

# STUTTERING: WHERE AND WHITHER?

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ALL of us have been wandering in the forest of stuttering for a long time and perhaps we had better stop for a moment, sit on a log, and try to determine whether we have been walking in circles or are really making progress toward finding a solution to this ancient problem. We know that thousands of other explorers, now dead, have roamed this forest, for we have seen their faint trails and fingered the bones of the words they left behind. And we know that even now we have companions in the forest who seek to clear new paths, sometimes reblazing old trails that ended nowhere long ago. Are they lost or are we lost or—God help us—are all of us lost? Where are we now? Where do we go from here?

## *Where the Stutterer Was*

"Injun no lost. Wigwam lost!" This old saying of the north woods is more meaningful than one might think. If you know where you started out and where you've been, if you can retrace the path you have taken, then you are not entirely lost. Let us backtrack a bit. The present author, having been born in 1905 and having stuttered fluently or nonfluently since 1906, is convinced that society has progressed in its understanding of stuttering. When he was a child and a youth, stuttering was viewed either as a dirty, vicious habit, almost as a perversion akin to public masturbation; or else it was seen as a manifestation of uncontrollable, neurological spasms—a verbal epilepsy. Since stuttering also was thought generally to be contagious through imitation, strong social penalties were applied routinely when the disorder was exhibited. Strangers felt impelled to slap you across the face to break you of your unspeakable habit; neighbors prohibited their children from playing with you; in school and on the playground you were mocked and teased unmercifully. At that time fathers forbade their sons to stutter and whipped them when they did; mothers prayed. While remnants of these old cultural attitudes still persist, it seems clear that today's stutterer has a much easier time. Society now tends to interpret stuttering as being an unfortunate but soluble problem, and a new profession has grudgingly accepted the responsibility for solving it.

In the early years of this century, about the only help that stutterers could hope to get was found in the commercial stammering schools or from itinerant

practitioners who "treated" their victims briefly before moving on. This therapy was always intensive and usually short-term, the stutterers living isolated for a few months in the commercial institutes or working every hour of the day in the traveling healer's hotel rooms to build their self confidence and to learn to speak normally. Most of the methods involved intensive drills in breathing, vocalizing, and timing of slow utterance with regular body movements or with a metronome. The practitioner insisted on deep relaxation. You had to speak very slowly and regularly and very consciously, using this rate control first in unison with others, then alone. Strong positive suggestion, almost to the point of hypnosis, permeated all sessions. Systematic and contingent punishment for any moment of stuttering and contingent rewards for fluency were basic parts of the program. Chits (tokens) to purchase food, sweets, and privileges or to escape from various kinds of unpleasantness were bestowed for acceptable performance; they were also withdrawn when it did not occur. Zero stuttering was the goal. Under the impact of the program and in the relative isolation of the surroundings, most of the stutterers did achieve zero stuttering temporarily. The relapse rate, however, was almost total. After Bluemel's book, *Stammering and Cognate Disorders*, came out in 1913—a book that subjected these procedures to critical scrutiny and exposed their blatant failures—most of the stammering institutes and itinerant practitioners gradually began to disappear. By 1930 most of them were out of business.

World War I and the great economic depression of 1929 did much for the cause of the handicapped. The physical and psychiatric casualties produced by the war brought home to the American people, then highly patriotic, their need for rehabilitation. The old attitudes of laissez-faire ("too bad, but it's their bad luck not mine, thank God!") began to fade, and our society began to show concern for its unfortunates. In turn, the Great Depression revealed that all were vulnerable, that somehow we would have to build into our social structure some policies and agencies that would take care of those who could not take care of themselves. A strong wind of change swept the country, and the stutterer along with others possessing different disabilities benefited from the new climate of concern.

