ADVANCED GENERAL SEMANTICS

WORKBOOK  III

Edited by Sanford I. Berman Ph.D.
In memory of

Alfred Korzybski

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THE INSTITUTE OF GENERAL SEMANTICS;

A BRIEF HISTORICAL SURVEY*

by

Charlotte Schuchardt Read

The words "Institute of General Semantics" no doubt mean something quite different to each of you. Whether your experience with the Institute has been for a long or a short time, this name represents some kinds of images, feelings, and thoughts. The Institute as an organization has Articles of Incorporation and By-Laws, legal guidelines which have changed very little over the years. Its main aims and functions have changed little, but the people involved deeply with its activities, the places and circumstances in which it functioned, have changed considerably over the past 50 years. Like a revolving kaleidoscope, there has been continual change in the relationships and patterns — relationships with the public at large, with students of the work, with other general semantics organizations, relations within the staff and among the Board of Trustees, changes in the cultural climate in which we have functioned; there were different places as our center, and different needs in the world.

There have been a number of severe crises in our history, when we did not know whether we could continue at all. Somehow we have been able to surmount them, and we are able to be here today together to celebrate that this indeed has happened: the institute is continuing to function, existing independently through the interest and dedication of people who have experienced the importance of the work.

It was my privilege to be a part of this history. I joined the staff in September 1939 as editorial secretary to Alfred Korzybski, but I had studied with him as early as 1936, and so I am speaking of my own experience in what I shall say. You will be aware, of course, that whatever I say will be only a brief highlighting of my perceptions and thinking and feelings, and very, very far from 'all'.

I will ask you to remember, or imagine from what you have read, what the world was like in 1938, and what it may have been like to live in Chicago at that time, for that is where the Institute began. Looking at a few headlines of the New York Times and Chicago Tribune we may read:

March 13, 1938: "Hitler Proclaims Annexation of Austria and Defies the World to Try to Stop It."
May 8, 1938: "Hitler and Mussolini Vow Friendship for All Time."
July 12, 1938: "1,200 Jews Taken to the First Nazi Camp."

"Why was the Institute incorporated in Chicago?" you may ask. Because that is where Dr. Douglas Gordon Campbell and Dr. Charles B. Congdon, psychiatrists at the Student Health...
Service of the University of Chicago, lived and worked. They were both deeply interested in Korzybski's work and wanted him to come there. Through Dr. Campbell, Cornelius Crane also became interested and contributed the initial funding for the Institute to be established. University students and others urged by Drs. Campbell and Congdon constituted a large percentage of the first seminar students. The campus of the University of Chicago was seething with the experiments of President Hutchins and Mortimer Adler, who were famous for their advocacy of a Great Books Program of Study.

New ground was being broken in many fields, and leaders in various disciplines, many of whom Korzybski had corresponded with in the process of writing his Science and Sanity, were invited to become Honorary Trustees of the Institute. A long list of such illustrious scholars accepted. With a beginning funding, and solid backing, the new Institute was launched in May 1938, with offices a few blocks from the University of Chicago campus.

Many of the future leaders in the new discipline of General Semantics came to those early seminars. Viewing a picture of attendees at these seminars we see Elwood Murray, Irving J. Lee, S. I. Hayakawa, Francis Chisholm, Wendell Johnson, O. R. Bontrager, Dr. Douglas Kelley and many others.

In September 1939 the rumblings of war in Europe became louder, and soon Hitler's armies invaded Poland and Belgium. In 1940 France fell and London was on fire from dropped bombs. The impact of some of these catastrophes on Korzybski has been recorded in his Introduction to the Second Edition of Science and Sanity, which he wrote in 1941. We know what happened on the 7th of December 1941, and thereafter. Many students who came to the Institute seminars joined the armed forces. As a veteran of the First World War, who wrote Manhood of Humanity from the agonies he felt as a result of the war, Korzybski was deeply involved with the daily news. Letters from students conveyed their anxieties and the help they found from reading. They carried Science and Sanity while flying over the Himalayan Mountains or while stationed in Alaska. In Army hospitals in Europe Dr. Douglas Kelley was using Korzybskian methods to help restore soldiers suffering from battle fatigue and fear.

