S.	6	5	7
P.B.	5	6	7
H.S.	6	6	5
L.B.	5	5	5
J.W.	6	6	6
Sum	56	51	56
Mean	5.6	5.1	5.6
S.D.	.49	.83	.92

[a] Subjects identified by their initials.

[b] 1 - How much hypnotized?
2 - How closely following suggestions?
3 - How sincere attitudes

[c] 7 - Very much
6 - Moderately
5 - Slightly
4 - Neutral
3 - Slightly
2 - Moderately
1 - Not at all

Subj.[a]	Questions - Italian Culture Attitudes Scale											
	30			31a			31b			31c		
	1	2	3	1	2	3	1	2	3	1	2	3
G.G.	138	156	152	7	7	7	6	6	6	6	6	6
C.C.	163	191	188	6	7	7	5	6	6	6	6	6
S.C.	153	186	170	6	6	6	6	6	6	4	4	4
T.G.	152	204	204	6	7	7	6	7	7	6	7	7
L.W.	173	194	180	6	6	6	6	7	6	4	6	5
V.S.	173	175	182	6	4	3	5	5	5	2	2	2
P.B.	189	197	196	7	7	7	7	7	7	7	7	7
H.S.	144	164	158	6	6	6	6	6	5	6	6	5
L.B.	151	172	170	6	6	6	6	6	6	4	4	4
J.W.	133	139	138	4	5	5	4	5	5	7	7	7
Sum	1569	1778	1738	60	61	60	57	61	59	49	53	51
Mean	156.9	177.8	173.8	6.0	6.1	6.0	5.7	6.1	5.9	4.9	5.3	5.1
S.D.	17.49	20.47	20.48	.82	1.99	1.25	.82	.74	.78	1.53	1.57	1.52

	32a			32b			32c			32d		
	1	2	3	1	2	3	1	2	3	1	2	3
G.G.	4	5	5	1	1	1	4	5	5	4	4	5
C.C.	7	7	7	3	3	3	6	7	7	6	7	7
S.C.	7	7	7	4	4	4	7	7	7	7	7	7
T.G.	7	77	7	5	5	5	5	7	7	5	6	6
L.W.	7	7	7	1	1	1	7	7	7	7	6	6
V.S.	7	7	7	4	5	5	7	7	7	7	7	7
P.B.	7	7	7	7	7	7	7	7	7	7	7	7
H.S.	5	6	5	5	5	4	6	7	7	7	6	6
L.B.	4	4	4	2	3	3	4	5	5	4	5	5
J.W.	7	7	7	6	6	6	7	7	7	7	7	7
Sum	62	64	63	38	40	39	60	66	66	61	62	63
Mean	6.2	6.4	7.3	3.8	4.0	3.9	6.0	6.6	6.6	6.1	6.2	6.3
S.D.	1.32	1.07	1.16	2.04	2.00	1.97	1.25	.84	.84	1.29	1.03	.82

[a]Subjects identified by their initials.

RAW SCORES FOR HYPNOSIS GROUP HA

Subj.[a]	50-item Italian Word List Trial		Recall Learning Overall Trial					New Words Trial				
	1	2	1	2	3	4	5	1	2	3	4	5
K.G.	5	16	7	10	12	14	16	7	5	1	1	2
R.C.	1	16	8	12	15	16	16	8	4	3	1	0
L.L.	8	16	5	8	11	15	16	5	3	3	4	1
G.G.	11	16	8	16	16	16	16	8	8	0	0	0
P.A.	1	14	2	1	2	5	7	2	1	0	3	2
P.C.	3	16	9	15	16	16	16	9	6	1	0	0
P.R.	5	16	3	4	9	11	12	3	2	4	2	1
D.S.	3	16	1	2	5	7	8	1	1	3	3	1
M.B.	5	16	1	6	10	14	15	1	5	4	5	0
D.D.	5	16	3	10	13	15	16	3	7	2	4	0
Sum	47	158	47	84	109	129	138	47	42	21	23	7
Mean	4.7	15.8	4.7	8.4	10.9	12.9	13.8	4.7	4.2	2.1	2.3	.7
S.D.	3.06	.63	3.09	5.17	4.63	3.69	3.55	3.09	2.44	1.52	1.77	.82

Subj.	Demands Enquiry Scale[b] 1	2	3
K.G.	3[c]	5	3
R.C.	3	5	7
L.L.	6	6	3
G.G.	7	7	6
P.A.	5	5	4
P.C.	7	7	7
P.R.	3	7	1
D.S.	6	5	6
M.B.	4	5	5
D.D.	6	6	7
Sum	50	58	49
Mean	5.0	5.8	4.9
S.D.	1.55	.87	1.97

[a] Subjects identified by their initials.

[b] 1 - How much hypnotized?
2 - How closely following suggestions?
3 - How sincere attitudes?

[c] 7 - Very much
6 - Moderately
5 - Slightly
4 - Neutral
3 - Slightly
2 - Moderately
1 - Not at all

	Questions - Italian Culture Attitudes Scale											
	30			31a			31b			31c		
Subj.[a]	1	2	3	1	2	3	1	2	3	1	2	3
K.G.	140	170	123	6	6	6	6	6	6	6	6	6
R.C.	133	156	150	4	5	4	4	5	5	4	5	4
L.L.	134	164	149	4	5	4	4	5	4	4	4	5
G.G.	154	167	166	7	7	7	7	7	7	4	7	4
P.A.	143	156	147	4	4	4	4	4	4	4	4	4
P.C.	180	200	202	7	7	7	7	7	7	4	4	4
P.R.	143	188	160	4	5	4	4	4	4	2	4	3
D.S.	160	164	170	6	6	6	6	6	6	4	4	4
M.B.	88	122	121	4	4	4	3	3	3	6	4	4
D.D.	163	174	165	6	6	6	6	6	6	6	6	6
Sum	1439	1661	1553	52	55	52	51	53	52	44	46	43
Mean	143.9	166.1	155.3	5.2	5.5	5.2	5.1	5.3	5.2	4.4	4.6	4.3
S.D.	24.21	20.72	23.53	1.32	1.08	1.32	1.45	1.34	1.40	1.26	.84	.95

