AN INQUIRY INTO NARCO-SYNTHESIS-THERAPY AS A POSSIBLE DIAGNOSTIC TECHNIQUE IN CASES OF STUTTERING

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A THESIS

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CHAPTER I

INTRODUCTION AND PURPOSE

A program of therapy in stuttering today must be directed toward the person as a whole. As the problem of stuttering includes the entire personality, it is necessary to gain insight into the patient's attitude and background to determine the factors influencing his behavior and his personality.

Some general principles have been drawn regarding methods of obtaining causative factors, but the need for specific principles is not being met. It is the duty and responsibility of the therapist, therefore, to endeavor to unearth these predisposing factors in order to go beyond the symptoms and into the causation.

The problem

Statement of the problem.

The purpose of this study is to investigate the possible application of Narco-Synthesis-Therapy to the field of stuttering. In this respect, relevant material will be surveyed, compiled, and evaluated.

Importance of the study. There is a possibility, that the field of Narco-Synthesis-Therapy will provide a means of understanding a person's attitude and the factors influencing

it. The knowledge thus gained could then be applied to stuttering.

Definitions of terms used

Stuttering.

In this study the term stuttering is referred to on a definitive basis rather than on a descriptive basis.

Many varying definitions are set forth as to what the stuttering process really is, but in this case it is justifiable for the author to choose Wendell Johnson's[1] inclusive interpretation because of the fact that it is one of the most generally accepted in speech correction circles today.

His definition is as follows:

> Stuttering is an anticipatory, apprehensive hypertonic, avoidance reaction. (Stuttering is what a person does when 1. he expects stuttering to occur, 2. dreads it, 3. becomes tense in anticipation and 4. trying to avoid.) This amounts chiefly to a complete or partial stoppage in speech.

Narco-Synthesis-Therapy.

This particular psycho-medical process must be broken down into three distinctive elements for a clearer and more functional definition. As the term is divided into three separate units, it is logical that each of these units should

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1. Wendell Johnson, Spencer F. Brown, James F. Curtis, Clarence W. Edney, and Jacqueline Keaster, Speech Handicapped School Children, New York: Harper and Brothers, 1948, p. 182.

be defined and then combined into a complete definition.

Narco. (Greek, Narke-Numbness) A combining form signifying relation to.... or insensibility.[2]

Synthesis. (Greek, syn-togher, thithemi-place) The combination of separate elements of thought or sensation into a whole.[3]

Narco-Synthesis. (also known as Narco-Analysis, Narco-Hypnosis, Narco-Catharsis, and Narco-Suggestion.)

a. ...a drug narcosis is induced during which repressed emotion and memories are brought back and made part of conscious memory.[4]

b. This inelegant term has been used to describe the use of the intravenous injection of a narcotic drug to produce a state of mind in which the patient becomes more communicative and has less emotional control, in fact a state of veritable intoxication.[5]

Therapy. Any treatment, medication, training, exercises, or other management of a case designed and intended to bring some abnormal condition closer to normal.[6]

Narco-Synthesis-Therapy.

a. ...a therapeutic technique in which traumatic memories are reconstructed under a narcosis

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2. Funk and Wagnalls, New Standard Dictionary of the English Language, New York: Funk and Wagnalls, 1943, p. 1650.

3. Webster's New Collegiate Dictionary, Springfield, Massachusetts: G. and C. Merriman Company, 1951, p. 862.

4. E. Lindemann, and Lincoln Clarke, "Modifications in Ego Structure and Personality Reactions under the Influence of the Effects of Drugs," American Journal of Psychiatry, 108: 561, February, 1952.

5. D. K. Henderson and R. D. Gillespie, A Textbook of Psychiatry, London: Oxford University Press, 1948, p. 420.

6. Funk and Wagnalls, op. cit., p. 2499.

induced by barbiturate drugs.[7]

b. ...a therapeutic technique in which emotionally charged repressed material is released by use of hypnotic drugs and re-evaluated in subsequent analytic therapy.[8]

In general, Narco-Synthesis-Therapy is a process in which the subconscious elements are brought together into the conscious by means of drugs, then the material is re-integrated and evaluated in a positive treatment.

The two narcotic drugs or barbiturates which are referred to in detail in this study are Sodium Amytal and Sodium Penthathol. The studies which described their use were chosen because of their concurrence to the problem of stuttering. These two drugs, also, are by far the most commonly used for this process at the present time.

Sodium Amytal.

a. Anhydrous iso-amylethyl barbiturate is a white crystalline substance which decomposes rapidly if allowed to stand in a solution.[9]

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7. J. G. Watkins, Hypnotherapy of War Neuroses, New York: Ronald Press, 1941, p. 108.

8. Bertrand Frohman, Brief Psychotherapy, Philadelphia: Lea and Febinger, 1948, p. 247.

9. W. J. Bleckwenn, "Narcosis as a Therapy in Neuropsychiatric Conditions," Journal of the American Medical Association, 95: 1168, October 18, 1930.

b. The effects of this drug range from hypnosis to a deep sleep.[10]

Sodium Pentathol.

a. Sodium Ethyl (1 methyl butyl) thiobarbiturate.[11]

b. A barbiturate, yellowish in color and smelling similar to sulfur. It is an effective sedative of short duration.[12]

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10. M. G. Mulinos, Pharmacology, New York: Oxford University Press, 1951, p. 193.

11. Harry Solomon and Paul Yakovlev, Editors, Manual of Military Neuro-Psychiatry, Philadelphia: W. B. Saunders and Company, 1945, p. 529.

12. Mulinos, op. cit., p. 200.

CHAPTER II

BRIEF HISTORY AND PRESENT STATUS OF STUTTERING AND NARCO-SYNTHESIS-THERAPY

Stuttering

History.

"Stuttering", according to Van Riper,[1] "is no respecter of persons. It afflicts king and beggar, savant and ignoramus, Hebrew and Hottentot, virtuous and sinful."

That stuttering affects all types of people is evident today and it appears that the same has been true throughout history. From Moses to the late King George VI of England, the world has been aware of the savants and the kings who have been stutterers. On the other hand, in a more common place manner, the world has been aware of the common man who has been afflicted with this problem. However, today, that common man is in a far better position for help than his ancestors were. For they, at times, had to suffer operations, mechanical aids, and even condemnation as lunatics.

Causes. The theories of causation of stuttering in history are varied and numerous. It is not the purpose of this paper to deal with them at great length, despite the

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1. Charles Van Riper, Speech Correction: Principles and Methods, New York: Prentice-Hall, 1948, p. 266.

fact that some may be interesting. However, to gain a little insight toward the general problem of stuttering, some of the more prominent theories should be stated.

Aristotle,[2] famed for his many philosophies, also stated a cause for stuttering, in which the whole blame was laid in the tongue. This particular theory lasted twenty-two hundred years in some medical circles. Many scholars and doctors follow after Aristotle, who, one way or another, relate the cause of stuttering to be either an overabundance or an insufficiency of some property of the tongue. Sir Francis Bacon[3] claimed it was coldness or dryness of the tongue. Others said that it was excessive largeness, moisture, limitation of movement by the frenum, and spasms of the lingual muscles.[4]

Despite the fact that treatment generally failed when the therapist assumed the tongue to be the causative factor, many workers in the field still maintained that the cause of stuttering lay in the tongue.

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2. G. M. Klingbeil, "The Historical Background of the Modern Speech Clinic," Journal of Speech Disorder, 4:115, June, 1939.

3. Ibid., p. 116.

4. Ibid., pp. 116-28.

Along with the theories of the tongue, others held that stuttering was caused by convulsions, ulcers, moisture of the brain, the hyoid bone, nervous derangement, palsy, flow of ideas exceedingly fast, debility, improper movement of pharynx and lips, sexual excess, empty lungs, lack of organic intelligence, (instinct) and weakened lower jaw. One authority even stated that it was caused by the abnormal size of two holes in the palate.[5]

Moses Mendlesohn[6] is given credit as being the first to believe that stuttering may be of a psychical nature. Considering the fact that he lived in the eighteenth century, this psychogenic theory was not only important because he was so far ahead of his contemporaries, but also because it was the beginning of thinking concerning stuttering as a psychogenic problem. This theory brought the therapist closer to realization of basic cause than any of the others mentioned.

It was in the twentieth century that progress was made in great strides. In 1900, Thorpe[7] labeled stuttering,

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5. Ibid., pp. 116-21.

6. Ibid., p. 117.

7. E. J. Ellery Thorpe, Speech-Hesitation, New York: Edgar S. Werner Publishing and Supply Company, 1900, p. 18.

"Speech-Hesitation", and said that it was overtaut nerves that brought about misplaced contractions in the throat muscles. Wilhelm Stekel,[8] the great Austrian psychiatrist, went even farther in saying that stuttering was one of the worst forms of fear hysteria and that it was actually psychological slips of the tongue.

The psycho-neurotic theory gained a great deal of popularity around the time of the First World War. Many physicians and speech therapists felt that this psychoneurosis was caused by a shock or great fear.

Scripture[9] states:

> ...it is a typical psycho-neurosis, that may, perhaps be appropriately called the general anxiety neurosis...the most frequent cause of stuttering is a nervous shock...evidently an intense fear involved shock.

Lack of visual imagery was also quite popular at that time. C. S. Bleumel[10] was one of the leading advocates of this theory; although later he changed his position to the inhibitory theory.[11]

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8. Klingbeil, op. cit., p. 130.

9. E. W. Scripture, Stuttering, Lisping, and Correction of the Speech of the Deaf, New York: MacMillan, 1931, pp. 5-7.

10. C. S. Bleumel, "Stammering and Its Cognate Defects," A review, The Nation, 99:50, July 9, 1914.

11. Van Riper, op. cit., p. 269.

As time passed, more and more research was done on the subject of stuttering and various theories were set forth based on experimentation. These theories of causation which are still adhered to today will be discussed in Chapter III.

Therapies. The various therapies can naturally be associated quite closely to the theories of causation. There have been many different treatments put forth by various authors.

> Witchcraft, the surgeon's knife, appliances for the tongue, drugs, hypnotism, psychoanalysis, arm-swinging, and a host of other 'cures'.[12]

Many "cures" were offered by those who believed that the tongue was to blame for the stuttering. In the main these consisted in tongue exercises, mechanical props, and surgical operations. The surgical operations seem to have been the most popular. These operations consisted mainly of cutting out either muscles or parts of the tongue. In 1841, because of the temporary success of the German doctor, Dieffenbach,[13] the surgical operation reached the height of its popularity. This procedure was subsequently outlawed in the United States[14] when it failed to help the stutterer and

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12. Van Riper, op. cit., p. 366.

13. Lulu Johnson Alonso, "Theories, Specific Therapies, and Techniques for Use in Cases of Stuttering," Unpublished Master's Thesis, Michigan State College, East Lansing, Michigan, 1950, p. 5.

14. Thorpe, op. cit., p. 13.

actually only added to his misery. However, as late as 1866, a French physician, named R. E. Ore[15] was using the operation for treatment.

However, only four years later, Kreutzer[16] felt that you must have a method of treatment that would lay hold of the entire personality and character. Yet this foresighted outlook was bogged down by all sorts of conflicting theories ranging from electricity to E. F. Tompkins'[17] advice that the stutterer should do anything including "shutting up", to keep from stuttering.

As the twentieth century came into being, so did many theories of therapeutic techniques and as the twentieth century progressed these theories improved. The early contributions of Blanton,[18] Swift,[19] and Robbins[20] were instrumental parts in the therapeutics which led to sounder and more

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15. Klingbeil, op. cit., p. 127.

16. Ibid., p. 128.

17. E. F. Tompkins, "Perception of Stammering," Quarterly Journal of Speech, 4:293, May, 1918.

18. M. G. Blanton, and Smiley Blanton, "What is the Problem of Stammering?" Quarterly Journal of Speech Education, 5:340-50, October, 1919.

19. Walter B. Swfit, "A Psychological Analysis of Stuttering," Journal of Abnormal Psychology, 32:3-13, January, 1915, quoted by Van Riper, op. cit., p. 269.

20. Samuel Robbins, Stammering, and Its Treatment, Boston, Massachusetts: Boston Stammerer's Institute, 1926.

scientific treatment. It has been a slow process of development which has brought about intelligent and worthwhile therapy.

Literature.

The literature on stuttering is vast indeed, but it has just recently attained those proportions. In the past twenty-five years, scientific investigations have been done on a large scale. Probably the beginning of the modern era in stuttering research can be thought of in this manner:

> The history of Speech Pathology can be divided in a particularly meaningful way into the Pre-Travis period and the period following the beginning of Professor Travis' work in 1925.[21]

Probably even more significant was the publication of Travis' book, Speech Pathology,[22] in 1931, for it opened new possibilities in speech pathology to people all over the country.

Cause. The material on causation is more qualitative than quantitative, more detailed than general in its make-up. The literature in the last twenty years has been of the type which hopes to strengthen or weaken one particular line of reasoning or thought, so as in turn, to solidify the whole

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21. Council of the American Speech Correction Association, "Honors of the Association," Journal of Speech and Hearing Disorders, 13:2, March, 1948.

22. Lee Edward Travis, Speech Pathology, New York: D. Appleton and Company, 1931.

general theory. It attacks specific, sometimes almost minute, areas and tries to cover them in a thorough investigation. The literature of today is based on a complete picture of stuttering which is produced by a number of causes rather than by a single one.

Van Riper[33] states it in this manner:

> The fallacy of the single cause has been responsible for confusion in many fields of science, and we feel that it may be similarly responsible for some of the conflict in our own.

The writers of this modern period in stuttering seem to be going away from the single cause and at the same time trying to combine factors which might influence the onset or development of the problem. Also going on, is a great amount of elimination of ideas, assumptions, suppositions, and guess work which are based on observation rather than on scientific investigation. As soon as a particular factor is considered to be influencing stuttering, experimental work is started.

Many works are written on comparison of stutterers and non-stutterers in an effort to determine factors that are present or absent in one group and not the other, so that they may be examined for contributing influences toward stuttering.