Our profession of speech pathology and audiology was born in the 1930s, and for the first time stuttering was viewed as a disorder to be studied. Much of the early research was focused in the universities; and to

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have experimental subjects, these universities had to offer clinical services, thus creating many speech clinics. This research was primarily descriptive, the overt and covert symptomatology receiving most attention. Yet there was much searching for the cause of stuttering, as well. Many theories concerning its nature and etiology were formulated, tested, and discarded, the cerebral dominance theory of Travis being only one of the casualties.

The decade of the 1930s was marked by intense conflict among the various schools of thought, each of which had its vehement disciples. Impelled by the force of the mental hygiene movement, one school, led by Blanton and other psychiatrists, viewed stuttering primarily as a neurosis and based its treatment on deep psychotherapy. The old belief that stuttering reflected spasmodic neurological dysfunctions appeared not only in the cerebral dominance theory but also in the concept of pyknolepsy (a mild form of epilepsy) promulgated by West and the aphasiclike perseveration theory of Eisenson. Opposed to these were the new forms of the old view that stuttering was simply a learned behavior. Thus, Dunlap saw stuttering as a simple motor habit to be overcome by negative practice; Bluemel felt it was a conditioned inhibition of speech that should be eliminated by Pavlovian deconditioning; and Wendell Johnson, influenced by Korzybski and the other semanticists, espoused a cognitive theory of its learned nature based on misperception of the normal disfluencies of childhood and learned avoidance responses. Van Riper tried to synthesize all of these eclectically but without much success. In retrospect, the major contribution of the 1930s was its creation of interest in stuttering as a problem. The altercations and arguments, the extensive research, the experimentation with many kinds of therapy by pioneering members of a new profession, changed the basic attitudes of our society toward its stutterers. Stuttering was no longer a shameful curse but a challenge.

During the 1940s there occurred a remarkable growth in the number of speech clinics and training institutions where stutterers could find treatment, and now for the first time some of them could find help in the public schools. The dominant theory of the nature of stuttering during this period was the semantic view of Wendell Johnson. Its good impact cannot be overestimated. Believing as he did that the disorder was based on the parental and cultural misperceptions of the child's normal disfluencies as abnormal, Johnson changed the basic beliefs and practices of the culture to a remarkable degree. He insisted that stuttering was not to be punished and that parents must be more permissive and understanding. Stutterers were not to avoid or struggle or to be fearful or shamed. If they were not fluent, they should display openly (in the form of "the bounce") the easy, effortless repetitions that all of us show at times. The stutterer was normal, not deviant; it was the cultural evaluation of normal hesitancy that was abnormal.

Johnson was a most persuasive man, and he did much not only to prevent stuttering but also to ease the lot of the stutterer.

During this decade of the forties, the most dominant method of treatment, however, was the use of relaxation. Stimulated by the experimental work of Jacobson and promoted by Gifford, Hahn, and others in this country and by Fogerty in England, the majority of stutterers were trained in deep relaxation and taught to speak normally while relaxed. Strong suggestion was used to create such a state of relaxation. The old breathing exercises of the commercial schools were discarded, but stutterers were taught to phonate while sighing and to articulate without force. In addition, these practices often were accompanied by training in mental hygiene and social adjustment.

These years of the forties also found the beginnings of a symptomatic therapy, based on learning theory. It sought to shape the abnormal stuttering behaviors into a form that society could tolerate, one that would not frustrate the stutterer and could enable him to be reasonably fluent even though he did stutter. He was taught to demonstrate his stuttering openly and to unlearn and modify its component behaviors of avoidance and struggle. This form of therapy, pioneered by Van Riper and others, also sought to desensitize the stutterer to his situation and phonemic fears and to increase his tolerance of communicative frustration. Though it was task-oriented as evidenced by the use of speaking assignments and by intensive individual, group, and self therapy, some psychotherapy also was included.