	32a			32b			32c			32d		
	1	2	3	1	2	3	1	2	3	1	2	3
K.G.	5	4	4	4	4	4	5	5	4	6	5	5
R.C.	7	7	7	7	7	7	7	7	7	7	7	7
L.L.	7	7	7	4	5	4	7	7	7	7	7	7
G.G.	4	4	4	1	1	1	6	6	6	5	5	5
P.A.	3	3	3	7	7	7	6	6	6	6	6	6
P.C.	7	7	7	7	7	7	7	7	7	7	7	7
P.R.	5	4	4	4	3	3	6	7	6	7	7	7
D.S.	6	6	6	6	6	6	2	2	3	1	2	2
M.B.	7	7	7	7	7	7	7	5	5	5	5	5
D.D.	7	7	7	7	7	7	7	7	7	7	7	7
Sum	58	56	56	54	54	53	60	59	58	58	58	58
Mean	5.8	5.6	5.6	5.4	5.4	5.3	6.0	5.9	5.8	5.8	5.8	5.8
S.D.	1.47	1.45	1.65	2.06	2.11	2.16	1.56	1.59	1.40	1.87	1.62	1.62

[a]Subjects identified by their initials.

RAW SCORES FOR HYPNOSIS GROUP HL

Subj.[a]	50-item Italian Word List Trial		Recall Learning Overall Trial					New Words Trial				
	1	2	1	2	3	4	5	1	2	3	4	5
M.M.	5	16	2	7	7	13	15	2	5	2	5	1
W.G.	5	15	6	11	13	14	13	6	5	3	0	1
R.P.	1	16	1	0	2	6	4	1	0	1	4	1
F.M.	6	16	1	5	8	11	13	1	3	5	2	3
B.G.	2	16	1	8	12	14	16	1	7	5	1	2
L.C.	4	16	1	3	7	11	15	1	2	5	6	2
L.P.	2	16	3	7	8	6	11	1	2	5	6	2
C.D.	3	15	0	1	8	9	9	0	1	7	3	1
C.R.	1	16	1	4	8	12	14	1	3	4	4	3
R.H.	3	16	2	5	7	12	14	2	3	4	2	2
Sum	18	158	18	50	80	108	124	18	32	38	27	20
Mean	1.8	15.8	1.8	5.0	8.0	10.8	12.4	1.8	3.2	3.8	2.7	2.0
S.D.	1.75	.42	1.68	3.33	2.97	2.98	3.60	1.68	2.04	1.81	2.06	1.05

Subj.	Demands Enquiry Scale[b] 1	2	3
M.M.	6[c]	6	5
W.G.	6	7	7
R.P.	6	5	4
F.M.	6	6	6
B.G.	7	5	6
L.C.	6	3	7
L.P.	7	6	3
C.D.	4	6	7
C.R.	4	5	6
R.H.	6	4	6
Sum	58	53	57
Mean	5.8	5.3	5.7
S.D.	.98	1.1	1.27

[a] Subjects identified by their initials

[b] 1 - How much hypnotized?
2 - How closely following suggestions?
3 - How sincere attitudes?

[c] 7 - Very much
6 - Moderately
5 - Slightly
4 - Neutral
3 - Slightly
2 - Moderately
1 - Not at all

	Questions - Italian Culture Attitudes Scale											
	30			31a			31b			31c		
Subj.[a]	1	2	3	1	2	3	1	2	3	1	2	3
M. Mc.	170	172	156	6	6	5	6	6	4	5	5	5
W.G.	153	155	155	4	4	4	4	5	5	3	3	3
R.P.	170	173	163	6	6	6	6	5	5	3	3	3
F. Mc.	180	181	183	7	7	7	6	7	7	6	6	6
B.G.	144	144	139	7	7	7	7	7	7	4	6	5
L.C.	145	165	167	7	7	7	6	6	6	6	6	6
L.P.	160	158	160	7	7	7	7	7	7	3	4	3
C.D.	149	168	172	6	6	6	6	6	6	2	4	4
C.R.	176	178	174	7	7	7	7	7	7	7	7	7
R.H.	135	135	126	3	3	3	5	5	5	5	6	6
Sum	1582	1699	1595	60	60	59	60	61	59	44	50	48
Mean	158.2	169.9	159.5	6.0	6.0	5.9	6.0	6.1	5.9	4.4	5.0	4.8
S.D.	15.27	14.88	16.87	1.41	1.41	1.45	.94	.88	1.10	1.65	1.41	1.47

	32a			32b			32c			32d		
	1	2	3	1	2	3	1	2	3	1	2	3
M.Mc.	6	6	6	6	6	6	6	6	7	7	7	7
W.G.	5	6	6	6	6	7	5	5	6	6	5	5
R.P.	2	2	2	6	6	6	2	2	2	1	1	1
F. Mc.	7	7	7	6	6	6	6	7	7	6	7	7
B.G.	1	1	1	7	7	7	6	5	5	5	6	6
L.C.	7	7	7	7	7	7	7	7	7	7	7	7
L.P.	1	1	1	1	1	1	1	1	1	7	7	7
C.D.	6	7	4	6	5	5	6	6	6	7	7	7
C.R.	7	7	7	7	7	7	7	7	7	7	7	7
R.H.	7	7	7	1	1	1	5	5	5	6	6	6
Sum	49	51	48	53	52	53	51	51	53	59	60	60
Mean	4.9	5.1	4.8	5.3	5.2	5.3	5.1	5.1	5.3	5.9	6.0	6.0
S.D.	2.55	2.64	2.57	2.30	2.30	2.36	2.02	2.08	2.16	1.85	1.88	1.88

[a]Subjects identified by their initials.