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33. Van Riper, op. cit., p. 269.

Bryngelson,[24] at Minnesota, states how various tests and experiments were being conducted at that school:

> Investigations have taken place comparing dysphemics (stutterers) versus normal speakers ...as to sex, age, social and mental status, facts taken as to heredity, development, and clinical tests to which the subjects were subjected, and a thorough case history.

The basic literature in causation of stuttering at this time then seems to be one of working with specific factors with complete investigation along those lines. Yet as Ainsworth[25] concluded:

> It is a trite statement to say we know little concerning the etiology of stuttering---or for that matter what stuttering 'is'. A tremendous barrage of research and conjecture has been thrown at the problem from all conceivable angles; yet we have no consistent picture.

Therapy. The literature on therapy in recent years is based primarily on the evaluation of hypotheses with subsequent case histories. It becomes apparent after some reading in the field of stuttering therapy, that there are contra-indications between various outlooks. Yet this should be considered desirable, for it is not of what but of which therapies shall be used.[26]

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24. Bryng Bryngelson, "Investigations in the Etiology and Nature of Dysphemia," Journal of Speech Disorders, 7:22, March, 1942.

25. Stanley Ainsworth, Speech Correction Methods, New York: Prentice-Hall, 1948, p. 83.

26. Ibid., p. 94.

The literature on therapy differs from that of causation in that its primary interest is with a total program, whereas literature on causation explains experiments or theories concerning one controlled factor.

The literature of contemporary therapy includes a combination of approaches from various fields.

Bryngelson[37] states:

> ...sane clinical program would include materials and technics in neurology, physiology, sociology, psychology, physical and vocational guidance.

The process of integration of ideas and techniques of therapy is now the main aim of the literature on therapy today. Yet the experimentation and the explanation of techniques with various groups is well represented in the writings.

Three general themes are being set forth in these writings:

1. New approach or technique with stutterers.
2. Program of therapy for a homogeneous group.
3. Integration of therapies.

Concerned with these main headings are those articles on procedure, experimentation, and results, but they tend to be a means toward an end. The need for experimentation of therapy is apparent when we consider Heltman's[38] statement.

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37. Bryngelson, op. cit., p. 26.

38. Harry Heltman, First Aids for Stutterers, Boston, Massachusetts: Expression Company, 1943, p. 75.

> ...different people react differently to different treatment.

Therefore, different therapies must be constructed, examined, validated, and applied to the cases for which they are appropriate. The literature of today tends to be headed in that general direction.

Extent of the research. One way of judging the extent of the research on stuttering is to consider the number of articles written about the problem in the Journal of Speech and Hearing Disorders. In the past fifteen years approximately five hundred and forty main articles have appeared in the Journal. Of these, one hundred and twenty-nine were on the subject of stuttering.[29] This amounts to 28.66 per cent of the articles written. Considering the various problems in speech and hearing, this figure assumes important dimensions.

Another statistical measurement is the number of theses and dissertations written on stuttering. In the most recent compilation of these, in 1950,[30] fourteen out of one hundred and twenty-five research papers in speech and hearing disorders were done on stuttering. This constituted the

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29. Grant Fairbanks, Editor, "Cumulative Index," Journal of Speech and Hearing Disorders, March, 1951, pp. 49-52.

30. Franklin Knower, "Graduate Theses in Speech and Hearing Disorders," Journal of Speech and Hearing Disorders, 15:353, December, 1950.

largest group on a specific disorder. Considering the books and articles in all the other magazines, it would appear that the extent of research is quite broad.

The subjects and topics covered in the articles in the Journal are truly amazing as to their diversity. To begin with, nineteen separate studies were done in the field of psychology of stuttering alone.[31] A list of other topics covered included the following in relation to stuttering: saliva, laterality, brain potentials, serial identification of colors, blood differences, cardiovascular studies, diadachokinesis, rhythmokinesis, conditioned reflex, eye-movements, bilingualism, respiratory cardiac arrhythmia, sex differences, allergies, twinning, and endocrine malfunctioning.[32]

Also many studies have been done in combining research on one particular phase, such as Hill's reviews of research on Physiological[33] and Bio-Chemical[34] data. In fact each year seems to add more areas and more possibilities

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31. Fairbanks, op. cit., p. 49

32. Ibid., pp. 47-52.

33. Harris Hill, "Stuttering: I. A Review and Evaluation of Biochemical Investigations," Journal of Speech Disorders, 9:245-61, December, 1944.

for research in stuttering.

Narco-Synthesis-Therapy.

History. Unlike stuttering, Narco-Synthesis-Therapy, as defined in this paper, has a short history. In fact, its use parallels the modern period of stuttering research, beginning in the late 1920's. However, the first use of a narcotic agent for sedation in a mental illness was probably about 1870.[35] But it was not until 1882 that Greisinger[36] recorded the use of narcosis for sedation in cases of psychoses.

The next important step took place in 1920, when H. D. Palmer[37] used barbiturates for deep somnolence, which was actually prolonged narcosis, the forerunner of modern Narco-Synthesis-Therapy. However, the first overall successful use in dealing with mental patients with narcosis treatment was done by Klaesli[38] in Zurich in 1922. Somnifen[39] was used in these cases.

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35. S. Z. Orgel, Psychiatry: Today and Tomorrow, New York: Internatioanl Universities Press, 1946, p. 35.

36. Ibid., p. 35.

37. Loc. cit.

38. H. D. Palmer, and F. J. Braceland, "Six Years Experience with Narcosis Therapy in Psychiatry," American Journal of Psychiatry, 94:40, July, 1937.

39. Mixture of barbituric acid derivatives in glycerin-alcohol-water solution.

Various barbiturates were used in many other cases, but in 1926, Page and Coryllos[40] prepared and used Sodium Amytal for the first time. This experiment was done with animals.

Because of the success of these experiments, the E. J. Lilly Company developed Sodium Amytal and put it on the market in 1927.[41] Two years later Zerfas[42] used it for the first time with humans.

However, the important advance in Narco-Synthesis-Therapy came about in 1930, for it was in that year that W. J. Bleckwenn[43] used Sodium Amytal in the process that we now know as Narco-Synthesis-Therapy. Lindemann[44] followed with more experiments with the effect of Sodium Amytal in this therapeutic process. Subsequently, Nembutal, Evipan, and finally in 1934, Sodium Pentathol were used.[45]

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40. Palmer, and Braceland, op. cit., p. 42.

41. D. J. Sullivan, "Psychiatric Uses of Intravenous Sodium Amytal," American Journal of Psychiatry, 99:411, November, 1942.

42. P. T. Evans, Editor, Modern Practice in Anesthesia, New York: Harper and Brothers, 1949, p. 194.

43. W. J. Bleckwenn, "Narcosis as Therapy in Neuropsychiatric Conditions," American Journal of Psychiatry, 94: 1169, October 18, 1930.

44. E. Lindemann, "Psychopathological Effect of Sodium Amytal," Proceedings of Social Experimental Biology and Medicine, 28:864, 1931

45. J. F. Wilde, "Narco-Analysis in the treatment of War Neuroses," British Medical Journal, 2:4, June, 1942.

It was not until 1935, however, that Horsley[46] labeled the process of narcosis used with therapy as Narco-Analysis. He describes it thusly:

> A combination of light narcosis with intensive psychotherapy which seems to be effective therapeutically.[47]

Horsley experimented with many different drugs but he favored Nembutal and Sodium Amytal.

With the advent of World War II, the expansion of the use of Narco-Synthesis-Therapy came about. For in 1940 Sargent and Slater[48] used it in treating psychiatric cases in the British Army, as did Wilde.[49] The process used was similar to the present day method of combining narcosis with therapy.

However, it was Grinker and Spiegel[50] using Narco-Synthesis-Therapy with Air Force members that brought this process before the eyes of the world. Their use of Sodium Pentathol actually put that drug on a par with the older Sodium Amytal.

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46. John Horsley, "Narco-Analysis," Lancet, 230:556, December 10, 1935.

47. Loc. cit.

48. W. Sargent, and E. Slater, "Acute War Neuroses," Lancet, 239:2, July 6, 1940.

49. Wilde, op. cit., p. 4.

50. R. R. Grinker, and J. P. Spiegel, Men Under Stress, Philadelphia: Blakiston, 1945.

Grinker and Spiegel deserve special credit in describing the use of what they called Narco-Synthesis and the effects and results of that process.

Review of the literature.

Process. Narco-Synthesis-Therapy, or the same process under a similar name, has been put to various uses. The actual induction of the drug into the body (in this case Sodium Amytal or Sodium Pentathol) is much the same in most cases. Most psychiatrists follow in the manner prescribed by Grinker and Spiegel[51] for the use of Sodium Pentathol.

They state:

> A 2.5 to 5.0% solution is slowly injected intravenously until the appropriate stage is reached. ...the usual dose is 0.3 Gm. to 0.5 Gm.

The interview follows this induction and is usually started by the therapist, and the effects of the drug usually last from one to four hours.[52] With Sodium Amytal, a 10% solution of 3 to 6 grains in injected slowly intravenously[53]

The important point in recent literature on the subject is the place of the interview and the re-evaluation of the material.

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51. Ibid., p. 389.

52. L. S. Goodman, and Alfred Gilman, Pharmacological Basis of Therapeutics, New York: MacMillan, 1941, p. 138.

53. Sullivan, op. cit., p. 413.

Watkins[54] says:

> We cannot expect any single procedure to be effective in all cases, but many failures may be due to lack of total participation and subsequent reintegration.

White[55] puts it this way:

> The drug alone, is of little avail, unless the therapist takes an active part.

The literature on process and procedure is very nearly alike except for the change in dosage among drugs. The importance of the follow-up and re-evaluation, also is dealt with at great length.

Results and effects. Definite results have been determined in the experiments. Grinker and Spiegel[56] state these points that have been uncovered:

1. Frequently speech is in the past tense... emotion becomes intense...patient starts to relive it.

2. Patient often fully aware of doctor in the room...remarks are directed at him in reliving emotional situations...doctor becomes the person with him.

3. Abreaction is achieved with more hostility when presented in a safe place rather than overseas.

4. Material is not restricted to combat situation,

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54. J. G. Watkins, Hypno-Therapy of War Neuroses, p. 240.

55. R. W. White, The Abnormal Personality, New York: Ronald Press, 1948, p. 238.

56. Grinker, and Spiegel, op. cit., p. 391.

but brings in associations from the patient's past.

5. Quantitative values of interacting trends can be estimated as they are expressed in the same sessions.

These points were determined with servicemen but basically they should hold true in civilian life.

Narco-Synthesis-Therapy has been used and has had results in almost every kind of mental case known. Also it has been used with simple adjustment cases.

Lindemann[57] states its importance in this manner:

> Specific therapeutic application of drugs in psychiatry awaited the development of Narco-analysis during the past twenty years.

As for the drugs and their reactions:

> Sodium Amytal and Pentathol are among the most important pharmaceutical weapons in dealing with mental disorders.[58]

Literature, in the main, concerns itself with case histories, and their results. Grinker and Spiegel[59] list sixty-five descriptions of case studies with results and effects. These descriptions, however, are spread out over

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57. E. Lindemann, and Lincoln Clarke, "Modifications in Ego Structure and Personality Reactions under the Influence of the Effects of Drugs," American Journal of Psychiatry, 108:561, February, 1952.

58. Sol Levy, "Narco-Synthesis Immediately Following Insulin Shock," American Journal of Psychiatry, 108:610, February, 1952.

59. Grinker, and Spiegel, op. cit., pp. 14-405.

several years, but other writings concerning case studies usually include two or three cases of varying difference.

The results seem to show that more and more use is being made of Narco-Synthesis-Therapy with the exception of one statement that the author encountered.

> Sodium Amytal and Pentathol interviews are decreasing in popularity except for acute traumatic neuroses where there are now fairly well-established treatments.[60]

It is safe to say that the general literature does not indicate that trend. Most of the writings on Narco-Synthesis-Therapy on results usually deal with an experiment, the process of it, and the subsequent conclusions.

The literature on results or conclusions is quite similar to the writings on causation of stuttering in that it tends to isolate one test factor in such a way that the experimenter can decide the validity of that factor.

Extent of research. Research has been confined in this case mainly to articles in magazines, for very few books of psychiatry have much on Narco-Synthesis-Therapy, because of its relative newness.

But in various journals, psychiatrists have tested the effects of this process in cases ranging from psychological

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60. John B. Youmans, Medicine of the Year 1951, Philadelphia: Lippincott, 1951, p. 76.

change while under anesthesia[61] to induced psychosis.[62]

Some of the cases of the use of Narco-Synthesis-Therapy give an idea of the extent of its use. Articles have been written about the use of this process with amnesia, psychoses, neuroses, war neuroses, conversion hysteria, hysterical blindness, manias, and the various schizoid personalities.

Other studies have been made to observe the reactions of the body to this induction by drugs in an effort to see if there were any dangers connected with the process. There are definite dangers connected with it in some cases, but these will be dealt with in Chapter V.

And finally there are many different studies that use, successfully or not, many different drugs to put the person in a "twilight state". The various drugs mentioned are Sodium Amytal, Sodium Pentathol, Somnifen, Evipan, Ether, Cocaine, Hasheesh, Dial, and Ergotamine Tartrate. These in turn have been compared to each other and their effect in various cases.

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61. E. Lindemann, "Psychological changes in Normal and Abnormal Individuals under the Influence of Sodium Amytal," American Journal of Psychiatry, 89:1083-91, March, 1931.

62. Paul Hoch, "Experimentally Produced Psychosis," American Journal of Psychiatry, 107:607-11, February, 1951.

CHAPTER III.

THE PROBLEM OF STUTTERING

The problem of stuttering is hard to understand and hard to describe. It is spoken of by speech correctionists as well as by laymen as a speech problem, speech impediment, speech defect, speech disorder, speech handicap, etc.[1]

Backus[2] states:

> Stuttering, the conditions that produce it, and the conditions that accompany it, is a very complex phenomenon.