Except for the emphasis on relaxation that faded from the therapeutic scene, the fifties were a period of consolidation and development. The therapies of Johnson and Van Riper were most prominent, and both showed changes from their earlier formulations. The earlier interest in the problem of stuttering diminished as our profession began to cope with all of the other disorders of communication and as the field of audiology developed. One major innovative contribution of the decade evolved from the work of Weiner in cybernetics and the discovery by Lee and Black that delayed feedback could produce disfluencies akin to stuttering in normal speakers. These led to several important basic research studies, such as Stromsta's, which demonstrated that auditory feedback systems of stutterers might be more vulnerable to disruption than those of normal speakers.

In the 1960s, a renewed interest in stuttering appeared. Much research was performed and new theoretical explanations of the disorder were formulated. Most of the latter concerned the roles of classical and operant conditioning in accounting for the variability of different stuttering behaviors and their variations in frequency under contingent positive reinforcement or punishment. Influenced by the work of Wolpe and Eyesenck with phobics and neurotics, the principles of systematic desensitization and reciprocal inhibition were applied to stuttering therapy. Again the use of

relaxation and punishment reappeared, although now under a different rationale.

Many other older therapeutic methods also resurfaced. Various types of pacing devices found new adherents, including the electronic metronome, the Perceptoscope, and the use of the delayed feedback apparatus to time the stuttered word with its echo. The long rejected techniques of rate control and speaking in unison (shadowing) were rediscovered and hailed as new solutions to the ancient problem. Contingent punishment and reinforcement were reapplied with enthusiasm to create stutter-free speech that rarely seemed to be permanent.

During these 10 years, Johnson's semantic view of the etiology of stuttering came under strong challenge by Wingate and others. By the end of the decade, Johnson's dominant position in the field had been displaced by the exponents of behavior modification theory. If this period could be characterized by any single major emphasis, it would have to be that of the application of learning theory to stuttering. Unfortunately, perhaps, the contributions of the cognitive learning theorists were ignored, and classical and operant conditioning became the watchwords of the day. Also during these years, the psychotherapeutic approach to stuttering in the form of Rogerian counseling and psychoanalysis attracted little general interest and few disciples. Of all the earlier approaches, that of the present author probably suffered the least because it too had been based on learning theory, if not couched in its terminology. Though often practiced superficially, it had found enough adherents to be labeled with the damning epithet of "traditional therapy."

From one man's doubtlessly biased view, this is the path we have taken. It has not been a straight trail; there have been many once-promising leads that seemed to end in cul-de-sacs, and much circling and retracing is apparent in fading footprints. Have we really come very far? Are we still lost in the forest of stuttering? Certainly many stutterers and their clinicians feel that they are.

#### *Where the Stutterer Is Now*

So perhaps we should pause a moment and consider our present state. Where are we now? First of all, it is apparent that there are plenty of thorns in our thicket. Much of the present therapy being done with stutterers in the public schools is superficial partly because of case loads that make intensive therapy difficult, but mainly because our clinicians have not received adequate training or experience. At the master of arts level, our training institutions are forced to prepare general practitioners. Time limitations and practicum requirements demanding supervised experience with many disorders in many settings and age groups make it very difficult for any student clinician to acquire the competency he needs if he hopes to do successful therapy with most stutterers. Students read about stuttering and hear lectures about it, but rarely

do they get enough experience in coping with the disorder's therapeutic problems. One of the sad consequences of this situation is that many adolescent or adult stutterers, having experienced superficial and token therapy throughout their school years, lose all hope of overcoming their disability and so resist opportunities for further treatment. This saddens us, for although there is much that we do not know about the nature of stuttering or the way it should best be treated, there most certainly are some intensive therapy programs that are successful with certain stutterers. Indeed, though we already know enough to help most stutterers become fluent, too few clinicians have mastered that knowledge.