RAW SCORES FOR TASK MOTIVATION GROUP

Subj.[a]	50-item Italian Word List Trial 1	50-item Italian Word List Trial 2	Recall Learning Overall Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	New Words Trial 1	Trial 2	Trial 3	Trial 4	Trial 5
G.S.	7	16	3	7	7	12	12	3	4	1	4	1
G.C.	4	15	1	3	5	10	9	1	3	2	5	0
C.R.	5	15	0	0	4	5	9	0	0	4	3	3
J.P.	3	16	4	8	9	11	13	4	6	1	2	2
K.R.	6	16	0	1	3	8	11	0	1	2	5	3
J.P.	5	16	2	7	9	9	11	2	5	2	1	1
J.G.	4	16	3	7	9	13	14	3	4	3	3	1
B.D.	3	11	1	3	10	9	12	1	2	7	2	2
B.B.	0	15	1	5	7	11	13	1	4	5	4	2
C.S.	5	16	2	2	7	9	9	2	2	3	9	1
Sum	42	148	17	43	70	97	113	17	31	30	32	16
Mean	4.2	14.8	1.7	4.3	7.0	9.7	11.3	1.7	3.1	3.0	3.2	1.6
S.D.	1.83	1.47	1.27	2.87	2.36	2.26	1.83	1.33	1.85	1.89	1.32	.97

Subj.	Demands Enquiry Scale[b] 1	2	3
G.S.	4[c]	3	6
G.C.	5	5	6
C.R.	2	5	6
J.P.	1	1	4
K.R.	4	1	7
J.P.	2	4	5
J.G.	3	6	7
B.D.	1	1	7
B.B.	1	1	6
C.S.	3	2	6
Sum	26	29	63
Mean	2.6	2.9	6.3
S.D.	1.43	1.97	.67

[a] Subjects identified by their initials.

[b] 1 - How much hypnotized?
2 - How closely following suggestions?
3 - How sincere attitudes?

[c] 7 - Very much
6 - Moderately
5 - Slightly
4 - Neutral
3 - Slightly
2 - Moderately
1 - Not at all

	Questions - Italian Culture Attitudes Scale											
	30			31a			31b			31c		
Subj.[a]	1	2	3	1	2	3	1	2	3	1	2	3
G.S.	140	141	143	6	6	6	6	5	6	4	4	4
G.C.	131	130	131	4	4	4	4	4	4	4	4	4
C.R.	126	123	131	4	3	4	3	3	3	1	1	1
Q.P.	143	140	141	7	7	7	7	7	7	6	6	6
K.R.	185	187	191	7	7	7	7	7	7	7	7	7
T.P.	147	151	153	4	4	4	6	6	6	6	6	6
T.G.	206	205	207	7	7	7	7	7	7	7	7	7
B.D.	119	120	119	4	4	4	3	3	3	3	4	3
B.B.	172	173	171	7	7	7	7	7	7	7	7	7
C.S.	142	148	155	7	7	7	7	7	7	7	7	7
Sum	1511	1518	1542	57	56	57	57	56	57	52	53	52
Mean	151.1	151.8	154.2	5.7	5.6	5.7	5.7	5.6	5.7	5.2	5.3	5.2
S.D.	27.79	28.10	27.98	1.49	1.64	1.49	1.70	1.71	1.70	2.10	2.00	2.10

	32a			32b			32c			32d		
	1	2	3	1	2	3	1	2	3	1	2	3
G.S.	2	2	2	3	3	3	4	4	5	7	7	7
G.C.	6	6	6	6	6	6	6	6	6	6	6	6
C.R.	5	5	5	5	5	5	5	5	5	5	5	5
Q.P.	6	6	6	2	2	2	5	5	5	6	6	6
K.R.	6	6	6	1	1	1	6	6	6	7	7	7
T.P.	6	6	6	7	7	7	6	6	6	7	7	7
T.G.	3	3	3	3	3	3	1	1	1	1	1	1
B.D.	6	6	6	6	6	6	6	6	6	6	6	6
B.B.	7	7	7	7	7	7	6	6	6	4	4	5
C.S.	5	4	5	1	1	1	5	5	6	6	6	6
Sum	52	51	52	41	41	41	50	50	52	55	55	56
Mean	5.2	5.1	5.2	4.1	4.1	4.1	5.0	5.0	5.2	5.5	5.5	5.6
S.D.	1.55	1.59	1.55	2.37	2.37	2.38	1.56	1.56	1.55	1.84	1.84	1.78

[a]Subjects identified by their initials.