Villareal[3] distinguishes between stuttering as a problem and stuttering as a defect or a disorder. He explains the problem in this manner:

> Stuttering as a problem suggests the total configuration of tension and felt difficulty which brings the stutterer to the speech clinic and which it is the ultimate goal of the therapeutic effort to alleviate.

Nature

Description.

Although the average person is usually aware of what stuttering is, and although he has probably seen at least one

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1. Jesse J. Villareal, "Two Aspects of Stuttering Therapy," Journal of Speech and Hearing Disorders, 15:216, September, 1950.

2. Ollie Backus, Speech in Education, New York: Longman-Green Company, 1943, p. 199.

3. Villareal, op. cit., p. 215.

case of it, stuttering remains extremely difficult to describe, for as Van Riper[4] states:

> Stuttering, perhaps the most dramatic of all the speech disorders, is also the most difficult to describe...

Most descriptions must be qualified to such an extent that they tend to lose clarity in an effort to include all the manifestations.

Various descriptions have been set forth, however. Berry and Eisenson[5] describe it in this manner:

> The speech of the stutterer is characterized by a sudden interruption of its normal rhythm by... spasms which produce a repetition or a complete blocking of sounds.

Loren Reid[6] takes this view:

> By stuttering, the speech pathologist means... when an individual's fluency is interrupted by severe or prolonged blocks or tensions.

Johnson[7] describes a stutterer in this manner:

> Persons...who may be quite fluent by ordinary

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4. Charles Van Riper, op. cit., p. 265.

5. M. F. Berry, and Jon Eisenson, The Defective in Speech, New York: Crofts and Company, 1942, p. 215.

6. Loren Reid, "Some Facts about Stuttering," Journal of Speech Disorders, 11:5, March, 1946.

7. Wendell Johnson, "The Indians Have No Word For It," Quarterly Journal of Speech, 30:455, December, 1944.

> standards but who exhibit considerable strain, embarrassment and apprehensiveness with regard to such non-fluency as they do have. It is the stutterer's anxiety and strain, the fear and the effort with which he pauses or says 'ah', repeats sounds or prolongs them, that serve to distinguish him from the so-called normal speaker.

Solomon[8] describes is thusly:

> The term 'stuttering' is...used...for any degree of that special disorder of speech characterized by transient, temporary or intermittent blocks, breaks, or inhibitions of the rhythm of speech, leading to speech repetitions or speech blocks or both.

However, the description that seems to most adequately describe stuttering is the one that Van Riper[9] gives. It is as follows:

> A disorder characterized by blockings, repetitions or words, syllables, sounds, or mouth postures, all of which (together with the contortions or devices used to avoid, postpone, disguise, start or release the speech abnormality) produce interruptions and breaks in the rhythmic flow of speech.

Symptoms. The general descriptions of stuttering as were stated above, deal with much more than a simple interruption of speech. In most cases, they are describing

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8. Meyer Solomon, "Stuttering, Emotion and the Struggle for Equilibrium," Proceedings, American Speech Correction Association, Volume VI. Madison, Wisconsin, College Typing Company, 1936, p. 221.

9. Van Riper, op. cit., p. 265.

reactions to influences or pressures from within. The outward results of such influences or pressures take their form in various types of behavior. To the stutterer it is these outward manifestations or symptoms that form the affliction.

Van Riper[10] states:

> ...morever the great handicap in stuttering as felt by the stutterer lies in the appearance of symptoms which have become the source of personal and social discomforts.

These symptoms are classified in various ways. The clearest way, however, seems to be one in which the symptoms are separated into two groups. These two groups can be labeled as overt and implicit symptoms.[11]

Symptoms of an overt nature are those which are known to the stutterer and his auditors, and those of an implicit nature, known only to the stutterer himself.

Overt symptoms. If someone were to take a count of the various overt symptoms, the figure would undoubtedly run into the hundreds. Many of these symptoms have nothing to do with the speech, but are associated with grimaces, body movements, constriction of muscles, and stereotyped behavior that

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10. Ibid., p. 271.

11. Charles Van Riper, "Symptomatic Treatment of Stuttering," Proceedings, American Speech Correction Association, Volume VI. Madison, Wisconsin: College Typing Company, 1936, p. 110.

are brought about because of the speech problems.

Bender[12] lists eleven generalized symptoms. He states these as follows:

1. Gasping breathing
2. Spasms
3. Glottal catches
4. Tremors
5. Tonal rigidity
6. Atypical synchronistic movements of the larynx, abdomen, and thorax
7. General muscular tension throughout the body
8. Repetitions of sounds, words, and phrases
9. Speech blocks
10. Lack of rhythm
11. A general picture of nervousness.

Ainsworth[13] limits these major groupings to four. These are:

1. Starters
2. Avoidance mechanisms
3. Tensions
4. Breathing irregularities

By making sub groups under Ainsworth's groupings, it is possible to include all the various symptoms that are associated with stuttering. For instance, various starters would include noises, words, blinking, stamping, arm-swinging, 'forcing', head jerking, lip and tongue movements, panting, and pitch change.[14] Many of these reactions are caused by the

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12. James F. Bender, The Personality Structure of Stuttering, New York: Pitman, 1939, p. 11.

13. Stanley Ainsworth, Speech Correction Methods, pp. 82-3.

14. Ainsworth, op. cit., p. 82.

fear of the actual speech block.

The avoidances are reactions, such as: the use of synonyms, sentence rearrangements, long pauses, and other such devices, which are used to keep from stuttering. The tensions and breathing irregularities cover the rest of the field of these overt symptoms and they are pretty much self-explanatory. The only point necessary to be made now, is that sometimes these tensions cover a tremendous area. At times these tensions are in the extremities, such as the fingers or even the toes.

All these various symptoms are based on the person's fear of not being able to get started or to continue fluently.[15]

Implicit symptoms. The implicit symptoms or those not observable consist mainly of those attitudes and fears which bring about or are concurrent with overt symptoms.

These emotional reactions take odd forms at times. They also become intrenched in a person's thinking so that he never explores these basic concepts to examine them. The stutterer has a marked fear of certain words and certain speech situations.[16] This fear spreads to other words, and soon these become cues which remind him of previous troubles. This gives him a sense of insecurity concerning his whole

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15. Johnson, op. cit., p. 456.

16. Backus, op. cit., p. 206.

speech pattern. Also, there are various people with whom the stutterer feels competent. He soon forms opinions as to whether or not he will have fluency with each person to whom he speaks. The stutterer also tends to be a perfectionist to a great extent. Although he expects stuttering to occur, he still tries to avoid non-fluencies. He may also try some rehearsals before he has to speak. This, in turn, builds up the fear and expectancy of stuttering even more.

Many stutterers regard themselves as abnormal and inferior, and think that people will either laugh or turn away from them when they try to speak with them.

These emotional attitudes are actually symptoms of this problem of stuttering. They, however, are not noticeable to the average person who may be in conversation with him, but are likely to be noticed in a situation where a stutterer is stating his fears to someone in whom he may trust or confide.

Types. Types of stuttering can be interpreted in two ways; first, tonic and clonic spasms, and secondly, primary and secondary stages.

Ainsworth[17] describes the tonic and clonic spasms in this manner.

> There are two types of blocks. The tonic block is a complete stoppage of speech; whereas the

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17. Ainsworth, op. cit., p. 87.

> clonic block indicates repetitions of sounds, syllables, or words.

Originally, the repetitions and prolongations were designated by the terms stuttering and stammering, respectively. However, stammering fell into disuse, and the terms clonic and tonic type stuttering were used. Nevertheless, today it is generally recognized that both types appear in many stutterers.[18]

The other distinction of stuttering is that of primary and secondary stuttering. The consensus of opinion on the difference between these two is that in primary stuttering, the person is not aware of his non-fluency, or if he is, he does not fear it. This type is typical of the non-fluency exhibited in the child. The secondary stuttering state is reached when the person is aware of this non-fluency and fears the recurrence of it.

Robbins[19] describes them in this manner:

> Stuttering: infantile, primary, pseudo; a form of stuttering manifest by young children who have recently begun to stutter, in which the feeling of shame about stuttering is lacking.
>
> Stuttering: secondary; a chronic form...complicated by emotional conditioning and resultant fears of certain words and speech situations and unhealthy attitudes toward stuttering.

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18. Berry and Eisenson, op. cit., p. 215.

19. Samuel Robbins, A Dictionary of Speech Pathology and Therapy, Cambridge, Massachusetts: Sci-Art, 1951, p. 98.

These two terms are common in speech correction, yet there is a great amount of objection as to the use of these terms. Many feel that the so-called "primary" stage is merely the normal non-fluent speech stage, and that the "secondary" stage is stuttering.

Johnson,[20] the leading advocate against this labeling, states this view:

> The normal non-fluency of childhood is not a speech defect. The average child between the ages of two and five repeats sounds, words, and phrases forty-five times per 1000 words in free-play situations. This is the average for children. It is not stuttering. Stuttering is mainly distinguished by tension and fear, not by easy, unself-conscious repetitions or hesitations.

More people are beginning to take the attitude expressed by Johnson, because by labeling non-fluency as stuttering, it might possibly bring fear and tension to the child's mind.

Extent. There are no accurate tabulated figures as to the number of stutterers in the United States today, but estimates by Van Riper,[21] as well as others including

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20. Wendell Johnson, "Teaching Children with Speech Handicaps", 49th Yearbook of the National Society for the Study of Education, Chicago: National Society for the Study of Education, 1950, p. 177.

21. Van Riper, Speech Correction: Principles and Methods, p. 266.

Berry and Eisenson,[22] and Reid,[23] set the number at approximately 1,4000,000. This amounts to roughly one per cent of the entire population.

Johnson[24] says that six to ten out of every one thousand people are stutterers, while Van Riper,[25] Heltman,[26] and Reid[27] say one out of every one hundred.

As was stated before, the extent of this problem has very few limiting boundaries. It can be found in every area of the United States, in city or rural communities, and in hot or cold climates.

Comparative factors. There are many comparative factors, and ratios of affect that add to the complexity of the stuttering problem. Of course, in this respect much research has been done to try to determine those affected by this problem.

It is generally conceded that more boys stutter than

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22. Berry and Eisenson, op. cit., p. 217.

23. Reid, op. cit., p. 3.

24. Johnson, "Teaching Children with Speech Handicaps," p. 178.

25. Van Riper, Speech Correction: Principles and Methods, p. 266.

26. Harry Heltman, First Aids for Stutterers, 1943, p. 11.

27. Reid, op. cit., p. 3.

girls. West, Kennedy, and Carr[28] state that the ratio between boy and girl stutterers is from 3:1 to 8:1. Reid[29] expands this a little both ways and says that the ratios range from 2:1 to 10:1. Kopp[30] takes a more conservative view and sets the figure at 4:1.

Many authorities feel that proportionately there are more left-handed stutterers than left-handed non-stutterers, but Johnson[31] adds:

> ...research indicates that there is practically no difference between stutterers and non-stutterers with respect to handedness and eyedness.

Reid[32] specifies the difficulty of the testing of handedness like this:

> The difficulties of defining and testing handedness complicates the problem. Individuals do not fall into three clear cut groups of right-handed, left-handed, and ambidexterous.

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28. Robert West, Lou Kennedy, and Anna Carr, The Rehabilitation of Speech, New York: Harper and Brothers, 1947, p. 90.

29. Reid, op. cit., p. 4.

30. George Kopp, "An Organismic Approach to Stuttering," quoted by Lulu Johnson Alonso, "Theories, Specific Therapies, and Techniques for Use in Cases of Stuttering," Unpublished Master's Thesis, Michigan State College, East Lansing, Michigan, 1950, p. 161.

31. Wendell Johnson, et al., "The Development and Onset of Stuttering," Journal of Speech Disorders, 7:254, September, 1942.

32. Reid, op. cit., p. 4.

Berry[33] adds, however, that more stutterers are found in twinning families than in non-twinning families.

Causes

Review of physiogenic causation.

In Chapter II the various theories of causation of stuttering throughout history were discussed. It is now the purpose of the author to discuss the relative theories of causation that are currently accepted to some extent today.

As this paper is based on the assumption of a psychogenic causation of stuttering, the main interest will naturally fall along those lines. However, the fact remains that many in the field of speech pathology still favor the physiogenic causes.

In Alonso's study[34] various leaders and workers in the field of speech pathology answered her questionnaire as to causation in the following manner:

1. Neurological cause, twenty-eight yes and nine no.
2. Physiological cause, twenty-eight yes and fifteen no.
3. Lack of cerebral dominance, twenty-one yes and seventeen no.

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33. M. F. Berry, "A Common Denominator in Twinning and Stuttering," Journal of Speech Disorders, 3:56, March, 1938.

34. Alonso, op. cit., pp. 138-46.

4. Sidedness as a cause, twenty-two yes and thirteen no.
5. Heredity, twenty-six yes and thirteen no.

It may be added that these people did not necessarily feel that these were the main causes, yet they indicated that these should be included as causal factors.

A brief review of various physiogenic causes should then be stated.

Van Riper[35] states that one of the causes of stuttering results from a background of dysphemia. He describes dysphemia in this manner:

> By the term dysphemia we refer to an underlying neuro-muscular condition which reflects itself peripherally in nervous impulses that are poorly timed in their arrival in the paired musculature.

The original basis for this belief was set forth by Travis as a neurological theory. Van Riper[36] explains it in this manner:

> The neurological theory is variously stated, but its major tenets are that paired musculature used in speech does not receive properly timed nervous impulses from the various integrating centers in the Central Nervous System. This condition is thought to be brought about by interference of the thalamus, cerebellum, or the non-dominant hemisphere, with the integrations of the dominant half of the cerebral cortex. The stutterers are said to possess less unilateral cerebral dominance than

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35. Van Riper, Speech Correction: Principles and Methods, p. 269.

36. Loc. cit.

> normal speakers, and hence are more susceptible to breakdown.

Many people in speech correction label dysphemia as an unknown quality that brings on stuttering. They feel that there is some factor that makes stutterers different from non-stutterers but they are not sure of the nature of this factor.