Another sad feature of the present situation is the lack of any organized program to prevent stuttering or its abnormal growth. Though the disorder seems to be amenable to early treatment, as demonstrated by the high success rates of clinicians in Russia and other Iron Curtain countries where they do have such programs, woefully meager opportunities exist here for a young stuttering child or his parents to get help. Indeed, many clinicians are reluctant to work with beginning stutterers, fearing that any intervention may worsen their problem. Here we see one of the few unfortunate effects of the semantic, diagnosogenic theory. Clinicians are loathe to diagnose stuttering or even to use the word with reference to disfluencies in children, no matter how frequent or dangerous the disfluencies may be. Although certain kinds of childhood disfluencies present a high risk of developing into confirmed stuttering, few clinicians have the competence or willingness to make the differential diagnosis. Thus, long after a child has come to know the frustration and penalties associated with his stuttering and has begun to respond by struggle and avoidance, one finds his parents and clinicians pretending that no problem exists and hoping that he will outgrow it. Therapy is postponed too often until the disorder has become self-reinforcing.

Although a tremendous amount of research has been done on stuttering, most of the early studies need replication and redesigning if we are to have a firm foundation of knowledge on which we can build our theories and therapies. Longitudinal investigation of the development of the disorder is especially needed. Far too much of our research has used adult stutterers from colleges, and far too few of our subjects have been children. Basic research on the nature of stuttering has been sparse. We must stop eyeballing the gross features of fully developed stutterers and start studying the disorder's motor and neurological phenomena at a more molecular level.

At the same time, there are many encouraging signs that real progress can be expected in future years. Models of intensive and sometimes comprehensive therapy programs have been designed. Theories and therapies are being tested, not merely advocated, although at present the criteria used by researchers and clinicians alike for their dubious claims of improve-

ment and cure leave much to be desired. The universities and colleges are beginning slowly to revise and upgrade their training of student clinicians. Those who practice their profession in the public schools are gradually being freed from the shackles of rigid scheduling and exorbitant case loads and are beginning to find time to work with stutterers. Also we now find that groups of stutterers, such as the National Council of Adult Stutterers, in Washington, D.C., are getting organized with greater frequency, not only in this country but throughout the world. These groups are not only promoting their cause but also challenging the competence and claims of their clinicians. Some of them are doing independent follow-ups of reported cures. Meanwhile the social stigmatization and rejection of the stutterer continues to decline, and there is even some evidence that the incidence of stuttering is going down. Thus, in almost every direction we can discern some light in the forest, though we know we have far to go. So, let us dare to climb the tall tree of outrageous speculation to peer into the future hopefully to detect some possibly promising paths. After all, if we have had the temerity to wade thus far through the murky waters of fantasized historical fact, why not let our fancy free?

### *The Stutterer's Future—A Fantasy*

Students of stuttering even 100 years hence will doubtless find our present theories and therapies not only primitive and quaint, but almost ludicrously simplistic. Tremendous social changes will have occurred. Freed from the burdens of national rivalry and warfare, with new sources of abundant energy to support a rapidly declining world population and with machines doing most of the work that must be done, the human beings of the future will be devoting most of their efforts toward improving the quality of their lives and their environments. Except for science and space exploration, the service industries and organizations will dominate that future scene.

In such a society, stuttering (like cancer, heart disease, asthma, and many other such disorders) will have become rare—almost atavisms from the primitive days and ways of the twentieth century. Perhaps then some future historian in 3000 A.D. will trace how the disorder was eliminated, in an essay such as the following.

Our scrutiny of two old books on the nature and treatment of stuttering that were published in the early 1970s reveals a vast collection of misinformation, ignorance, and benightedness. Preventative and remedial practices were characterized by a primitiveness and crudity that now seem appalling. The lot of the stutterer at that time must have been a very sad one. Nevertheless, in the last two decades of the twentieth century, we do find some progress in solving the problems of this ancient affliction.

First of all, we find that adult stutterers organized themselves into groups or councils to protest the inadequacy of the therapy procedures of the day, to battle their incompetent clinicians, and to acquaint their society with the seriousness of their communicative dis-

abilities. Their numbers seem incredible today, for in just the country called the United States alone there were approximately 2 million of these severely handicapped persons. The pressure brought by these councils finally led to the recognition that stuttering should be viewed as a disorder serious enough to merit adequate funding for research and treatment. When a National Association for the Study of Fluency Disorders came into being shortly after a *Journal of Fluency Disorders* appeared, this association (with the help of a charitable foundation and the councils of stutterers) spearheaded some drastic changes.