RAW SCORES FOR CONTROL GROUP

Subj.[a]	50-item Italian Word List Trial 1	50-item Italian Word List Trial 2	Recall Learning Overall Trial 1	Recall Learning Overall Trial 2	Recall Learning Overall Trial 3	Recall Learning Overall Trial 44	Recall Learning Overall Trial 5	New Words Trial 1	New Words Trial 2	New Words Trial 3	New Words Trial 4	New Words Trial 5
R.D.	8	16	4	7	9	10	13	4	3	2	2	3
P.L.	3	14	0	1	3	7	9	0	1	3	4	1
M.S.	2	16	2	2	5	8	5	2	1	2	3	0
L.R.	8	16	5	12	13	16	16	5	8	0	2	0
P.F.	6	16	3	7	7	13	15	3	4	1	5	2
B.C.	0	15	0	0	1	5	6	0	0	1	4	3
J.W.	6	16	4	8	14	16	16	4	4	6	2	0
A.B.	3	16	1	0	2	4	4	1	2	2	2	2
C.H.	4	15	2	2	4	6	5	2	1	2	2	0
M.L.	1	15	0	1	1	4	4	0	1	1	3	2
Sum	41	155	21	42	61	91	97	21	25	20	29	13
Mean	4.1	15.5	2.1	4.2	6.1	9.1	9.7	2.1	2.5	2.0	2.9	1.3
S.D.	2.66	.67	1.85	3.99	4.60	4.46	4.85	1.85	2.37	1.63	1.10	1.25

Subj.	Demands Enquiry Scale[b] 1	2	3
R.D.	1[c]	4	7
P.L.	6	6	7
M.S.	1	1	7
L.R.	1	4	7
P.F.	1	2	7
B.C.	2	4	7
J.W.	1	1	7
A.B.	5	1	7
C.H.	1	1	4
M.L.	1	6	7
Sum	20	30	67
Mean	2.0	3.0	6.7
S.D.	1.89	2.05	.95

[a] Subjects identified by their initials.

[b] 1 - How much hypnotized?
2 - How closely following suggestions?
3 - How sincere attitudes?

[c] 7 - Very much
6 - Moderately
5 - Slightly
4 - Neutral
3 - Slightly
2 - Moderately
1 - Not at all

	Questions - Italian Culture Attitudes Scale											
	30			31a			31b			31c		
Subj.[a]	1	2	3	1	2	3	1	2	3	1	2	3
R.D.	198		196	7		7	6		6	6		5
P.L.	193		194	7		7	6		7	7		7
M.S.	152		145	4		4	4		4	4		4
L.R.	197		192	7		7	7		7	7		7
P.F.	135		138	4		4	4		4	4		4
G.C.	170		168	7		7	7		7	6		6
T.W.	143		140	6		6	6		5	3		3
A.B.	172		176	7		7	7		7	7		7
C.H.	140		137	4		4	4		4	4		4
M.L.	135		152	5		5	3		3	1		1
Sum	1635		1638	58		58	54		54	49		48
Mean	163.5		163.8	5.8		5.8	5.4		5.4	4.9		4.8
S.D.	25.87		24.39	1.40		1.40	1.50		1.58	2.02		1.99

	32a			32b			32c			32d		
	1	2	3	1	2	3	1	2	3	1	2	3
R.D.	5		1	4		3	2		5	5		3
P.L.	5		7	7		7	7		7	7		7
M.S.	7		7	7		7	7		7	7		7
L.R.	7		7	1		1	6		6	6		5
P.F.	7		7	6		6	5		7	5		7
G.C.	7		7	3		3	7		7	7		7
T.W.	4		4	5		5	6		6	7		7
A.B.	2		1	1		1	6		6	7		7
C.H.	3		3	4		4	4		4	4		4
M.L.	2		2	3		3	5		5	6		6
Sum	49		46	41		40	55		60	61		60
Mean	4.9		4.6	4.1		4.0	5.5		6.0	6.1		6.0
S.D.	2.08		2.67	2.18		2.21	1.58		1.05	1.10		1.49

[a]Subjects identified by their initials.

APPENDIX 2

ITALIAN-ENGLISH RECOGNITION LIST

1. fiorire
   1. bloom
   2. grind
   3. float
   4. bend
   5. escape

2. anima
   1. soul
   2. friend
   3. goal
   4. roof
   5. animal

3. vergonoso
   1. shameful
   2. hopeful
   3. horizontal
   4. respectful
   5. honest

4. capitolo
   1. hat
   2. title
   3. well
   4. chapter
   5. chip

5. quando
   1. when
   2. although
   3. because
   4. since
   5. after

6. allusione
   1. hallucination
   2. hint
   3. conspiracy
   4. illusion
   5. planning

7. canzone
   1. dancing
   2. song
   3. castle
   4. hunting
   5. handsome

8. aspettarsi
   1. have pity
   2. expect
   3. be fond of
   4. attack
   5. attract

9. riposta
   1. ripsaw
   2. post office
   3. answer
   4. fence post
   5. gesture

10. debolezza
    1. blessing
    2. wisdom
    3. nobility
    4. weakness
    5. revenge

11. lontano
    1. lenient
    2. far
    3. before
    4. plenty
    5. quickly

12. disonesta
    1. design
    2. dissonance
    3. mistake
    4. uneasiness
    5. deceit

13. tentare
    1. establish
    2. try
    3. exclaim
    4. shake
    5. throw

14. margine
    1. guilt
    2. north
    3. minstrel
    4. borrowing
    5. edge

15. pericolo
    1. nearness
    2. periscope
    3. barber
    4. jeopardy
    5. perimeter

16. per
    1. above
    2. before
    3. by
    4. pair
    5. pear

17. tagliare
    1. pour tout
    2. listen
    3. cost
    4. cut
    5. copper

18. cognizione
    1. reference
    2. acquaintance
    3. knowledge
    4. cousin
    5. renown

19. stesso
    1. middle
    2. threat
    3. same
    4. light
    5. mean

20. goffo
    1. gaudy
    2. adventurous
    3. good
    4. remaining
    5. awkward

21. ostacolo
    1. host
    2. closet
    3. hindrance
    4. guest house
    5. kiss

22. tutto
    1. tough
    2. all
    3. your
    4. heavy
    5. tree

23. fattoria
    1. fern
    2. farm
    3. distance
    4. sick
    5. hunger

24. sviloppo
    1. graywolf
    2. development
    3. traffic circle
    4. buttonhole
    5. sewing

25. signore
    1. signature
    2. lord
    3. scenery
    4. meeting
    5. visit