In the classification of theories under dysphemia, Ainsworth[37] expands on the subject by describing it in this way:

> ...the stutterer is thought of as being somehow different from the non-stutterer. The exact nature of this difference seems not to be thoroughly understood, but according to these theories it is assumed to be along bio-chemical, neurological, or physiological lines and probably to be of an inheritable nature. Stuttering is a symptom of this constitutional difference.

Another way in which dysphemia, or this unknown factor is described, is by West.[38]

> Stuttering as dysphemia, is often assigned the descriptive and further limiting term, spasmophemia, to indicate that it is a dysphemia characterized by spasmodic interruptions of the rhythmic flow of speech...Spasmophemia is the condition; stuttering is the manifestation of that condition. Stuttering we can describe exactly: spasmophemia is as yet much shrouded in mystery. Stuttering is a phenomenon; spasmophemia is an inner condition.

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37. Ainsworth, op. cit., p. 82

38. West, Kennedy, and Carr, op. cit., pp. 84-5.

Another form of Travis' original theory is that of Bilateral Apraxia. This theory is stated by Bryngelson.[39] It is as follows:

> Bilateral Apraxia refers to an irregularity of neural integration in that portion of the Central Nervous System responsible for the flow of nerve impulses to the speech musculature.

Bryngelson goes on to say that these irregularities cause what is commonly known as stuttering. He also says that this state is an "atavistic throwback" in that it is a form of behavior which was supposedly manifest in early man.

The bio-chemical theory is also based on an unknown factor. Controversy on this theory is strong as many experiments have yielded a definite difference in the metabolism between the stutterer and the non-stutterer. On the other hand, many experiments have been conducted which showed no basic differences between these two groups as far as bio-chemical substances were concerned.

Hill[40] makes this point:

> The bio-chemistry of a particular individual may limit or influence the acquirement but does not determine the language that will be learned.

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39. Bryng Bryngelson, "Bilateral Apraxia, and its Symptom, Stuttering," quoted by Alonso, p. 181.

40. Harris Hill, "Stuttering: I. A Critical Review and Evaluation of Bio-Chemical Investigations," Journal of Speech Disorders, 9:258, September, 1944.

Yet Kopp,[41] who is probably the leading advocate of this theory, explains it in this manner:

> Etiology can be logically placed in the metabolism of the organism until research yields a more scientific definition. The definition necessarily does not state the specific metabolic difference, which is an unknown at this time. This is recognized as the bio-chemical theory of causation of stuttering.

One other factor should be taken into consideration as far as physiogenic causation is concerned; and that is the hereditary factor.

Greene[42] states it this way:

> Stuttering is a somatic manifestation of an emotional disorder based on a definite psychobiologic variability involving the organism as a whole. Evidence strongly suggests that there is a constitutional factor present which predisposes the individual to emotional instability. This appears to be an hereditary factor.

Van Riper[43] summarizes the possibilities of these theories by citing the following findings.

They are:

1. The tendency toward stuttering seems to be inherited.

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41. Kopp, op. cit., p. 164

42. J. S. Greene, "Functional Speech and Voice Disorders," Journal of Nervous and Mental Diseases, 95:301, March, 1942.

43. Van Riper, Speech Correction: Principles and Methods, p. 271.

2. The stutterer is often more poorly coordinated in swift or rhythmic movements of the speech musculature during silence.

3. The stutterer exhibits metabolic and biochemical differences.

4. The stutterer frequently shows confusion in handedness and other peripheral signs of central laterality.

5. The brain waves of stutterers differ from those of non-stutterers.

Psychogenic causes.

Psychogenic causation of stuttering is based on the disorder arising from mental attitudes, processes, or conflicts, rather than from organic defect or malfunctioning of neurological or physiological mechanisms. This seems to be the more prevelant hypothesis today.

West[44] states:

> As to whether stuttering is physiogenic or psychogenic it is probably safe to say that the majority of the authors in the field would place it in the latter category.

However, like the adherents of physiogenic causation, those who believe in psychogenic causative factors have various theories as to what causes the stuttering. Although many authors have various theories there consistently appear two general categories which are usually referred to and to

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44. West, Kennedy, and Carr, op. cit., p. 84.

which most correctionists ascribe. These two theories are: that stuttering is caused by an emotional or neurotic conflict, and that stuttering is based on a developmental or semantogenic theory.

These two will receive most of the attention in this paper, but some of the other psychogenic theories will be stated as a general supplement to the main two causation theories.

Neurotic or emotional causation theories. This group of theories, although in the same category, take various forms and follow different patterns.

Ainsworth,[45] who classifies theories of causation into three groups; dysphemic, developmental, and neurotic, has this to say about the popularity of the neurotic theory.

He states:

> The point of view that stuttering is a symptom of a psychoneurotic condition is probably the most widely held theory, particularly in the medical field.

Another instance of the popularity of the emotional conflict or neurotic theory is cited by Backus and Beasley.[46] They base the symptoms of stuttering on a disturbance of

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45. Ainsworth, op. cit., p. 82.

46. Ollie Backus, and Jane Beasley, Speech Therapy with Children, Cambridge, Massachusetts: Riverside Press, 1951, p. 69.

interpersonal relationships, but also add that there is relatively general agreement among workers that stuttering is caused by emotional conflicts, of which the disturbances of interpersonal relationships is an example.

This emotional conflict or maladjustment may be slight or serious. Ainsworth[47] explains the range which appears in neuroses.

He describes it in this manner:

> Psychoneurosis (or neurosis) may be defined as an emotional maladjustment which results in or involves deviate behavior...it is intended to include milder states in addition to well developed hysterical anxiety, neuraesthenic, and compulsive conditions.

Another way of describing the range of maladjustment is stated by Berry and Eisenson,[48] who go even farther than Ainsworth in their range of effect.

They state:

> The psychological bases of stuttering extend all the way from a simple maladjustment to the speech situation with its attendant complexes, loss of security, and fear reactions, to severe mental conflicts resulting in major psychoses or psychoneuroses.

As neuroses are merely an exaggeration of normal traits and reactions, it can be seen how stuttering is an exaggeration

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47. Ainsworth, op. cit., p. 82

48. Berry and Eisenson, op. cit., p. 333.

of hesitatnt speech. There are many situations in which normal speakers in emotional states of excitement have nonfluencies. It would then appear if a person who lives, or has lived in a situation of anxiety, insecurity, or uncertainty, he would have many breaks in fluency so as to interfere with communication.[49]

It can easily be seen that these various states of emotional conflict naturally would have a great bearing on the fluency of speech.

Heltman[50] offers this:

> It is not strange that anything which frightens the child or keeps him continually or frequently in a state of anxiety should make his speech more difficult than usual.

Gifford[51] also believes that stuttering is a psychological problem, one of emotional maladjustment, and that it involves the total personality.

Dr. Emil Froeschels[52] believes that stuttering is a neurosis, not only in adults but in children and is based on

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49. Van Riper, Speech Correction: Principles and Methods, p. 273.

50. Heltman, op. cit., p. 35.

51. Mabel Gifford, quoted by Eugene Hahn, Stuttering: Significant Theories and Therapies, Stanford: University Press, 1943, p. 41.

52. Elly Sittig, "Reply and Rejoinder," American Mercury, 64:253, February, 1947.

the belief of fear of imaginary difficulties in speech.

From the discussion, it can be seen that if the emotional or neurotic theory is followed, then the stuttering manifestations are merely a sign of a deeper anxiety or conflict. Hesitant speech reflects this underlying anxiety.

The stuttering problem then is, according to this theory, based on a different problem and to alleviate the former, the latter must be resolved. Ainsworth,[53] explaining this group of theories, points out this idea.

He states:

> The feature which distinguishes this group of theories is that stuttering is thought of as a symptom growing out of another disorder, and that when this 'functional' disorder is removed, stuttering will disappear.

In judging these statements, it becomes necessary to consider the fact of the association between non-fluency and tense or emotional situations. It is on this point that Eisenson[54] offers this consideration.

He describes it in this manner:

> In general, however, we may say that if the disorder in speech is associated with disturbances which are basically emotional, if the case history of the patient reveals a psycho-neurotic personality, if the patient's difficulty fluctuates and is

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53. Ainsworth, op. cit., p. 83.

54. Jon Eisenson, The Psychology of Speech, New York: Crofts, 1946, p. 136.

> concurrent with emotional rather than physical disturbances, the disorder is fundamentally psychogenic.

Semantogenic or Developmental. Because of various doubts as to the basis of stuttering being due to emotional conflict or physiogenic cause and because of various undeniable factors in the development of stuttering, many speech correctionists believe in a semantogenic or developmental theory of stuttering.

Ainsworth[55] defines it this way:

> In this group are the theories which agree on the following basic assumptions: the stutterer is not inherently psychologically or constitutionally different from the normal speaker, he develops stuttering speech because of situations which occur during his development.

The chief exponent of this theory is Wendell Johnson. His work is generally accepted in the field of speech correctionists and the work that he and his associates have done consistently back up his assumptions.

Johnson[56] describes the problem of stuttering as a developmental process. To begin with, each child as he learns to speak has a number of repetitions, on the average, some forty-five out of every thousand words. These are

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55. Ainsworth, op. cit., p. 82.

56. Wendell Johnson, Spencer Brown, James Curtis, Clarence Edney, and Jacqueline Keaster, Speech Handicapped School Children, Chapter V. pp. 179-257.

normal hesitations and non-fluencies and in ninety-nine per cent of the children are not called to the child's attention. The child develops and these non-fluencies decrease as he grows toward adulthood. However, in the other one per cent, the parents become anxious and worried about these non-fluencies and promptly proceed to give the child instructions as to how to improve his speech. At once, the child feels that these hesitancies are wrong and tries to correct them. Only, by trying, he becomes more tense and more conscious of his speech and thereby increases the non-fluencies, which in turn, give the child more anxiety and soon a vicious cycle ensues. In connection with this, the more the parents urge the child to "talk right", the more frantically and laboriously he tries.

Soon teachers, parents, and others appeal more and more for "proper" speech and show their anxiety to the child. This results in the child's own evaluations becoming more disturbed. He then proceeds to the point where he is unable to speak non-fluently in a normal manner and hesitates to hesitate or pause in speaking or have any non-fluencies without severe anxiety.

This also leads to a change in the behavior of the person that did the labeling. Not only does the child react as a stutterer, but the parents or teachers respond to him at all times, as if they considered him a stutterer. This, in turn, sets another pattern in motion, in which the parents

regard the child as a stutterer as well as the child, himself, feeling that way. The child then, in his speech, reacts to any non-fluency as stuttering and his parents and friends respond similarly.

This is a generalized and shortened description of this developmental process. It can also be described as a semantogenic disorder, in that the person reacts to the semantics or meanings and implications of language. In this instance the term stuttering is of main significance, because the person wishes to avoid being labeled as having that disorder.

By assuming the developmental theory of stuttering, the emotional conflict or maladjustment comes after the stuttering has been diagnosed by someone else.

Wischner[57] concludes:

> Stuttering behavior is learned and a basic secondary (acquired) motivational component in stuttering behavior is anxiety or anxiety drive.

Many authors emphasize the various aspects of Johnson's precepts. The principle of labeling normal non-fluencies as stuttering is called by Heltman[58] as possibly the commonest

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57. George Wischner, "Stuttering Behavior and Learning: A Preliminary Theoretical Formulation," Journal of Speech and Hearing Disorders, 15:327, December 1950.

58. Harry Heltman, "Remedial Training for Speech Deviates in the Elementary School," Elementary School Journal, 47: 283-4, January, 1946.

cause of the onset of the disorder. He also puts a great deal of emphasis on the responsibility of the parents in how they handle the child as a determining factor in this disorder.

The vicious cycle in stuttering is reiterated by West, Kennedy, and Carr,[59] in that the occurrence of the spasm causes the person greater anxiety than he normally otherwise experiences, which in turn, causes his speech to be less effective. In relation to this, and as a supplement, Heltman[60] adds:

> Consequently in his attempt to avoid or prevent the stumbling speech, he succeeds most effectively in preventing any speech, good, bad, or indifferent, for such extreme intervals of time that the listener, of necessity, is conscious of the disorder.

Johnson[61] cites this as one of the reasons to disregard physiogenic causation theory.

He concludes:

> Many physiological, neurological, bio-chemical and anatomical studies have been made comparing stutterers to non-stutterers, and the net result of them has been that no organic or physical cause of stuttering has been demonstrated.

There are certain basic factors which are determinants for this judgment.

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59. West, Kennedy, and Carr, op. cit., p. 97.

60. Heltman, op. cit., pp. 284-5.

61. Johnson, Brown, Curtis, Edney, and Keaster, op. cit., p. 184.

They are, according to Johnson:[62]

1. The average stutterer stutters on only ten per cent of the words he speaks.

2. Most stutterings last only one or two seconds or less.

3. No two stutterers perform their stutterings in exactly the same way...and any one stutterer varies somewhat in manner of performance from time to time.

4. There are different times of onset.

5. Some stutterers "outgrow" the disorder.

6. Stuttering has been eliminated by treatment involving no change of organic condition.

7. Practically all stutterers can sing, or speak in time to almost any rhythm,..talk to themselves, or to pets; whisper, shout, or read in chorus with practically no stuttering.

8. More stuttering occurs on words in the following instances: words that are nouns, verbs, adjectives, and adverbs; begin sentences; words that are longer than the average word; and words that begin with consonants rather than vowels.

9. Various studies have been conducted in which no difference was found between stutterers and non-stutterers in ability to perform rapid, or rhythmical movements of the lips, tongue, jaw, and breathing mechanism. There also was found to be no difference in measurements of heart rate, blood pressure, and basal metabolism. These studies also support the view that there is no difference in any significant sense with respect to handedness.

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62. Ibid., pp. 186-9.

With these data in mind, the developmental process as the cause of stuttering seems quite tenable, as the physiogenic factors cannot account for all these variables.

Other psychogenic causes. One of the most popular theories of causation supported by laymen, is that stuttering is caused by imitation. Although some speech correctionists name imitation as a cause, instances of this type are few in number. Van Riper[63] found only two cases out of two thousand in which imitation could be said to have a large amount of influence in the case. Heltman[64] states that stuttering is not likely to be picked up through imitation.