In the midst of the war raging in Europe, the Institute held a Second American Congress on General Semantics (the first took place in 1935 at Ellensburg, Washington). This was in August 1941 at the University of Denver, only three years after the Institute was established. It was well-attended, with many fine papers published in 1943 in the volume Papers from the Second American Congress on General Semantics (M. Kendig, Editor).

Korzybski gave many seminars in Chicago — about six each year — as well as some in California, New York City and elsewhere. In spite of these developments we were in serious financial straits, for after our initial funding ended, we hardly had enough income to pay salaries, rent and other expenses. A very important support for us came from Mrs. Frances Dewing, the mother of Mary Morain, whose warm friendship and generous financial help was most helpful to us.

In 1942 a small group of Korzybski's students in Chicago came together to form the Society for General Semantics, whose aim was to interest the public in the new discipline, and to help the Institute do what its small staff could not do. Five dollars of their annual ten dollar membership fee was retained by the Society and the remainder was given to the Institute. Some
years later this Society became the International Society for General Semantics. *ETC.: A Review of General Semantics* was begun in 1943 with S. I. Hayakawa as its Editor, and Korzybski contributed many articles and suggestions for it.

The functions of the International Society have developed into a greater emphasis on publications, whereas the Institute especially emphasizes teaching and training through seminars. Thus we feel our functions are complementary, and we continue to work together in many ways. A number of our Institute Trustees are also on the Board of the International Society.

The first book to bring Korzybski to the attention of a large public was Stuart Chase’s *The Tyranny of Words*, published in 1937. And in the early 1940’s more books and articles began to be written. It was exciting for us when Hayakawa’s *Language in Action* was accepted by the Book-of-the-Month-Club in 1941. Irving Lee’s *Language Habits in Human Affairs* also appeared in 1941, followed later by Wendell Johnson’s *People in Quandaries*, which even to this day remains as one of our most sought-after books.

In those early years in Chicago, Lee, Hayakawa, Drs. Campbell and Congdon, Anatol Rapoport and others were lecturing at the University of Chicago and Northwestern University, etc: Korzybski and Kendig were also speaking and teaching, the second edition of *Science and Sanity* was published, there were articles in *Time* magazine and elsewhere about Korzybski and his work, and the list of books and reprints sold by the Institute was growing. Seminars were held in the large living room of the Institute building, while the students stayed in hotels nearby.

Elwood Murray at the University of Denver was infusing his Speech Department with general semantics methods, and many teachers in Speech Departments throughout the country became interested in the work. In 1945 Sam Bois, then a consultant for business executives in Montreal, came to his first seminar (although he came across *Science and Sanity* in 1939), and his books were later to be influential.

The staff at the Institute, on the average about six people, continued to be small and there was very little money. With our country heavily involved with the War, and many of our students in the armed services, it was a struggle even to get enough paper to print the second edition of *Science and Sanity*, paper was so scarce. Our staff was depleted with the illness of Pearl Johncheck, who had been Office Manager and Korzybski’s Confidential Secretary since the beginning. These tasks I included in my responsibilities after June of 1944. M. (Marjorie) Kendig was the Educational Director, and later the Associate Director.

This growth based in Chicago came to an end in the Spring of 1946, when we found that the Institute building which we were renting was sold by our landlady and the new owners wanted to live in it. That we had to move was perceived by us as a catastrophe, and indeed the process was exhausting. There was an extreme housing shortage in Chicago; in fact, when students came to seminars they stayed in nearby hotels if they were able to find a room, and often they had to keep moving from night to night, space was so difficult to find. Our August 1946 seminar was enrolled, and through our Trustee Robert Redpath, Jr., who knew the headmaster of Indian Mountain School in Lakeville, Connecticut, we were able to give the seminar there in the northwest corner of the state. Everyone enjoyed the new surroundings and the opportunity to live together in the dormitories.