26. piede
    1. rent
    2. prize
    3. foot
    4. piece
    5. luck

27. credenza
    1. gullibility
    2. thickness
    3. wardrobe
    4. belief
    5. loan

28. farfalla
    1. newspaper
    2. lining
    3. butterfly
    4. parade
    5. blossom

29. sopra
    1. ripe
    2. upon
    3. sugar
    4. south
    5. certain

30. esempio
    1. exemption
    2. instance
    3. diswater
    4. rarity
    5. exception

31. inutile
    1. investment
    2. useless
    3. unusual
    4. rarity
    5. exception

32. apertura
    1. foliage
    2. overcoat
    3. work
    4. ornament
    5. opening

33. sforzo
    1. bravery
    2. sport
    3. dance
    4. joke
    5. effort

34. penoso
    1. salary
    2. furniture
    3. painful
    4. pencil
    5. perhaps

35. tranquillo
    1. needle
    2. transfer
    3. trap
    4. quiet
    5. treason

36. importanza
    1. alertness
    2. importer
    3. magnitude
    4. customs
    5. essence

37. cattivo
    1. lavender
    2. mutual
    3. trip
    4. easy
    5. bad

38. addormentarsi
    1. wake up
    2. hurry
    3. imagine
    4. go to sleep
    5. make an effort

39. risultato
    1. laughter
    2. insult
    3. high-rise
    4. restlessness
    5. outcome

40. construzione
    1. battle
    2. balance
    3. building
    4. basement
    5. basket

41. amaro
    1. amount
    2. American
    3. mother
    4. bitter
    5. aim

42. sciocchezze
    1. sour cream
    2. forbearer
    3. disturbance
    4. nonsense
    5. superiority

43. degno
    1. indignant
    2. worthy
    3. deep
    4. design
    5. dinner

44. mercante
    1. merchant
    2. baker
    3. charming
    4. grateful
    5. margin

45. peculato
    1. peculiarity
    2. doubt
    3. speculation
    4. embezzlement
    5. pickle

46. pioggia
    1. full
    2. fist
    3. plan
    4. rain
    5. feather

47. gesto
    1. guest
    2. hero
    3. congestion
    4. ghost
    5. gesture

48. penoso
    1. sorrow
    2. penury
    3. alleyway
    4. pencil
    5. wistfulness

49. luce
    1. lumber
    2. loud
    3. light
    4. lump
    5. necklace

50. giornata
    1. judgment
    2. labor
    3. day
    4. journal
    5. play

51. spergiuro
    1. tribute
    2. staircase
    3. spare part
    4. change
    5. perjury

52. ornare
    1. despite
    2. organize
    3. obtain
    4. praise
    5. decorate

53. caldo
    1. hot
    2. shawl
    3. change
    4. cheap
    5. key

54. felice
    1. honor
    2. early
    3. horrible
    4. heaven
    5. happy

55. dolcemente
    1. roughly
    2. doubtful
    3. distance
    4. dullness
    5. gently

56. forse
    1. perhaps
    2. already
    3. beyond
    4. beneath
    5. outside

57. chiaro
    1. clay
    2. lightning
    3. clap
    4. clear
    5. clerk

58. profondo
    1. improved
    2. untried
    3. lovely
    4. deep
    5. profitable

59. colazione
    1. throw away
    2. decide
    3. deny
    4. lunch
    5. be young

60. prova
    1. bud
    2. price
    3. race
    4. leaf
    5. proof

61. verde
    1. poetry
    2. towards
    3. green
    4. voice
    5. view

62. mandare
    1. send
    2. envy
    3. glimpse
    4. enter
    5. enjoy

63. sbagliare
    1. trample on
    2. roar
    3. intend
    4. travel
    5. be mistaken

64. vista
    1. life
    2. foot
    3. pen
    4. sight
    5. tree

65. prevedere
    1. present
    2. foresee
    3. approve
    4. choose
    5. apply

66. girare
    1. turn
    2. tower
    3. tear
    4. touch
    5. torment

APPENDIX 3

ATTITUDES TOWARD EUROPEAN ITALIANS

Please use the following scale in circling one of the numbers beneath each item.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