Stuttering as a bad habit is strongly proposed by Knight Dunlap[65] who says, in effect, that stuttering originally is a disordered condition which soon becomes the sustaining cause or habit, and soon other sustaining causes appear. However, this theory does not have as much support today as it did in the early 1930's.

In an explanation of why more boys stutter than girls, the possibility of stuttering developing from a fear

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63. Van Riper, Speech Correction: Principles and Methods, p. 276.

64. Heltman, First Aids for Stutterers, p. 35.

65. Knight Dunlap, "Stammering, Its Nature, Etiology and Therapy," Journal of Comparative Psychology, 37:188, June, 1944.

of using obscene words, has been offered.[66] This theory may be considered as a factor in a remote sense, but certainly not as a cause in itself.

Another interesting theory or main factor in the causation of stuttering is the repressed hostility factor, expressed by Abbott.[67] He feels that the person does not wish to lose his stuttering pattern and that the stutterer has hostile feelings against his listeners. In Alonso's[68] work, twenty people felt that the stutterer wished to stutter, and eighteen disagreed. However, many felt this wish was on the subconscious level.

Bleumel[69] offers an inhibitory theory which is stated like this:

> ...stuttering arises when the conditioned response of speech is inhibited by some traumatic experience, and the inhibition itself is conditioned to certain word cues or features of the speech situation.

Therapy

Although the cause of stuttering is a highly debatable subject and there is not a great deal of agreement as to

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66. James F. Bender, "Do You Know Someone Who Stutters?" Scientific Monthly, 59:211. September, 1944.

67. James Abbott, "Repressed Hostility as a Factor in Adult Stuttering," Journal of Speech Disorders, 12:428-30, December, 1947.

68. Alonso, op. cit., p. 56.

69. C. S. Bleumel, quoted by Van Riper, Speech Correction: Principles and Methods, op. cit., p. 329.

causation; the therapeutic techniques are to a great extent in agreement.

Van Riper[70] states:

> ...when the actual therapies now in use are scrutinized, one is impressed by the large number of similar methods used in common by the majority of speech correctionists; terminologies, emphasis, and theoretical justifications differ: the activity remains the same.

This, which will follow then, will be a brief presentation of the basic concepts of therapy.

Purpose.

The basic aims of a therapeutic program are very similar. Although many correctionists differ in their subgoals and methods, there are probably but two basic aims of therapy.

These are:

1. To make the stutterer's overt behavior more acceptable.
2. To bring about a better personality adjustment of the stutterer.[71]

Procedures and practices

It is when the procedures or methods of therapy are surveyed, that differences are observed. To summarize these

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70. Van Riper, Speech Correction: Principles and Methods, p. 269.

71. Ainsworth, op. cit., p. 85.

approaches, the following categories will serve as the basis for the discussion.

1. Physical training or hygiene.

2. Modification or removal of symptoms.

3. Psychological or emotional adjustment.

Physical training or hygiene. General health should be stressed in any kind of corrective speech therapy. In order to carry out any kind of intense program in speech correction enthusiasm and energy is needed. It then is necessary for a person to be in good health so as to carry out the program and to keep from becoming tired or fatigued and falling back into old habits and practices.[72]

General bodily relaxation must also be practiced by the patient. Through his stuttering, he has probably been in a constant state of tension, so therefore he must be trained in relaxation.

West, Kennedy, and Carr[73] feel that one of the first things that the stutterer should do is appraise his health habits. He must realize the causal relationship between the physical fitness and stuttering, and plan his health program as part of the general program.

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72. Wendell Johnson, "The Indians Have No Word For It," p. 464.

73. West, Kennedy, and Carr, op. cit., p. 385.

Modification or removal of symptoms. The stutterer arrives at the speech clinic with the attitude of wanting to be "cured". He may be disappointed to find out that his abnormality may be modified only to the degree that he will be able to live a normal life with it. The removal of symptoms is one of the main tasks of the therapist.

Van Riper[74] offers this:

> ...morever the great handicap in stuttering as felt by the stutterer lies in the appearance of symptoms which have become the source of personal and social discomfort.

The basic aim of this part of the therapy is to teach the person how to stutter in a way that does not interrupt the flow of speech.[75] This can be done in several ways. The person should be convinced he can speak normally, this should be followed by removal of his bodily and facial concomitants that accompany the spasms. Thirdly, the person should practice his own stuttering pattern so that he understands it, and is able to modify it. The fourth and most important step is getting the person to adopt a streamlined pattern of non-fluency. This practice should eventually

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74. Charles Van Riper, "Symptomatic Treatment of Stuttering," Proceedings, American Speech Correction Association, Volume VI. Madison, Wisconsin, College Typing Company, 1936, p. 110.

75. Charles Van Riper, "To the Stutterer as he Begins his Speech Therapy," Journal of Speech and Hearing Disorders, 14:305, December 1949.

reduce the uncontrolled stuttering and lead the person to controlled non-fluency.[76]

Psychological and emotional adjustment. This, although used in the first two phases, is the culminating and most important factor in therapy and constitutes an entity in itself in the program. Mental hygiene is a very vital factor in the program of adjustment.

Clark[77] defines mental hygiene in this manner:

> Mental hygiene concerns itself with the prevention and correction of emotional maladjustments and hostile attitudes through re-education and orientation.

Johnson's[78] semantic therapy would form an integral part of this overall mental hygiene aspect. The attitude changes are brought about by alterations of evaluations, opinions, and beliefs or word concepts and attitudes regarding the stutterer's general nature and value.

Another point to be considered is that the stutterer should do the changing and adjusting himself with the help and guidance of the therapist.

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76. Johnson, "The Indians Have No Word For It," pp. 462-3.

77. Ruth Clark, "Supplementary Technique to Use with Secondary Stutterers," Journal of Speech and Hearing Disorders, 13:132, September, 1948.

78. Johnson, "The Indians Have No Word For It," p. 462.

Cypreansen[79] suggests the use of non-directive counseling so that the person can realize that he, himself, is doing the changing and that the therapist is not making him readjust.

Another form of therapy is offered in the use of the psychodrama.

As Honig[80] states:

> Psychodrama, or something that took place during the psychodrama, has been of significant value in helping the stutterer to face environmental stresses, which might have precipitated stuttering, and has been an excellent medium for re-educating and adjusting him to his environment.

Backus and Beasley[81] summarize the whole action of therapy in this manner;

> Treatment for stuttering should be concerned with reducing conflicts along with accompanying anxiety, with changing evaluation of self in relation to others, with developing social skills, with modifying mechanics of speech production in the direction of more acceptable patterns.

Finally, it should be said that the most important single item in therapy upon which all other actions are based is the rapport between the clinician and the patient.[82]

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79. Lucille Cypreansen, "Group Therapy with Adult Stutterers," Journal of Speech and Hearing Disorders, 13:318, December, 1948.

80. Phoebe Honig, "The Stutterer Acts it Out," Journal of Speech Disorders, 12:109, March, 1947.

81. Backus and Beasley, op. cit., p. 69.

82. Bender, "Do You Know Someone Who Stutters?" p. 225.

This basic factor, if not considered, will definitely hamper the process and greatly modify the prognosis.

Place of the case history and background.

As yet the case history or background of the stutterer entering the therapeutic program has not been discussed. In Alonso's[83] study forty-four out of the forty-six correctionists answering stated that there was a definite need for it.

Types. Ainsworth[84] states that there are two types of histories which can be used: the Questionnaire and the Interview. The second is the best to use if possible, because of the individual responses to it.

He lists the following information which should be included:

1. Routine identification
2. Description of deviation
3. Personal data
4. Developmental data
5. Medical history
6. School history
7. Home environment
8. Immediate family history
9. Additional family history
10. Summary, Comments, and Recommendations

83. Alonso, op. cit., p. 93

84. Ainsworth, op. cit., p. 19.

Autobiography is often suggested as a means of developing case histories. In this way a person may put down certain attitudes or express feelings that may not appear in other types of history. It is this phase that presents the problem to the therapist. He must endeavor to find out what factors, feelings, emotions, and attitudes are in the person's mind in connection with stuttering.

Importance. The importance of the case history should not be underestimated. This case history seems to be an essential tool in helping to evaluate and determine what kind of therapy the therapist will use on the individual stutterer. To do an adequate job in helping the stutterer readjust, it would seem necessary to know just what factors have influenced the person's life up to the point of his entering the speech clinic. It should also be necessary to determine how he reacted to these influences.

The use of case histories or background material is essentially connected with the first task of the speech therapist.

West, Kennedy, and Carr[85] state:

> The first task of the therapist in speech rehabilitation is to analyze the undesirable elements of the defective's speech in the attempt to track them back to their ultimate causation ...a thoroughgoing investigation as to the cause

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85. West, Kennedy, and Carr, op. cit., p. 9.

> of the defect should be completed before a decision is made as to corrective devices to be employed.

It is definitely important to obtain as much information about the stutterer as possible, regardless of the method employed.

Van Riper[86] describes it in this manner:

> It is easily seen...that a thorough knowledge of the speech defective's personality and history is vital to successful treatment.

Methods of obtaining the information. In obtaining the information, the therapist can use a number of means. The interview, questionnaire, and autobiography are three main types to be used. It is not necessary here to try and determine if one of these is better than the other, or if there is some other type or form or method to be used. All, if necessary, should be used in an effort to get as much information as possible.

One of the main problems in obtaining information is the fact that many times the person does not wish to release strong emotional factors or feelings of hostility. He also wishes to protect his self-respect in many cases, and feels that by admitting certain fears and timidities he will lose it. Often the person is actually unaware or at least cannot express his real feelings at that time.

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86. Van Riper, Speech Correction: Principles and Methods, p. 32.

To gain this valuable material, various methods have been tried. Psycho-analysis has been considered but in Alonso's[87] study only eighteen were in favor of using it, and nineteen against it. In most cases psycho-analysis would be used for the whole therapeutic process. As there are a limited number of people who can use psycho-analysis, the prospect of this method would be diminished.

Hypnosis, according to Alonso[88] was used by only five of the people answering, while thirty-five did not use it. The use of hypnosis also must be limited because it is difficult to use, and because there are many people who are resistant to it.

At best, the free conversation interview and observation of the patient seem to be about the easiest and quickest ways of procuring a great deal of information, but it still does not obtain various deep feelings and attitudes which are so important to the eventual outcome of the whole program.

It is because of the problem of finding suitable means of obtaining information, that Narco-Synthesis-Therapy may be considered of use in this problem. The value of this process can be determined by considering certain features of

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87. Alonso, op. cit., p. 103.

88. Ibid., p. 104.

it, as well as evaluating its usefulness by making comparisons between stuttering and emotional and mental disorders.

Therefore, the next subject to be discussed is that of Narco-Synthesis and its therapeutic results and implications. This will be approached from the standpoint of its possible use, so that the factors concerned with its application in stuttering can be examined.

CHAPTER IV

DISCUSSION OF NARCO-SYNTHESIS

Description

The process of Narco-Synthesis, as used in this paper, is concerned with the actual induction of a state of semi-narcosis, and its effects on the patient. The therapy, therefore, in this process, is a separate entity. It is the therapeutic element that distinguishes the whole process from various other programs which use a narcotic agent.

The effects of Narco-Synthesis resemble a waking state in which receptivity and suggestibility are present but the person induced with the drug is less guarded and freer in his remarks and answers made to comments and questions.

Curran and Guttman[1] offer this as the main reason for its use.

They state:

> The main indication for Narco-Synthesis is a psychogenic symptom or syndrome whose origin and nature are not obvious to the doctor or the patient after a reasonably extensive inquiry and ordinary persuasion.

Process.

Drugs used. Although many drugs are used for the process of Narco-Synthesis, this paper's primary interest

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1. Desmond Curran, and Eric Guttman, Psychological Medicine, Baltimore: Williams and Wilkins, 1943, p. 167.

lies with Sodium Amytal and Sodium Pentathol.[2] However, the various other drugs that have been used should, at least, be mentioned.

Horsley[3] experimented with Somnifen, Sodium Soneryl, Nembutal, and a combination of Evipan and Overtin, as well as Sodium Amytal. Stungo[4] lists Evipan Sodium, Narconumal, Hexanastal, Hypoloid Soluble Hexabarbitone. Others mentioned Ergotamine Tartrate also.

It might be said here that all drugs which produce a change in the integrative function of the ego are of interest to the psychiatrist.[5]

Sodium Amytal. Sodium Amytal (Anhydrous iso-amylethyl barbiturate) is a white crystalline substance which is soluble in an alkali.[6] It is a short acting barbiturate, the effects of which last from two to eight hours. A short

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2. See Chapter I. p. 4.

3. John Horsley, "Narco-Analysis," Lancet, 230:556, December 10, 1935.

4. E. Stungo, "Evipan Hypnosis in Psychiatric Outpatients," Lancet, 240:508, April 19, 1941.

5. Erich Lindemann, and Lincoln Clarks, "Modifications in Ego Structure and Personality Reactions under the Influence of the Effects of Drugs," American Journal of Psychiatry, 108:563, February, 1952.

6. W. J. Bleckwenn, "Narcosis as a Therapy in Neuropsychiatric Conditions," Journal of the American Medical Association, 95:1168, October 18, 1930.

acting barbiturate is probably the best to use because it causes the greatest loss in inhibition.[7]

This loss of inhibition is also accompanied by a state of passive receptivity and an elimination of fear. The drug brings about these conditions by exerting a distinct effect on the Central Nervous System.

Wolff[8] points this out:

> This drug produces a depression of the higher cortical levels, lowers the control over the other parts of the Central Nervous System, and in this way has an anti-inhibitory effect.

Probably another main consideration in the preference of Sodium Amytal is stated by Henderson and Gillespie.[9] They feel that although many hypnotics are used, Sodium Amytal has the reputation of being the safest. Probably the chief reason for this is the fact that the toxicity of Sodium Amytal is practically negligible. The drug, after entering the body, is almost completely oxidized by the liver

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7. Paul H. Hoch, "Narco-Diagnosis and Narco-Therapy," Yearbook of Neurology, Psychiatry, and Neuro-Surgery, Chicago: Yearbook Company, 1949, p. 476.