We decided to stay temporarily in that area. The cost of having an office in New York
City was far beyond our meager funds. Kendig was able to buy a large old house (French Second Empire style) in Lime Rock, and the Institute became her tenant in December 1946. We stayed there for the next thirty-nine years.

It was a major challenge for the Institute staff to adjust to functioning in the country, 90 miles from New York, and many miles from a town of more than 2,000. Five miles from Lakeville, and too small to have a post office able to handle our mail, Lime Rock was a ‘ghost town’ in 1946, but there were many well-known private schools in the area.

While we were reorganizing in Connecticut, we had to meet another financial and psychological challenge: The Society for General Semantics found that it needed all its membership dues to be able to continue to function and could no longer contribute any of them to the Institute. The Institute, therefore, inaugurated its own membership structure in 1947 and became incorporated in the State of Connecticut. The addition of more Trustees, many from the New York area, was strengthening, and in the years 1947-1950 the Institute program was full. Seminars could no longer be given on the Institute premises for lack of space, but the summer and winter seminars were popular in private schools nearby and local inns.

The local New York Society for General Semantics, formally organized in March 1945, was developing, as well as Societies in Montreal, Los Angeles, San Francisco, Chicago, Ann Arbor, etc. The Society, now called International Society for General Semantics, moved its office to San Francisco. Some local societies became chapters of the International Society.

A Third Congress on General Semantics was held at the University of Denver in 1949. This was also the year -- in February 1949 -- when Korzybski gave his seminar at Yale University and held the Colloquium in which a number of outstanding Yale professors participated. Sales of Science and Sanity were rising and probably reached their highest peak in the years 1949-1950. The third edition had been published in 1948, as well as Selections from Science and Sanity, and Korzybski was working on the second edition of Manhood of Humanity, his first book.

Korzybski had been invited to a Symposium at the University of Texas in April of 1950 (in fact, the person who invited him is in this audience -- Dr. Robert Blake -- you will hear from him later). He had nearly finished his paper for it when, in the early morning of the first of March, he suddenly died, a few hours after suffering a coronary thrombosis. We did not know whether the Institute could continue to function. Kendig accepted the Trustees’ appointment as Acting Director and later, Director, and we immersed ourselves in the urgent tasks ahead. She inaugurated the publication of the General Semantics Bulletin that year, and two issues came out in 1950. The second edition of Manhood of Humanity was published in June. Our August 1950 seminar-workshop, the first without Korzybski, was well-attended, with the theoretical lectures given by Sam Bois. A new format was begun, which we have followed quite consistently since then.

Ray Bontrager became our chief lecturer on the theory, with Harry Holtzman adding an important new dimension of art, or “non-verbal abstracting”, as he preferred to call it. Neurosurgeon Dr. Russell Meyers gave his brilliant lectures relating the functioning of the nervous system to general semantics, while Marjorie Swanson, biochemist, dove-tailed with him, lecturing on “Scientific Epistemologic Backgrounds of General Semantics”, still an important monograph on our list of publications. We began the work on “sensory awareness” when
Charlotte Selver came to conduct the sessions, which I offered afterwards. We also included our version, first introduced by Walter Weese, of the newly developing work in "Group Dynamics" that was gaining popularity in this country, and many of our staff went to Bethel, Maine, for training where the National Training Laboratory held its sessions. We have continued in our seminar-workshops to strive for a balance and integration from many angles, including the theory of general semantics, its scientific underpinnings, some planned group interaction, and practice in psycho-physical integration, besides some creative expression usually through drawing -- relating all of these activities to the principles of general semantics.