1. The European Italians have always contributed a great deal in the areas of art and literature.

   1 2 3 4 5 6 7

2. Family life is very important to the European Italians.

   1 2 3 4 5 6 7

3. The European Italians are noted for their excellent preparation of foods and beverages.

   1 2 3 4 5 6 7

4. The European Italians are a very intelligent people.

   1 2 3 4 5 6 7

5. I really admire the European Italian people.

   1 2 3 4 5 6 7

6. I would like to meet more European Italian people.

   1 2 3 4 5 6 7

7. For the most part, the European Italians are sincere and honest.

   1 2 3 4 5 6 7

8. The European Italians are very friendly and hospitable.

   1 2 3 4 5 6 7

9. The more I learn about the European Italians, the more I like them.

   1 2 3 4 5 6 7

10. European Italian people can be depended upon to do a good job in anything they attempt.

    1 2 3 4 5 6 7

11. The European Italians have produced many outstanding world figures.

1 2 3 4 5 6 7

12. The European Italians' way of life appears interesting and exciting.

1 2 3 4 5 6 7

13. The European Italians take much pride in themselves and their customs.

1 2 3 4 5 6 7

14. The European Italians are considerate of the feelings of others.

1 2 3 4 5 6 7

15. The European Italians deserve much respect from the rest of the world.

1 2 3 4 5 6 7

16. The European Italians are generally well educated.

1 2 3 4 5 6 7

17. Canadian children can learn much of value by associating with European Italian playmates.

1 2 3 4 5 6 7

18. The more I learn about the European Italians, the more I want to be able to speak the Italian language.

1 2 3 4 5 6 7

19. The European Italians get along well with other people.

1 2 3 4 5 6 7

20. We should learn more in school about the European Italians and their way of life.

1 2 3 4 5 6 7

21. It would be interesting to visit Italy.

1 2 3 4 5 6 7

22. The European Italians are trustworthy and dependable.

1 2 3 4 5 6 7

23. The European Italians understand the problems of others.

1 2 3 4 5 6 7

24. I have a favorable attitude towards the European Italians.

1 2 3 4 5 6 7

25. The European Italians enjoy life to its fullest.

1 2 3 4 5 6 7

26. The European Italians have every right to be proud of their culture.

1 2 3 4 5 6 7

27. The European Italians are a very kind and generous people.

1 2 3 4 5 6 7

28. The European Italians should be praised for their great achievements in science.

1 2 3 4 5 6 7

29. The European Italians are cheerful, agreeable and good-humored.

1 2 3 4 5 6 7

30. I would like to get to know the European Italian people better.

1 2 3 4 5 6 7

- - - - - - - - -

31. How favorably/unfavorably disposed would you be to:

(a) allow an Italian-speaking person live next door to you?

Strongly Unfavorably	Moderately Unfavorably	Slightly Unfavorably	Neutral	Slightly Favorably	Moderately Favorably	Strongly Favorably
1	2	3	4	5	6	7

(b) have an Italian-speaking person as a roommate?

1 2 3 4 5 6 7

(c) marry an Italian-speaking person?

1 2 3 4 5 6 7

32. If the opportunity were available to you, how willing would you be to complete a year of study in each of the following countries?

(a)	England	very willing	1	2	3	4	5	6	7 not very willing
(b)	U.S.A.	very willing	1	2	3	4	5	6	7 not very willing
(c)	Italy	very willing	1	2	3	4	5	6	7 not very willing
(d)	France	very willing	1	2	3	4	5	6	7 not very willing

33. What countries have you visited in Europe and how long were you there?

APPENDIX 4

DEMANDS-FOR-HONESTY QUESTIONNAIRE

Now that the formal part of the experiment is completed, we would like to ask you some very specific questions about the way in which you participated and how you contributed to the experiment. Here, we are specifically interested in obtaining an honest and truthful appraisal of how you felt during the experiment. It is important that you try to be as truthful and straightforward in your replies as possible. It is important for our experiment to know exactly how you really felt, as honestly as you can report your experiences. The experimenter, in a moment, will pass out a brief questionnaire asking you to answer some questions concerning the experiment. Again, please do not try to please the experimenter in responding favorably. Please give honest and truthful answers. The formal part of the experiment is completed and we are interested in obtaining as truthful and honest replies as possible.

1. To what extent did you feel you were hypnotized in the experiment?

   Very much so 1 2 3 4 5 6 7 Not at all

2. When the experimenter suggested pleasant and positive experiences, did you imagine that you could really feel those things that were being suggested to you?

   Very much so 1 2 3 4 5 6 7 Not at all

3. When you replied to the attitude questionnaire concerning European Italians, did you give replies that were designed to please the experimenter because you had been hypnotized and given those suggestions, or did you really feel as if you had that feeling and those opinions within you when you responded the way you did?

   Really felt that way 1 2 3 4 5 6 7 Didn't <u>really</u> feel that way

4. During the formal learning part of the experiment, did you use any particular strategy or learning device to help you learn the Italian words?

5. Please complete the attitude questionnaire once more. Please indicate on the questionnaire, as truthfully as you can, the degree to which you feel one way or another about the items presented.

APPENDIX 5

ITALIAN-ENGLISH VOCABULARY LIST USED FOR RECALL LEARNING

		Letters	Imagery Value	Meaningful-ness Value	Thorndike-Lorge Frequency
Easier List					
cognizione	knowledge	10	2.97	6.36	AA
credenza	belief	8	2.73	5.24	39
importanza	magnitude	10	2.50	5.68	7
peculato	embezzlement	8	3.17	5.54	0
riposta	answer	7	2.77	6.04	25
sforzo	effort	6	3.33	5.75	AA
spergiuro	perjury	9	3.37	5.92	1
sviluppo	development	8	3.07	6.04	A
Sum X		66	23.91	46.57	322
Mean		8.25	2.99	5.82	40.25
SD		1.39	.30	.34	40.94
Harder List					
allusione	hint	9	2.57	3.72	29
disonesta	deceit	9	3.30	4.92	8
esempio	instance	7	2.80	4.04	A
ostacolo	hindrance	8	3.07	4.80	3
penoso	wistfulness	6	3.13	4.16	1
pericolo	jeopardy	8	3.03	3.48	2
risultato	outcome	9	2.40	4.24	8
schiocchezze	nonsense	12	3.07	4.12	19
Sum X		68	23.37	33.48	120
Mean		8.50	2.92	4.18	15
SD		1.77	.30	.49	17.09

APPENDIX 6

t TESTS OF MEANS OF EASY AND HARD VOCABULARY LISTS

	Easy Words $\bar{X}$	Hard Words $\bar{X}$	*t*	*p*
Imagery value	2.99	2.92	.46	ns
Meaningfulness	5.82	4.18	7.76	.001
Thorndike-Lorge frequency	40.25	15.00	1.61	ns

df = 14
All tests: two-tailed

APPENDIX 7

TELEPHONE APPEAL TO VOLUNTEERS

I'm Jim Buechele of the Faculty of Psychology. I'm working with Dr. Girodo.

About a month ago I came to the class and administered a test to find persons suitable for an experiment on the processes of learning. Out of over 500 people tested, you are one of those persons who meets the criteria we are looking for.

(For the hypnosis group: The experiment deals with hypnosis and the processes of learning.)