8. Werner Wolff, The Threshold of the Abnormal, New York: Hermitage House, 1950, pp. 277-8.

9. D. K. Henderson, and R. D. Gillespie, A Textbook of Abnormal Psychology, p. 419.

and is eliminated from eighteen to thirty hours after its induction.[10]

Sodium Pentathol. This drug, known chemically as Sodium ethyl (1 methyl butyl) thio-barbiturate,[11] is very similar to Sodium Amytal. It is of even shorter duration, lasting from one to four hours in length. Grinker and Spiegel[12] strongly advocate its use in their dealings with combat fatigued airmen in World War II, because of the short time element concerned. Another factor which favors Sodium Pentathol is its relative easiness to administer.[13] There is relatively little difference in the administration of Sodium Amytal and Sodium Pentathol, but in some cases the effects of Sodium Pentathol on patients are more easily controlled, for it results in a more relaxed state on the part of the individual.[14]

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10. D. J. Sullivan, "Psychiatric Uses of Intravenous Sodium Amytal," American Journal of Psychiatry, 99:414, November, 1942.

11. Harry Solomon, and Paul Yakovlev, Editors, Manual of Military Neuro-Psychiatry, p. 529.

12. R. R. Grinker, and J. P. Spiegel, Men Under Stress, p. 389.

13. J. A. Hadfield, "War Neuroses," British Medical Journal, 1:321, February 28, 1942.

14. John Davis, Rehabilitation: Its Principles and Practices, New York: A. S. Barnes, 1946, pp. 42-3.

Another advantage is that Sodium Pentathol is safer and less toxic than the other drugs, as it is more easily eliminated.[15] The liver, again, is the main agent in oxidation.

Methods of induction. There are three possible ways in which to administer these drugs; orally, rectally, and intravenously. As the first two are seldom used in the situations which are being discussed in this paper, the method of intravenous injection will be the main interest in this section.

The injection of Sodium Anytal and Sodium Pentathol is essentially the same. However, there may be slight differences in the induction of these two drugs in certain cases. Also there are some differences in method by various authors in the use of one particular drug. Probably the main differences occur in the amount or dosage of the barbiturate.

Sodium Amytal. To arrive at the proper depth of narcosis, 0.3 to 0.5 grams are injected in the vein in front of the elbow until the patient is relaxed, sedated, or calm.[16] The drug is injected in the ante-cubital[17] region in most

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15. J. F. Wilde, "Narco-Analysis in the Treatment of War Neuroses," British Medical Journal, 2:4, June, 1942.

16. Phillip Polatin, and Ellen Philtine, How Psychiatry Helps, New York: Harper and Brothers, 1949, p. 180.

17. The Ante-cubital (Latin-ante-before, cubital-elbow) region is a triangular hollow on the anterior surface of the elbow.

cases.[18]

It is recommended that the drug be diluted in a larger volume of distilled water than that provided in the original ampoule which is supplied with the drug.[19]

Usually a 10% solution of Sodium Amytal is indicated, which is injected at the rate of about one cc.[20] per minute.[21]

Solomon and Yakovlev[22] describe the process in this manner:

> The patient is isolated in a semi-darkened room, and told that the injection will make him sleepy. The drug is injected in the ante-cubital region, while the patient counts backward from one hundred. Shortly after counting becomes confused, and before sleep occurs, the injection is discontinued.

Sodium Pentathol. The process of induction, as was stated before, is much the same with Sodium Pentathol. However, in the case of Sodium Pentathol, a 2.5 to 5% solution is injected, which contains from 0.3 to 0.5 grams of the drug.[23] Goodman[24] feels that only 0.1 to 0.3 grams of Pentathol is

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18. Sullivan, op. cit., p. 413.

19. Solomon and Yakovlev, op. cit., p. 555.

20. One c.c. stands for one cubic centimeter, which is equal to about one drop of water as far as capacity is concerned.

21. Sullivan, op. cit., p. 413.

22. Solomon, and Yakovlev, op. cit., p. 529.

23. Grinker, and Spiegel, op. cit., p. 389.

24. Louis S. Goodman, and Alfred Gilman, Pharmaceutical Basis of Therapeutics, p. 128.

needed. However, these are only averages and may represent different cases which were being handled. The majority of sources favor the heavier dose. This injection is made in the median basilic vein[25] at the rate of 0.1 gram per minute, as the person counts backwards from one hundred.[26] The patient is given the drug until counting ceases and deep breathing starts.[27]

It might be added that both of these drugs are unstable and they should be shaken gently and injected promptly.[28]

Surrounding action and situation. It has already been mentioned that the patient is placed in a semi-darkened room for this procedure. However, this is but one of the practices in performing this procedure.

In most cases the therapist can merely start out by allowing the patient to speak. Some of these patients immediately start a flow of conversation, but the majority require verbal stimulation.[29] In many cases, this stimulation is obtained by merely asking leading questions. At other times

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25. The median basilic vein arises at the upper part of the bend of the elbow, and is one of the prominent veins in the ante-cubital region.

26. Grinker, and Spiegel, op. cit., p. 390.

27. Ibid., p. 393.

28. Solomon, and Yakovlev, op. cit., p. 557.

29. Edward Strecker, and Kenneth Appel, Psychiatry in Modern Warfare, New York: MacMillan, 1945, p. 39.

the patient is asked to describe a traumatic or a troublesome situation.

In a good number of cases, the patient acts out the traumatic experience. The room and the people in it, then become part of his own experience which he is re-enacting. The people in the room act accordingly, trying to give a stronger impression of the real situation.[30]

In some cases the procedure is initiated by the therapeutic team. A general traumatic experience is described with accompanying sound effects and appropriate conversation. This is used especially if a specific traumatic experience is not known.[31]

In the case where the therapist knows what experience, chain of influences, or even the general circumstances under which the mental disturbances occurred, a specific situation is set up and explained to the patient, as if he were experiencing it.[32] The whole situation is then turned over to the patient with the instructions to start talking.

Neuro-physiological effects. The actual effects of the drugs, as far as the psychological aspects are concerned, are based on a neuro-physiological basis.

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30. Solomon, and Yakovlev, op. cit., p. 529.

31. Strecker, and Appel, op. cit., p. 40

32. Grinker, and Spiegel, op. cit., p. 280.

The process of reducing the inhibitory factors is brought about by the dilation of the cerebral blood vessels which cause a decrease in the blood pressure and decreases the oxygen consumption of the brain tissue. This produces a temporary depression of activities of the cerebral cells, which in turn releases the patient from a certain amount of inhibition.[33]

The proper depth, as well as being determined by confused counting and heavy breathing, can also be determined by the tonus of the eyelids, and pupillary reflexes.[34]

Other manifestations of physical reactions are seen also. The body becomes increasingly tense and rigid, the eyes open wider, the pupils dilate, and the skin becomes covered with perspiration.[35] This, however, subsides in most cases.

A thorough description of neuro-physiological action is described by Mulinos.[36]

He states:

a. Reactivity to sensory stimuli is reduced.

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33. Sullivan, op. cit., p. 411.

34. Solomon, and Yakovlev, op. cit., p. 528.

35. Ibid., p. 529.

36. M. G. Mulinos, Pharmacology, p. 193a.

b. Conditioned reflexed disappear...certain degrees of reactivity to selective stimuli remains.

c. Deep and tendon reflexes are diminished or abolished.

d. Skin reflexes evoking muscular responses are retained.

e. Bulbar reflexes are retained.

f. Equilibrium reflexes are depressed or abolished.

g. Motor activity is held in abeyance. Due to the inactivity, the metabolic rate falls to the basal level or below.

Therapy

The therapeutic value in the process of Narco-Synthesis is noticeably important, for as Watkins[37] offers:

> Merely sticking a drug in a man's arm is not enough.

This is obviously a simplification of the Narco-Synthesis process, but the point still remains, that although the therapist gains a great deal of insight into the patient's problems, the patient must come into contact with the material in a conscious state for the best results. Then the material must be reintegrated.

The role of the therapist.

In any situation where a person's mind is troubled, it is necessary, in order to gain significant results, that

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37. J. G. Watkins, Hypnotherapy of War Neuroses, p. 106.

the therapist assume an important role. In such a delicate procedure as Narco-Synthesis-Therapy, the therapist's role takes on added importance, for he must be extremely careful in allowing the release of material and the destruction of old defense mechanisms.

The therapist's job is similar to the one performed by the teacher.

Fryer and Henry[38] summarize:

> The therapist's task is comparable to the teacher in that he is the catalyst in the process of re-education. He aids in gaining insight and new modes of behavior.

He should, as White[39] states, introduce the person's ego to the past, and help him understand the past events with an objective attitude. The task of therapy is to reinforce the ego so that the emotions connected with various painful experiences may become gradually exhausted or removed.[40]

However, it is well to remember that the various psychiatrists' concepts of therapy will determine the parti-

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38. D. H. Fryer, and E. R. Henry, Editors, Handbook of Applied Psychology, New York: Rinehart, 1950, p. 480.

39. R. W. White, The Abnormal Personality, p. 238.

40. Davis, op. cit., p. 42.

cular process in each case. However, the gathering of as much material as possible from the patient while conscious is advised. An adequate number of interviews should be held until the therapist has a good grasp of the factual material.

Grinker and Spiegel[41] add this idea:

> Drugs should only be used when the utmost has been gained from the conscious patient...when the physician feels that the pathogenic material is not conscious, and knows that subsequent insight will take a large amount of time, or when resistances occur.

The participation of the therapist is another point that is of great importance. He must know when to assume a role of a commanding figure or when to be simply understanding and sympathetic.

When the patient is telling the experience or experiences as a story, the therapist assumes a subsidiary role, and remains a vague figure.[42] However, at times, the patient directs comments at the therapist, as if he were a person with him in the experience he is relating.[43] Here the therapist should respond accordingly.

The various roles assumed by the therapist cover a great range, for if the abreaction or emotional release

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41. Grinker, and Spiegel, op. cit., p. 389.

42. Solomon, and Yakovlev, op. cit., p. 530.

43. Grinker, and Spiegel, op. cit., p. 392.

becomes too great, the therapist must give positive and reassuring suggestions.[44] On the other hand, Solomon and Yakovlev[45] state:

> If the patient's initial problem is overcoming a somatic symptom, such as mutism, deafness, or paralysis, the therapist commands him to speak, hear, or move his limbs.

Olken[46] adds:

> The therapist must recall, or relate incidents leading to the breakdown and explain to the patient not to hold back emotional experiences or those which seem horrible to him.

In many cases, the therapist can determine at whom guilt-laden feelings are directed or if there are any paranoic tendencies present.[47] Also the therapist should be capable of interpreting fantastic and dream-like elaborations. Many times the patient relates material of this type, and these, in many cases, are as valuable as simple historical data.[48]

Techniques of carry-over. Another important and necessary phase in the rehabilitation of patients through the use of Narco-Synthesis-Therapy is the conveying of material expressed

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44. Bertrand Frohman, Brief Psychotherapy, p. 221.

45. Solomon, and Yakovlev, op. cit., p. 529.

46. David Olken, Essentials in Neuro-Psychiatry, Philadelphia: Lea and Febinger, 1945, p. 274.

47. Carney Landis, and Marjorie Bolles, Textbook of Abnormal Psychology, New York: MacMillan, 1946, p. 528.

48. Solomon, and Yakovlev, op. cit., p. 556.

by the patient in the sub-conscious state into his conscious state. The patient should be narcoticized lightly so that he may recall without difficulty the material released while under the influence of the drug.[49]

Landis and Bolles[50] explain carry-over in this manner:

> ...questions should be continued into consciousness so that the material will not slip back into sub-consciousness. If it doesn't reach the conscious level, the relief will only be temporary. You may gain valuable information, but it is negligible as far as the patient is concerned.

Wolff[51] also adds that this material must be carried over to full consciousness so as to synthesize it with other material gained.

Solomon and Yakovlev[52] feel that this procedure of carry-over must occur more than once.

They add:

> Fusion of material is achieved by carrying the patient through the procedure not once, but several times in a fortnight, discussing the material freely as he gains consciousness.

Probably the best results are found when questioning and analysis are continued well into consciousness. It is

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49. Stungo, op. cit., p. 4.

50. Landis, and Bolles, op. cit., p. 529.

51. Wolff, op. cit., p. 277.

52. Solomon, and Yakovlev, op. cit., p. 558.

then possible to explain and reintegrate the material to the patient at that time. More psychotherapeutic interviews can follow after that, in which this material is again re-evaluated.

Reintegration or re-evaluation. The material which is given forth under narcosis is of three types. In some cases this material is unconscious, in that it is isolated or repressed. Also, there can be a release of pre-conscious material, which may be subject to recall, but is temporarily forgotten. Suppressed material, which the patient has struggled to keep secret from himself as well as others, will also appear under narcosis.[53] These usually appear with little distortion and can be interpreted quite easily.

It is the subsequent evaluation or integration of this material that is offered to the patient that determines the success of the treatment in most cases.

Fryer and Henry[54] describe this process:

> The processes of extinction, integration, interpretation, acceptance, and re-education follow one another to result in the substitution of adaptive for maladaptive behavior.

However, they add further that the patient must, himself, desire to acquire the new modes of behavior.

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53. Grinker, and Spiegel, op. cit., p. 395.

54. Fryer, and Henry, op. cit., p. 480.

After the drug has worn off, the patient is urged to recapitulate. Sometimes, however, the therapist must press him so as to have him state most of the experience while conscious. Despite this, the therapist must still fill in many gaps so as to have the complete story.[55]

Even though the therapist must do some forcing to get the patient to restate or discuss his experiences or the material he related while under the influence of the drug, he still must be cautious and allow for a gradual release. The emotions and memories that are released then need to be synthesized and evaluated. With the proper integration and explanation, recovery usually follows. In releasing this material, Watkins[56] uses this analogy.