Although there have been changes in our seminar staff as the next generation of leaders emerged, such as Robert Pula, Stuart Mayper, Kenneth Johnson, Susan Presby-Kodish and Bruce Kodish, and Milton Dawes -- our present leaders at the seminars -- we continue to seek a well-rounded program, and to try out new possibilities. Visiting Lecturers offer their own unique points of view within the general framework of the non-Aristotelian theory.

In the 1960's, as Kendig's health began to fail and she found it harder and harder to keep up the tremendous driving energy that had enabled her to guide the Institute as Director, we had to look for another Director. After her resignation in December 1964 -- twenty-four years ago -- the Institute was never again able to have a full-time Director on its premises (although she served as "Interim Director" from 1971 to 1975 while she was in and out of the hospital). I became Acting Director at various times when needed, traveling from New York City to Connecticut. Elwood Murray was our Director for two years (September 1967 to September 1969), with his office at the University of Denver.

During this period the Institute held many of its seminars at the University of Denver or Colorado Academy nearby. Christopher Sheldon followed him as Director for about eight months, traveling from South Norwalk, Connecticut. After that I was the Director until April 1983, when Robert Pula was appointed for a three-year term.

Besides the international conferences (since the 1950's in collaboration with the International Society), the Institute has also given conferences on teaching general semantics, on applications of general semantics to various professions, and special conferences of a theoretical nature. When Elwood Murray was the Director he organized a number of smaller conferences together with leaders in other disciplines such as General Systems Theory, on research in general semantics, psychosomatic medicine, and creativity, some of which led to published books of the proceedings.

Another important activity of the Institute, and a popular event begun in 1952 and continued to the present, is the annual Alfred Korzybski Memorial Lecture usually given in New York City. A long list of distinguished scholars in various fields working in a non-Aristotelian direction, have been chosen to give this Lecture -- people such as Buckminster Fuller, Fritz Roethlisberger, Abraham Maslow, Gregory Bateson, Robert Blake, and many others over the past thirty-six years -- making interconnections with many other disciplines. Our 1988 Korzybski Lecture will be given in New York by Jerome Bruner on November 11.

After thirty-seven years in Connecticut, the Institute decided to sell the large house it occupied. In 1983 our membership and publications office was moved to Ridgefield, Connecticut, administered by Thomas Nelson's AAV Publishing Company, while Robert Pula was the Director.
at our Baltimore office. This was a promising arrangement, but our expenses became too high for our income and it was impossible to continue it. We transferred all our functions to Baltimore. This also proved unworkable at such a distance from the center of activities and it became necessary to move once more -- this time closer to New York City in Englewood, New Jersey. This has many advantages of proximity to New York and the Institute Trustees who live nearby. But aside from our efficient Executive Secretary, Marjorie Zelner, most of the work of a Director is carried out on a volunteer basis by our President William Exton, Jr., and a small group of Trustees. After the arduous disruptive task of moving, our accumulated archival records, tape recordings, and library are now divided among several places. Thus our functioning has become fragmented, and we have not fully recovered from the processes of moving. We hope that this situation can be remedied as soon as possible.

Throughout the years our potential to contribute to the world what we could give has been hampered by lack of funds. The financial support and the concerned interest of our Members, without an endowment, have made it possible for us to go on.

We have been keenly aware of some of the handicaps that affected our ability to function as we might, and they have been written about elsewhere. To mention a few: the confusion of the name "General Semantics" with "Semantics", interpretations of "non-Aristotelian" as "anti-Aristotelian", having our base outside the academic community, even though with many connections. Also, the difficulties that many people find in reading Korzybski's book *Science and Sanity*, where the formulations first appeared in 1933, with the result that often readers do not go deeper than the more popular books about the work, useful and important as they are in giving different points of view.

I am impressed by the fragility and vulnerability of our organization, and simultaneously by its great strength -- a strength derived from a conviction on the part of those who have experienced it and worked with it, of the importance of the work in our culture and in ourselves.