(For the TMI group: The experiment deals with motivation and learning.)

(For the control group: The experiment deals with the processes of learning.)

I'm sorry I can't tell you more about the experiment, but from your class in psychology, you know that this is necessary in order to make an experiment valid.

We'll be happy to schedule you in at your convenience. Can we count you in as one of our volunteers?

APPENDIX 8

GENERAL INTRODUCTION GIVEN TO HYPNOSIS GROUPS

Thank you for volunteering as a subject in this experiment. The purpose of the following experiment is to examine the relation between hypnosis and learning foreign languages.

There are basically four parts to this experiment. The first part consists of obtaining some index of your ability to recognize and identify a list of Italian words correctly. It also consists of obtaining some measurement on what you think about the foreign language in question, the people who speak the language, and the culture to which the language refers.

The second part of the experiment is concerned with hypnosis and imagination. The experimenter will ask you to participate in a hypnosis induction and will ask you to fantasize and imagine a series of very pleasant events.

The third part of the experiment focuses upon presenting you with a list of English and Italian words. This constitutes the learning portion of the experiment which will be described more fully later on.

The fourth portion of the experiment consists of the completion of a series of brief questionnaires. Please try to cooperate as best you can in every portion of the experiment.

Please be assured that you will not be asked to do anything that will make you look silly or stupid, or that will prove embarrassing to you. The purpose of the experiment is to obtain some serious scientific information. If you have any questions about the hypotheses being investigated, please leave your name and address with the experimenter and once the experiment is completed and the data are analyzed, the experimenter will send you a detailed description of the purpose of the experiment and the role which you played in the experiment.

APPENDIX 9

GENERAL INTRODUCTORY INSTRUCTIONS FOR TMI AND CONTROL GROUPS

Thank you for volunteering as a subject in the present experiment. The purpose of the present experiment is to investigate (for the TMI group: the relation between motivation and) learning words from a foreign language. There are basically three parts to the experiment. The first part consists of obtaining some index of your ability to recognize and correctly identify certain words in the language. Also, we are interested in obtaining some measurement of what you think about the language, the people who speek the language, and the culture to which the language refers.

The second portion of the experiment involves presenting you with a list of English and Italian words. The experimenter will tell you more about the nature of the learning task involved later on. After that portion of the experiment is completed, the experimenter will ask you to complete a series of brief questionnaires.

Please be assured that he will not ask you anything that will make you look silly or stupid, or that will prove embarrassing to you. The purpose of the experiment is to obtain serious scientific information.

Should you have any questions about the hypotheses of the experiment, please leave your name and address with the experimenter and, once the experiment is completed and the data have been analyzed, the experimenter will send you a detailed description of the purpose of the experiment and the role which you played.

APPENDIX 10

MOTIVATING SUGGESTIONS FOR HAL AND HA GROUPS

Now that you are relaxed, I want you to imagine some pleasant scenes as I describe them to you. Just think along with me. Put yourself into the pleasant scenes.

I want you to imagine that you have been on an extended visit to Italy and on this particular summer day in the countryside you find yourself just outside Rome. You are picnicing on a rolling hill that overlooks a beautiful villa built hundreds of years ago. It has solid stone walls, an inner courtyard with flowers and trees and a pitched roof of red tile. The sunlight floods it, and some of the window panes catch the sun and sparkle brightly. The villa is circled by restful cedar trees. As you sit there, you wonder about the people who lived in the villa. You try to picture daily life centuries before--the clothes they wore, ordinary dresses for the women and girls, white shirts and black trousers for the men, the way they did their hair--what kind of food and wine they might have had at supper. As you think, other scenes from your visit come to mind and blend into an impression of this ancient country--a magnificent basilica from late Roman times, a street with laughing people in a small village, the sunny vineyards and wine aging in heavy wooden vats, the happy people so in love with life and creating a rich culture.

Picture your wonderful stay in Rome, the world's eternal city. You can feel the Roman's love of life in public squares when you see men selling flowers and artists showing their works. People enjoying the open air with their family. As you explore the city, you feel the warm sunshine and are taken up by beautiful centuries-old buildings, elaborate, exciting fountains, statues sculpted by immortal artists. You think yourself, "How incredibly beautiful Rome is." You find it kind of exciting to have lunch in quaint sidewalk cafes, and sampling new dishes and wines. The people sitting at other tables and passing along the sidewalks are so alive and happy that you really like being in this city. You almost have a feeling of being at the crossroads of the earth as you stand in the great square in front of St. Peter's Basilica and watch visitors from every country in the world. You feel that Rome is so vibrant with life and you want very much to keep staying here.

Then you enjoy happy, extraverted Rome at nightfall, with its crowded outdoor restaurants, lighted fountains and monuments, carefree people walking along talking and laughing, enjoying Rome at night.

You find yourself really liking this country, these people, this way of enjoying life.

Think of other things from your stay. Chatting with shopkeepers. Joking with beautiful round-faced children on winding cobblestone streets. Going to a country fair, listening to the music, watching the dancing and trying local cooking. You really feel part of things. Imagine that you stayed for a year with a wonderful family with several beautiful children. You are impressed at how close they are and how much they care for each other. You feel very good because you become close to each person in the family. Each one of these wonderful people has come to mean something special to you. You feel really good as you remember the gifts they gave you on your birthday, especially the one from the little children. You remember how much fun it was to celebrate Christmas and Easter with their happy customs. You feel very satisfied to have learned to prepare several Italian dishes with the family's special recipes. You have become close friends with the ones your own age. (Special closing for HA group) and you continue to correspond with them. The whole experience has left you with positive and warm memories of your trip, and you wish to go back someday.

Back home you often think about those days with the Italian people and it raises your spirits and makes you really feel good about their having shared so much of their life with you. You will continue to cherish most deeply those memories.