One of these changes involved the training of clinicians who specialized in stuttering. Up to this time, since clinicians were trained only as general practitioners, their success rates with stutterers were pathetically low. As more and more specialists in stuttering appeared and were able to demonstrate some considerable success despite their ignorance and crude techniques, more governmental funding became available not only for salaries but also for rigorous selection, training, and research programs. It is interesting to discover that these specialists not only had to pass stringent board examinations but also to demonstrate before a group of their peers their clinical competence in actual therapy. Moreover, besides an initial internship, these specialists were evidently required to undergo a period of in-service retraining every seven years.

At first, most of the clients of these specialists were confirmed adult stutterers, but by the end of the century we note a marked shift toward prevention. This first occurred in regional stuttering clinics. Apparently these clinics had first been founded in the university training centers as a way of getting subjects for research and student practicum; then they were organized in the public schools as settings for the new specialists; and, finally, about the year 2010 we find them in the interdisciplinary preventative health care centers that sprang up like mushrooms throughout the land once the tenacious grip of the private medical practitioners had been broken.

It is very difficult for us to reconstruct the kinds of services then offered in these new clinics and health care centers. We do know that at first only children aged two to four were able to get the diagnostic and remedial help they required and that admission was voluntary. It was much later (circa 2300) that mandatory treatment of all individuals showing a high risk of developing physical, emotional, or social pathologies became the law of the land. Nevertheless, the role of the whole family in the precipitation and abnormal growth of stuttering was recognized clearly as evidenced by the adjunctive dormitory or family quarter facilities, where the parents and siblings of the young stutterer could live and be treated by the various professionals associated with these centers. The basic goals of treatment seemed to be those of preventing the child from developing avoidance and struggle reactions to his fluency breaks, and of the systematic strengthening of his prosody. These clinics also provided for emotional release and for some crude deconditioning. While from our point of view these goals and activities seem inadequate and naive, the reported statistics indicate that the disorder showed remission rates far greater than had been achieved earlier.

Though the overall incidence of stuttering did show a marked decline through these early efforts at prevention, there were evidently many children who were unable to get these services. So, the stuttering specialists in the public schools, community speech and hearing centers, and hospital and university clinics had plenty to do. It might be, therefore, of some minor interest to survey the methods used to treat the confirmed stutterers in the first half of the twenty-first century.

By this time, the stuttering specialists had come to recognize that an intensive and comprehensive therapy program was required, and we no longer find stutterers receiving clinical services once or twice a week for an hour or so. Instead, they spent their days and nights in a center resembling a specialized hospital for from one to two months, then resided (and worked) in what were termed half-way houses, thereafter returning to the clinics for diagnostic and booster sessions intermittently and according to need. These clinics must have been very noisy places, for the stutterers evidently had to speak continuously to one another, to the attendants, to visitors and clinicians, and to themselves under carefully programmed conditions of communicative stress.

The earlier efforts to apply principles of conditioning aimed at effecting a temporary decrease in the frequency of moments of stuttering had been abandoned, and now we find them used specifically and systematically to decrease the strength of the avoidance and struggle responses to the fear or occurrence of their fluency breaks. In addition, we note that the principles of cognitive learning theory were being used not only to alter the stutterer's perceptions of situational stresses and word or phonemic cues and toward developing better strategies for integrating motor speech, but also toward correcting the stutterer's morbid perceptions of himself and others. We even find some crude but intensive therapy being done in teaching the stutterer to plan new modes for handling interpersonal relationships. If our impression is correct, some time each day also was spent in sorties outside the clinics, when the stutterer explored and tested his new skills, perceptions, and strategies. Some training in the proprioceptive monitoring of the stutterer's normal speech seemed to be employed, for we have unearthed various crude models of masking, delayed auditory feedback, auditory flutter, and inter-ear phase alternator devices that evidently were used.