He states:

> An emotional conflict, like an infected boil, is lanced, and the repressed pathogenic material is released.

This can be carried farther, in that re-infection must not occur. The integration and evaluation serve to keep the patient from returning to his former state.

Solomon, and Yakovlev[57] offer this:

> Under this treatment, a patient seems to synthesize, to put together the fragments of

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55. Grinker, and Spiegel, op. cit., p. 395.

56. Watkins, op. cit., p. 9.

57. Solomon, and Yakovlev, op. cit., p. 529.

> emotions and impressions connected with his experience, thus constructing a memory which corresponds almost completely with the original experience. Freed from the impact of the immense forces of the repressed emotions, the patient restores contact between the powerful inner emotional drives and the world of reality.

Levy[58] states that most workers agree that follow-up sessions with additional psychotherapeutic interviews are important and must take place. In fact, many failures in this process are due entirely to lack of subsequent reintegration and total participation.[59]

Uses and Effects of Treatment

The results and effects of this process have been quite successful, especially in the military situation. However, in addition to military practice, Narco-Synthesis-Therapy is gaining more and more momentum in civilian psychiatry.[60]

This process seems to have its best results in cases dealing with traumatic neuroses of recent origin. However, as the patient relates the incident which brought about the disorder, other trends, incidents, and data are noticed, which

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58. Sol Levy, "Narco-Synthesis Immediately Following Insulin Shock," American Journal of Psychiatry, 108:611, February, 1952.

59. Watkins, op. cit., p. 106.

60. Levy, op. cit., p. 611.

in no way are related to the recent incident.[61] This may be an indication that past memories which are deeply buried may be uncovered in this type of process.

There are various types of other neuroses, which are either relieved or resolved by the use of Narco-Synthesis-Therapy. Many cases of its use in conversion hysteria are reported by Polatin[62] and Wilde.[63] Olken[64] reports its use in these types of disorders.

He offers this:

> ...used in cases of pseudo-paralysis of upper and lower limbs, hysterical blindness, deafness, and mutism...

In the cases of amnesia especially, significant results are found. It appears that Narco-Synthesis-Therapy is the fastest way in which to recover lost memory.[65] This seems to be its chief usefulness.

Another indication of its use is in the case of anxiety neuroses. These meet with more success if the

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61. Wilde, op. cit., p. 7.

62. Polatin, and Philtine, op. cit., p. 184.

63. Wilde, op. cit., p. 4.

64. Olken, op. cit., p. 274.

65. Henderson, and Gillespie, op. cit., p. 421.

material is fairly recent and not too deeply buried.[66] Still another group of illnesses that have been treated quite successfully are the psychosomatic disorders. Treatment has been effective in many cases, including those of stomach ulcers, colitis, and postconcussional symptoms and headaches.[67] Martin[68] also describes the use of Narco-Synthesis-Therapy in cases of psychogenic deafness.

On the other hand, in gaining results with psychotic patients, the prognosis cannot be too optimistic. In the psychoses, especially those of a deeper nature, there does not seem to be many significant results.[69] This type of disorder, because of its intensity and seriousness, does not appear to be amenable to the process of Narco-Synthesis-Therapy.

In general, MacKay, Lewis, and Bailey,[70] summarize the various disorders that have been treated successfully with Narco-Synthesis-Therapy.

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66. D. Rhoades Allinson, and R. G. Gordon, Psychotherapy: Its Uses and Limitations, London: Oxford University Press, 1948, p. 142.

67. Polatin, and Philtine, op. cit., p. 183.

68. M. A. Martin, "Psychogenic Deafness," Annals of Otolaryngology, Rhinolgy, and Laryngology, 55:81-6, 1946.

69. Roland MacKay, Nolan Lewis, and Percival Bailey, Editors, 1949 Yearbook of Neurology, Psychiatry, and Neuro-Surgery, Chicago: Yearbook Company, 1940, p. 414.

70. Loc. cit.

They state:

> ...most effective with severe anxiety states in association with mutism, stupor, amnesia, and regressive somatic manifestations. It also plays a great role in the treatment of hysterical reactions of the conversion type.

CHAPTER V

POSSIBLE USE OF NARCO-SYNTHESIS-THERAPY IN STUTTERING

References of use

After having discussed both Narco-Synthesis-Therapy as well as sutttering, it is now the purpose of this chapter to consider the use of Narco-Synthesis-Therapy in cases of stuttering. The indications of its use in psychological illnesses already have been cited.[1] These illnesses range in great degree from minor maladjustments to severe anxiety neuroses. Most of these cases bear, on the surface, little relation to the phenomenon of stuttering. However, upon closer examination, there appear various aspects of similarity. It is on this basis that this process offers itself as an aid in the treatment of stuttering. The actual use of Narco-Synthesis-Therapy in cases of stuttering have been few, but there are points in the treatment of neuroses and other adjustment problems that indicated the possibility of using this process with stuttering.

At least, by judging the results in the case of neuroses as far as anxiety relief is concerned, it is possible to assume a somewhat similar result in a stuttering problem. Naturally, it is illogical to assume a direct comparison

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1. See Chapter IV. pp. 82-3.

because of individual differences even between cases of the same problem, yet a general comparison can be made to try and determine various possibilities of the use of Narco-Synthesis-Therapy in stuttering.

Instances used.

In the writings on Narco-Synthesis-Therapy there seems to be little available material on the use of it in stuttering cases. This probably is due to the fact that its most extensive use was in war cases and was not used to a great extent with developmental disorders. However, some cases of treatment of stuttering have been cited, most of which were caused by traumatic experience of recent origin. This fact should be kept in mind, for these cases where traumatic onset was the causative factor differ in essence from the developmental type of stuttering disorders.

Basing his work on stuttering as an anxiety hysteria, Watkins[2] states that people have regained their voice rhythm or fluency under the treatment of Narco-Synthesis-Therapy. However, these cases were of a military nature, and probably were those of a recent origin. Yet the fact still remains that the people received help from Narco-Synthesis-Therapy, and that the symptom in these cases appeared in a stuttering voice.

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2. J. G. Watkins, Hypnotherapy of War Neuroses, p. 9.

Cline[3] states that the use of Narco-Synthesis-Therapy has helped some of his patients with speech and language handicaps. His cases were taken from civilian life and included many different types of disorders. However, his process was not a complete Narco-Synthesis-Therapy approach, as he usually used conventional psychotherapy, followed by Narco-Synthesis interviews of a suggestive nature.

Wilde,[4] in his work with British soldiers and sailors, reports that one case of stuttering was completely cleared up by this process. Wilde also reports a case in which the patient was not able to relate important aspects of his history nor relate experiences of emotional content. In dealing with this case, it was found that Narco-Synthesis-Therapy allowed him to relate this material.

Another case of stuttering, as reported by Tilken,[5] revealed a definite degree of improvement under the use of this process. His case was with a forty-five year old white married male, who had a long-standing condition of stuttering.

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3. W. B. Cline, Jr., "Sodium Amytal in Treatment of Anxiety States," Diseases of the Nervous System, XIII:52 February, 1952.

4. J. F. Wilde, "Narco-Analysis in the Treatment of War Neuroses," British Medical Journal, 2:4, June, 1942.

5. Leonard Tilken, "Clinical Observation of the Use of Sodium Pentathol in Heterogeneous Cases," Diseases of the Nervous System, XIII:28-9, January, 1952.

The therapist used only two interviews in which he ascertained the various experiences which were unpleasant to the patient and stuttering was increased, as well as those situations which were of a nature to relieve much of the tension on his part, thereby decreasing the stuttering. Also, it was noted that during the optimal phase of the process, the stuttering was minimized to almost nil. However, after the effects wore off, this condition of diminished stuttering did not continue.

This case of Tilken's is extremely significant because of the nature of the stuttering. He has stated that it was of long-standing condition, and probably did not differ to a great extent from similar cases encountered by speech therapists. Also the fact that this patient revealed data of emotional content that occurred in the past is of a most helpful nature.

Indications or inferences of use.

If stuttering is classified as being associated with anxiety or anxiety-tensions,[6] then there are various indications of the use of Narco-Synthesis-Therapy in cases described as mild anxiety or simple maladjustment. Here the process could be very similar to that occurring in stuttering.

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6. Wendell Johnson, Spencer Brown, James Curtis, Clarence Edney, and Jacqueline Keaster, Speech Handicapped School Children, p. 213.

There are various reasons for feeling that comparisons can be made as to the process of Narco-Synthesis-Therapy in some cases of psychological illnesses and its possible use in cases of stuttering. One feature should be noted, and that is the recommendation by many authors to use psychiatry in one way or another in treating a stutterer.

West, Kennedy, and Carr[7] state:

> It will often be the psychiatrist whose advice and help are most imperative, and to him the speech clinician should refer all cases of major emotional disturbances.

Backus[8] suggests a combination of specialists, in which the psychiatrist plays an important role.

She summarizes:

> Such experiences of collaboration have also resulted in agreement between the two workers, that stuttering, at least in older children and adults, can be treated better by a combination of speech therapy and psycho-therapy than by either one alone.

An assumption comparing stuttering and other disorders in which there is anxiety can be made by considering factors in both the fields of stuttering and abnormal

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7. Robert West, Lou Kennedy, and Anna Carr, The Rehabilitation of Speech, p. 377.

8. Ollie Backus, "Collaboration among Psychiatrists, Pediatricians, Clinical Psychologists, and Speech Therapists," The Nervous Child, 9:255, April, 1952.

psychology. Hill[9] describes the stutterer as a person who has only an exaggeration of a particular characteristic.

He describes it thusly:

> The phenomena of stuttering can well be explained if principles of normal behavior are adhered to without attempting to make the stutterer a unique animal in the universe.

If stuttering is an exaggeration of normal behavior, then some of the techniques which apply in cases of anxiety neuroses, may also apply in stuttering. White,[10] in describing abnormality, feels that it is merely an exaggeration of normalcy.

He reports:

> Abnormal personalities are not mysteriously set apart from the normal. Their various peculiarities represent exaggerations of what is to be found in every human being.

This exaggeration of normal traits and tendencies is important in the therapeutic work with stutterers, and can be compared to therapy in other fields. Backus and Beasley[11] emphasize this feeling.

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9. Harris Hill, "Stuttering: I. A Critical Review and Evaluation of Bio-Chemical Investigation," Journal of Speech Disorders, 9:259-60, September, 1944.

10. Robert White, The Abnormal Personality, p. 3.

11. Ollie Backus, and Jane Beasley, Speech Therapy with Children, p. 7.

They add:

> Speech therapy shares with other fields of human relations the goal of helping each individual to change behavior in interpersonal relationships to the extent that he can function in such relationships with greater relative adequacy in terms of satisfactions and security.

Although speaking of general speech defectives, Van Riper[12] states that psychotherapy, ranging from simple suggestion to profound psycho-analysis, is needed. This seems to be an indication that Narco-Synthesis-Therapy may be of definite use in the program of rehabilitation of the stutterer. But despite which type is used, he feels that the following goals are to be aimed for in using psychiatry.

He states:

1. To help the speech defective understand his problem;
2. To let him get the emotional poison out of his system by freely expressing his true feelings;
3. To help him organize and carry out a campaign which will
   a. increase his social assets, and eliminate or minimize his abnormalities,
   b. eliminate or minimize the penalties inflicted upon him;
   c. develop attitudes toward his speech defect and other social laabilities which will handicap him.

Narco-Synthesis-Therapy as a diagnostic aid

In stuttering, the possibility of using the process of Narco-Synthesis-Therapy as a complete therapy in itself,

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12. Charles Van Riper, Speech Correction: Principles and Methods, pp. 52-3.

would entail total handling of the case by a psychiatrist. There are two definite weaknesses with a process of this type. White[13] states that Narco-Synthesis-Therapy is definitely not an independent therapeutic system. It must be worked in conjunction with other processes; its main function being to reveal repressed material so that the therapist can be better guided in his handling of the case. Also, because of the good results of speech therapy with stutterers, the turning over of stuttering cases to the psychiatrist, who probably has more patients than he should reasonably be handling, does not seem profitable.

It appears now that the chief indication of the use of Narco-Synthesis-Therapy in stuttering would be in the role of revealing the patient's past history and the factors influencing the onset and continuation of the stuttering pattern. In connection with this, the assumption is made that anxiety and tension and the stuttering are concurrent, each influencing the other. However, from the anxiety and tension that arise in the stuttering problem, certain personality problems come into effect. Van Riper[14] describes these personality problems as being brought about because of the person's differences

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13. White, op. cit., p. 358.

14. Van Riper, op. cit., p. 56.

from other people. He feels that the basis of these differences should be determined by the speech therapist.

He describes it in this manner:

> The differences about which the personality problem developed must be discovered, eliminated as far as possible, or recognized (consciously and objectively) as features which good adjustment will minimize and poor adjustment will amplify.

Narco-Synthesis-Therapy may be able to help bring out these causes so that the other techniques and goals may be accomplished. It may also bring about the particular patient's reasons for the anxiety and tension. To reduce the stuttering without reducing the tension and anxiety is a superficial approach to the problem.

Johnson[15] summarizes:

> Anxiety is the key problem. There is no point in having the stuttering pupil attempt to change his pattern of stuttering unless the entire procedure is carried out in such a way that anxiety is reduced. After all, the ultimate objective is to achieve normal speech. Of course, even if the objective were to find the most comfortable way to continue stuttering, there would be something to say for that, too, as an alternative to stuttering in some more distressing manner. But the stutterer might as well aim to go beyond this more modest goal so long as there seems to be a possibility of doing so. And the surest way to normal speech lies in overcoming the fear of stuttering.