(Learn-the-words suggestions for HAL group)

You have such a positive feeling for these people, such a warmth and liking for them, that you really would like to master their language better. You are enchanted by their voices' tone and music and poetry. You feel so good about your experience that you feel very keen to learn Italian in the same style, manner and eloquence as the Italians. You feel so really good about everything that you want to learn each new word you encounter as exactly as you can. You like these warm beautiful people so much that you want to learn each word as exactly as you can. After I have awakened you, you will feel fresh and alert and prepared and willing to learn the Italian words.

APPENDIX 11

MOTIVATING INSTRUCTIONS FOR HL GROUP

Now I am going to give you a series of suggestions you'll find easy to comply with. Listen carefully to the suggestions and let yourself go along with what is being said. Now I want you to imagine you have a very strong desire to learn the Italian language and Italian words. Strongly desire to learn these Italian words. You imagine that you feel it will be easyto learn Italian words. You are fully prepared and are mentally alert to learn them. After I have awakened you from hypnosis, you will really feel as if your intellect and learning capacity is very ready for learning Italian words. You want to master their meaning and to learn them as exactly as you can. You are becoming eager to get to the task so that you can learn these Italian words. You are getting ready to get to the task. You want to get to the task and to learn these words as exactly as you can.

APPENDIX 12

INSTRUCTIONS TO TMI GROUP

In this experiment, I am going to test your ability to learn and recall certain words. How well you do on this test which I will give you depends entirely on your willingness to try to the best of your ability to learn and remember the words that are presented. Everyone passed these tests when they tried. For example, we asked people to try to the best of their ability to learn and memorize and recall the words. Most people were able to do this very well. They were able to really put their minds to it and really try hard at learning the words. However, a few people thought that this was an awkward or silly thing to do and did not really feel like trying and, therefore, they failed the test. Yet, when these people later on realized that it was not hard to really try to the best of your ability, to really try hard, they were able to increase their score substantially when they really put their minds to it and tried to do the very best that they could. What I ask is your cooperation in helping this experiment by trying to the very best and maximum of your ability to learn what I present to you. I want you to score as high as you can because we are trying to measure the maximum ability of people to learn foreign words. If you do not try to the best of your ability, this experiment will be worthless and I will tend to feel silly. On the other hand, if you try to the very best of your ability to learn the material presented, you can easily do well in learning the words and recalling them later on, and you will be helping this experiment and not wasting any time. Please remember, really try to the best of your ability, really try very hard, really try hard, focus your attention and concentrate as best as you can to the very best of your ability on trying to learn and remember the words presented. The experiment depends entirely on your willingness to try and do this as best as you can.

APPENDIX 13

LEARNING INSTRUCTIONS FOR CONTROL GROUP

In the next portion of the experiment, the experimenter will present you with a list of English and Italian words. You are to learn which Italian word goes with which English word. In this experiment, it is important for you to learn as best you can. Please do the best you can in this portion of the experiment.

APPENDIX 14

LEARNING INSTRUCTIONS FOR ALL GROUPS

The machine you see before you is called a memory drum. It advances a paper roll which contains a series of English words and their Italian translations. You will see them in the middle of the slot. The words on the left are the English words. The words on the right are their Italian translations. I want you to learn both words as a pair. Say both words aloud when they appear on the memory drum. The words will appear as a pair for six seconds. After you have seen all the word pairs on the list, the memory drum will present the English word for eight seconds. You will have that eight seconds plus eight seconds more for a total of 16 seconds, to write down the correct spelling of the Italian translation of each English word. You will be provided a test form for this purpose. We will present the list of words five times. After each presentation of the list, there will be a test. Again, say both words aloud when they appear on the memory drum. Learn them as a pair. After each presentation of the list you will be asked to write the correct spelling of the Italian translation of each English word.

APPENDIX 15

To establish test-retest reliability for the attitude questionnaire, the scores of the subjects in the TMI and control groups were correlated from pretest to posttest. These two groups were chosen because neither had received any suggestions about Italians and would have no reason to change across the assessments. All correlations proved significant.

Pearson Product Moment Correlation Coefficients of Pretest-Posttest Attitudes of TMI and Control Group Subjects Combined

Correlations	r	p
ICAS Scale	.98	.01
Question 31a	1.00	.01
" 31b	.97	.01
" 31c	.99	.01
" 32a	.88	.01
" 32b	.99	.01
" 32c	.85	.01
" 32d	.89	.01

df = 18
All tests: two-tailed.

To establish the construct validity of the scales, i.e., the fact that scores on attitudes toward Italian culture would have parallel attitudes toward interacting with Italians, the scores of all 50 subjects on Questions 31 and 32 were correlated with their scores on the ICAS. Correlations were taken from both pretest assessments and from pretest-posttest changes.

Pearson Product Moment Correlation Coefficients of Pretest Attitudes on Questions 31 and 32 Related to Pretest Scores on the Italian Culture Attitudes Scale

Correlations	r	p
Question 31a to ICAS	.67	.01
" 31b "	.66	.01
" 31c "	.45	.01
" 32a "	.03	ns
" 32b "	-.12	ns
" 32c "	-.15	ns
" 32d "	-.07	ns

df = 48
All tests: two-tailed.

Pearson Product Moment Correlation Coefficients of Change Scores Pretest-Posttest on Questions 31 and 32 Related to Italian Culture Attitudes Scale

Correlations	r	p
Questions 31a to ICAS	.25	ns
" 31b "	.43	.01
" 31c "	.18	ns
" 32a "	-.02	ns
" 32b "	-.07	ns
" 32c "	.33	.05
" 32d "	.28	.05

df = 48
All tests: two-tailed.

Powers of Tests

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