Through various kinds of conditioning procedures, stutterers also were trained at first to speak very consciously and voluntarily rather than automatically, though later in the program spontaneity of utterance was reinforced. If we can discern the major focus of the behavioral retraining of that faraway time, it involved the gradual modification and shaping of the stutterer's abnormal behaviors into forms that facilitated normal verbal sequencing. When stuttering did occur, it was not repressed but shaped into behavior that would not invoke rejection or frustration. From our vantage point in time, the therapy was crude, clumsy, and onerous; nevertheless, for those stutterers who could afford the treatment or were willing to undergo its rigors, it seemed to be fairly effective. Unfortunately, too many stutterers continued to stutter, mainly because there were too few competent specialists.

As every school child knows, the year 2050 dates the beginning of our modern era when we became one world rather than a collection of warring states and peoples, when plentiful energy from atomic fusion became available, when the spaceships from Andromeda brought us their bounty of superior science and knowledge. Yet few of us remember that this was also the year of the breakthrough in the conquest of stuttering. Oddly enough, much of the basic information required for that breakthrough already had been achieved by our predecessors. Even as early as the twentieth century, the principles of cybernetics and biofeedback were known. The pleasure and pain centers in the hypothalamic areas had been located; the fundamental laws governing learning and unlearning had been formulated. Genetic control and modification were being explored. It should have been clear even then that all this new knowledge could be applied to the solution of the problem of stuttering. Nevertheless, it remained unused until

the bioscientist Balbus Blaesus, a stutterer himself, invented the artificial mouth.

The first models of this device were very primitive. Essentially they consisted of a biofeedback computer system that provided a backflow of error information from sensors that monitored pre-utterance air pressure in the mouth and trachea, tension and gamma loop mistiming and the other antecedents of tremor, and also the characteristics of formant transitions in the coarticulation of syllables. All these were fed into a computer and weighted. Coupled to this sensing mechanism, the artificial mouth also possessed in its computer a comparator that, through focused beam electrodes on the scalp, stimulated the pain centers when error signals appeared or alternatively stimulated the pleasure centers when the stutterer did not make these errors but instead spoke fluently.

Using the artificial mouth in conjunction with a simple deconditioning program, Blaesus was able to make not only himself but other adult stutterers completely fluent after just a few hours of this biofeedback training. Some difficulties were experienced, among them the effectuation of transfer of the newly found fluency outside the clinic. This was solved by the invention of a portable biofeedback device incorporating certain key features of the clinical apparatus. Blaesus also reports that a few of his stutterers refused to wear the prosthesis and required some intensive brainwashing sessions before being able to tolerate it. When the usual relapses occurred, booster sessions using the artificial mouth soon restored the fluency. Blaesus stated that all of his subjects were able to discard the artificial mouth after only a month of intensive therapy. Despite his success, we note with some wry amusement that Blaesus found it very difficult to convince the stuttering specialists of his time that his invention was truly effective. Indeed, it was only after the councils of adult stutterers tried it out and organized their united support that the new device gained eventual acceptance.

Balbus Blaesus also recognized that one of the limitations of the artificial mouth was that it was difficult for very young stutterers to tolerate. Using his new allies, the now fluent members of the stutterer's councils, Blaesus managed to get legislation passed that forbade any stutterer to have a license to beget natural children. Though adoption was permitted, any adopted child of such a parent was required to undergo special training in the special clinics whether he stuttered or not. Though by this time there were few adult stutterers left, these and other stuttering children gave transitional employment to the specialists who staffed the clinics. But by the year 2700 they were no longer needed, and the stuttering clinics were closed.

Enough of this nonsense! Now may the present author of this fantasy soon be put to sleep and appropriately cryogenized, ultimately to be thawed out and resurrected in the year 3000 so that our future descendants will know what stuttering and speech pathology were like in the year 1974.

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