As was stated earlier, most speech correctionists heartily agree on the relative merits and values of the case

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15. Johnson, et al. op. cit., p. 239.

history in dealing with stuttering. However, all too often, it is extremely difficult to obtain these case histories. Many times the person has either forgotten or repressed various incidents and feelings that were primary in the development of stuttering. At other times, patients have substituted, either intentionally or unintentionally, other, seemingly more logical, determining factors. Others have been influenced by parents, relatives, or friends as to the cause of stuttering to such an extent that they now believe it as fact. Also, some people hate to admit the fact that they may have ambivalent feelings toward their parents as far as their speech is concerned. Many others feel that their stuttering is disgraceful, and they immediately want some organic cause to be of blame. These reasons, and many more, can, and in most cases will, cause a great distortion of facts. However, this background material seems necessary to begin therapeutic rehabilitation.

Van Riper[16] lists a detailed questionnaire to use in cases of stuttering. However, it is not always possible to gain the exact or objective answers in this manner. Various factors, many of which were mentioned before, may cause the distortion of attitudes and pertinent historical data.

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16. Van Riper, op. cit., pp. 457-62.

It is this problem of securing the essential data which has no influenced the stutterer and his speech that Narco-Synthesis-Therapy may help to alleviate. The long life of emotional influences, parental reaction, and traumatic experiences naturally help in the determining of the intensity and severity of the various blockings. Generally speaking, the greater the anxiety-tension, the more complicated the stuttering is likely to be.[17]

It should be remembered that this diagnosing or determining of causative factors is an important one. The need for adequate differential diagnosis is particularly great in stuttering.[18] In most cases it determines the type of training and program that should take place.

West, Kennedy, and Carr[19] conclude:

> ...the purpose of the differential diagnostic study of cases of speech disorders is to assist in the selection of appropriate therapeutic or rehabilitory methods.

Another consideration is that symptoms must not be dealt with alone. If possible, causes should be determined so that they may be re-evaluated and if they still exist today, in the stutterer's home, business, or social life, as prolonging influences, they must be eliminated. The person

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17. Johnson, et al, op. cit., p. 237.

18. West, Kennedy, and Carr, op. cit., p. 79.

19. Loc. cit.

wants to be able to use his controlled stuttering in difficult situations. The therapist should have a good idea of what these difficult situations are, so that he may direct the person to accept these situations without excessive fear.

Narco-Synthesis-Therapy offers a way of gaining this material in a relatively free and undistorted manner. The general relaxing of inhibition due to the drug induction seems to give reason to the possibility of using this process. In stuttering an anxiety is definitely present and there are influencing factors which need to be relieved or removed. The patient also may have resentments and complaints which could be brought out under Narco-Synthesis-Therapy.[20] Yet, in the opinion of some authors, a pertinent point should be remembered and that is that with this process probably nothing more can be gained from a willing person than in personal contact over a definite period of time. Some of these are as follow:

Mulinos[21] states:

> With cooperative patients, capable of responding, probably nothing more can be accomplished by the use of this procedure than by psychotherapeutic methods, provided sufficient time is available.

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20. Werner Wolff, The Threshold of the Abnormal, p. 277.

21. M. G. Mulinos, Pharmacology, p. 39.

Solomon and Yakovlev[22] add:

> Recovery of amnesic material under hypnosis can be achieved through the use of free associations and states of hypnagogic reveries.

However, it still remains that in many cases the therapist does not have time or is not prepared to use these psychotherapeutic methods. For instance, if psycho-analysis were used to gain the background material, an excessive amount of time would be consumed by sessions with a psychiatrist. Narco-Synthesis-Therapy, although it must be administered by a psychiatrist or a physician, is much faster and requires a short amount of time.

Pennington and Berg[23] describe it thusly:

> For diagnosing...only a short procedure is used ...less than twenty sessions.

This is the maximum for the number of sessions. In many cases fewer sessions should be necessary. So one of the values in using Narco-Synthesis-Therapy would be for its time saving ability.[24]

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22. Harry Solomon, and Paul Yakovlev, Manual of Military Neuro-Psychiatry, p. 559.

23. L. A. Pennington, and Irwin Berg, An Introduction to Clinical Psychology, New York: Ronald Press, 1948, p. 532.

24. Desmond Curran, and Eric Guttman, Psychological Medicine, p. 167.

Ainsworth[25] states:

> The stutterer comes for help, and he wants it as soon as he can get it. Therefore it is well to know what can be done soon.

Although the long range program in stuttering should be considered as the chief means of adjustment, the stutterer needs something to carry him through this longer process. To start both the long and short term change, Narco-Synthesis-Therapy may be a definite aid in initiating both types of therapy.

Wilde[26] states that Narco-Synthesis-Therapy is more rapid than hypno- or psycho-analysis. Also there are other advantages of Narco-Synthesis-Therapy, which gives it preference over hypnosis.

Henderson and Gillespie[27] summarize:

> Narco-Synthesis-Therapy gives the patient something tangible that he understands more easily than the pure psychological approach, and it has, in consequence, considerable value as a vehicle of suggestion.

This factor of suggestion must be considered carefully by the therapist because it can be dangerous if not properly used, and leave the patient in a poorer position

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25. Stanley Ainsworth, Speech Correction Methods, pp. 89-90.

26. Wilde, op. cit., p. 6.

27. D. K. Henderson, and R. D. Gillespie, A Textbook of Psychiatry, p. 421.

than when he began therapy. Fryer and Henry[28] list this as an advantage of Narco-Synthesis-Therapy over hypnosis.

They add:

> It has a peculiar value, an effect of initiative cathartic expression of past emotionally charged experience without the risk incurred in hypnosis, that the therapist will project into the subject what is not already there.

Another advantage of Narco-Synthesis-Therapy would be that it gives more confidence to the doctor and is more certain to work than hypnosis.[29] In cases of stuttering, hypnosis does not seem too effective.

Moore[30] concludes:

> We have been using hypnosis as a meands of differential diagnosis but find it limited because of non-hypnotizable subjects. Therefore, it applies only in part of the cases. Narco-Synthesis should be a better method in some respects if you can work with trained physicians and psychiatrists.

Again, its time saving usefulness is mentioned.

Muncie[31] relates:

> Proved useful and timesaving in treatment but probably was no better than hypnosis and other methods resting on personal contact if given enough time.

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28. D. H. Fryer, and E. R. Henry, Editors, A Handbook of Applied Psychology, p. 480.

29. Henderson, and Gillespie, op. cit., p. 421.

30. "Personal correspondence of the author,"letter from Wilbur Moore, June 12, 1952.

31. Wendell Muncie, Psychobiology and Psychiatry, St. Louis: C. V. Mosby Company, 1948, p. 542.

Besides the advantage of speed, Narco-Synthesis-Therapy is probably the quickest way in which to elicit the rapid recovery of memory.[32]

Fetterman[33] states:

> ...also to make the patient speak more freely and uncover more rapidly. Under such a state of narcosis, the patient can relive experiences repressed or hidden and can be led more quickly to reveal significant facts.

This can be used to advantage in cases of stuttering. The stutterer probably has, in most cases, forgotten many important facts or factors influencing the development of the disorder that personal interview will not uncover except in cases of intensified psychotherapy. Another point that adds value in using Narco-Synthesis-Therapy in stuttering is that an abreaction can be initiated at any regressed age level.[34] By using this method, the therapist can obtain acutal actions and responses of the patient at an important age. Also, it may be possible to determine true attitudes of the person toward parents, teachers, and friends at various age levels. The therapist can judge many of the feelings and emotional reactions in periods of his earlier history. It may also

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32. Henderson, and Gillespie, op. cit., p. 421.

33. Joseph Fetterman, Practical Lessons in Psychiatry, Springfield, Illinois: Charles C. Thomas, 1949, p. 421.

34. Watkins, op. cit., p. 122.

show whether the stuttering pattern and profile is the same at various times in his life, or if it has changed, how these changes and types differ.

White[35] describes it thusly:

> The abreaction is of therapeutic value because it occurs under circumstances that permit a relaxation of defense.

One more factor should be considered in relation to using Narco-Synthesis-Therapy as a diagnostic aid. Earlier in this paper, emphasis was placed on the value of reintegration.[36] This still holds true in cases where Narco-Synthesis-Therapy would be used as a diagnostic aid. However, the emphasis would not be as great on therapy in this case.

However, Sullivan[37] adds:

> It is impossible to separate the purely diagnostic from the purely therapeutic results in Narco-Synthesis-Therapy.

Yet, in many cases the relating of material back to the patient may be delayed until later, yet this material is still of great value to the therapist because of the information gained.[38] This conception adds another factor in the

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35. White, op. cit., p. 239.

36. See Chapter IV. pp. 68-71.

37. D. J. Sullivan, "Psychiatric Uses of Intravenous Sodium Amytal," American Journal of Psychiatry, 99:411, November, 1942.

38. Carney Landis, and Marjorie Bolles, Textbook of Abnormal Psychology, p. 529.

case of using Narco-Synthesis-Therapy as a diagnostic aid in stuttering.

Contra-indications

Physiological and medical dangers.

Naturally, with the use of drugs, there must be limitations. In this case there are several, for there are many people who cannot be given drugs for one reason or the other. Narco-Synthesis-Therapy is not recommended for any person with a heart ailment, arterial disorder, or kidney trouble.[39]

Sullivan[40] states:

> The therapist must...watch for cases where there are pre-indications of marked hypertension, obvious myocarditis, and pulmonary infections and edema. All these may be aggravated by blood pressure fall.

Another danger is that apnea may occur. Solomon and Yakovlev[41] state that debilitated patients should not be administered narcotics. However, the main problem is one in which there is some sort of cardiac or arterial disorder. This seems to be due to the lowered oxygen consumption of the brain, which is brought about by the use of barbiturates.[42] This fall in consumption produces a fall of blood pressure

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39. Curran and Guttman, op. cit., p. 167.

40. Sullivan, op. cit., p. 414.

41. Solomon, and Yakovlev, op. cit., p. 556.

42. L. S. Goodman, and Alfred Gilman, Pharmacological Basis of Therapeutics, p. 135.

in the patient. However, this fall of blood pressure can be controlled by the injection rate for it has been found that the more rapid the injection, the more rapid the fall in blood pressure.[43]

Solomon and Yakovlev[44] list an antidote where there seems to be a collapse because of the lowered blood pressure. They recommend a 1.4 to 3.0 c.c. dose of coramin[45] intravenously. This would indicate the danger connected with this process. Hadfield[46] feels that these drugs may get toxic in many cases.

However, the mortality rate is low in cases of treatment by Narco-Synthesis-Therapy. Wilde[47] reports only five fatalities in four thousand cases in one instance. Another figure given by Wilde is a little higher. This is listed as one death in two hundred and twenty-five cases. However, it is not stated why these fatalities occurred, so Narco-Synthesis-Therapy cannot be necessarily blamed for these deaths.

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43. Sullivan, op. cit., p. 414.

44. Solomon, and Yakovlev, op. cit., p. 557.

45. Pyridine beta carboxylic acid diethylamide.

46. J. A. Hadfield, "War Neuroses", British Medical Journal, 1:321, February 28, 1942.

47. Wilde, op. cit., p. 6.

Psychological implications.

There are many people who do not respond to this type of treatment, as there is little rapport gained and they release no material, yet this appears to be the exception and not the rule.[48] Many times it does not uncover amnesic material.[49] Another point in conjunction with this is that different individuals, even with the same mental conditions, may react differently to any one of the drugs.[50]

One of the main limitations of Narco-Synthesis-Therapy is that in many cases it does not seem to have been of as much use in the restoration of really remotely buried memories as it is with more recent data.[51] In cases of stuttering, this could definitely be a disadvantage, because the therapist wants to secure material which is not of recent origin.

However, all cases differ and it is not impossible to gain these memories. Another limiting factor is that there may be some reticence as far as the injection is concerned.

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48. Sol Levy, "Narco-Synthesis Immediately following Insulin Shock," American Journal of Psychiatry, 108:611, February, 1952.

49. Hadfield, op. cit., p. 321.

50. Erich Lindemann, and Lincoln Clarke, "Modifications in Ego Structure and Personality Reactions under the Influence of the Effects of Drugs," American Journal of Psychiatry, 108: 562, February, 1952.

51. D. Rhoades Allinson, and R. G. Gordon, Psychotherapy: Its Uses and Limitations, p. 142.

Solomon and Yakovlev[52] state:

> In rare instances the injection is difficult because of violent tremors in the arm. In almost every case there is some increase in the symptoms of anxiety as the injection is initiated.

However, as the process continues the patient becomes quiet. The primary difficulty probably would be in the patient's fear of the needle. Yet this would certainly be rare as most people are not afraid of injections to that extent. Also, the fact that most people who have a stuttering problem would probably be willing to subject themselves to it.

Another danger should be mentioned, despite the fact that a trained therapist should not allow it to occur. In many cases of stuttering or similar disorders in which anxiety is involved, a tremendous amount of repressed material would be released under Narco-Synthesis-Therapy. If too much is released without insight being gained and without proper adjustment being made, the patient may find himself in a position far worse than he was before.

Landis and Bolles[53] state that this release should be gradual so that the patient can deal with the intense emotions in a more rational manner than before. Finally, the subject must, himself, desire to acquire the new modes of behavior.

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52. Solomon, and Yakovlev, op. cit., p. 529.

53. Landis, and Bolles, op. cit., p. 108.

If this is not present, the whole process is definitely limited.[54]

54. Fryer, and Henry, op. cit., p. 480.

CHAPTER VI

SUMMARY AND CONCLUSIONS

Summary.

This paper was written to investigate another means in which a person's attitude toward stuttering and the factors influencing it may be brought to light.

Stuttering was approached as a psychogenic developmental disorder and that the attitudes or experiences which influenced the stuttering pattern must be resolved or adjusted.

Narco-Synthesis-Therapy was limited, in this investigation to cases in which the problem under consideration had similarities to the stuttering problem. Another limiting factor was in the use of the drugs in this process. Sodium Amytal and Sodium Pentathol were investigated. These two drugs were considered because the instances of their use were comparable to stuttering and because most of the sources cited their use.

Conclusions.

1. Experiments should be conducted using the process of Narco-Synthesis-Therapy as a diagnostic aid in cases of stuttering.

2. A psychiatrist must administer all drugs used and be in charge of the medical process.

3. Sodium Pentathol is recommended for use in this experimentation.

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