Many of the principles have indeed permeated our culture, whether or not people know that Korzybski and other pioneers have been their source. We are, so to say, "catching up" in many ways to the 1933 formulations. For example, consider the surge of interest in so-called 'body-mind' connections, the functioning of the brain, our growing awareness that all aspects of our lives are much more deeply related than we thought possible. Our connections with our environment -- the earth, the sky, the air and water, other forms of life, our chemical environment, radiations, and so on, with many more to be discovered -- are being explored and forced to our attention.

The central place of *language* is becoming more appreciated, although a "linguistic sensitivity" seems to be only beginning in the general public. The world, perhaps, is becoming more *ready* to take seriously Korzybski's formulations. We may recall the assessment he made in 1941: "The separate issues involved are not entirely new; their methodological formulation as a system which is workable, teachable and so elementary that it can be applied by children, is entirely new." We have been given practical methods for a shift to a new orientation.

With the increasing world-wide awakening and groping for ways to deal with what is going on, a growing world population, and greater dangers, I see perhaps an even greater need than fifty years ago for what the general semantics formulations have to offer.
As an organization, the Institute has many projects to carry out, and possibilities for an expanded program. Most importantly, we need longer and deeper training of leaders in the work. This I consider vital for our future. There is much more to be done in the development of educational materials, in research, in the relating of our work to other disciplines, in publishing books, articles and translations, in carrying out historical studies and work concerned with the future, in ethics, in focussing on the needs of business executives and management. The list could go on and on. Some of these are being worked on now.

It is important, and a natural consequence of studying general semantics methodology, to diverge and utilize the principles and methods in new combinations, to apply them in our professional work or private life -- nevertheless, if we go deeply enough into attaining a non-Aristotelian orientation their application in specific cases will automatically follow. I feel it essential, therefore, that there be a center maintained for training, and for functioning as a clearinghouse of information, for guidance and development of various projects related to the expansion of the work on many levels.

The Institute began as an instrument for change in our culture, pioneering to bring our orientations into closer rapport with the advances of new knowledge and new needs. As world-views change, as they must, we who are involved with the work face the continuing challenge of staying in touch with new trends, of exploring without rigidity, clarifying, evaluating and assisting in bringing about the best of time-binding. Let us hope that the Institute’s leaders will be inspired by this challenge for another fifty years, and more.
March 25, 1939

For release Monday Noon, March 27

Excerpts from Forum luncheon address by Count Alfred Korzybski, at the City Club, Monday, March 27, in the Hotel Sherman. Subject: "General Semantics and You -- The Foundations of a Science of Man."

Count Korzybski, a Polish Nobleman and engineer by training, is the founder and director of the Institute of General Semantics, established in Chicago last year. His approach to the science of general evaluation, expounded in his books "Manhood of Humanity" and "Science and Sanity" has made a profound impression upon leading scientists throughout the world and has been acclaimed as a significant advance in general evaluation.

The term semantics is not new. It has been introduced into scientific literature by Michel Breal in his Essai de Semantique. The term is derived from the Greek semantikos, 'significant'; from semainein, 'to signify', 'to mean'. The original science of semantics is dead at present. I wonder whether it was not still-born, as it dealt only with the meaning of words defined by words while in life we are really interested only in the relationship between words and facts, words and relations, etc. In the work on General Semantics we wanted to preserve the term semantics because of its international character and its general applicability. As we are interested in the relation of words and facts, etc., I introduced the term General Semantics to indicate a general theory of values, a general theory of evaluation of facts, relations, 'feelings', etc., not of meanings by mere verbal definition. It must be emphasized that the term evaluation involves both 'emotions' and 'intellect', and so automatically does not split the personality into verbalistic fictions of separate 'emotions' and 'intellect'. In General Semantics we are interested in actual evaluational reactions, and not only what we say about them.

In General Semantics we originated a new experimental branch of natural science. My co-workers (psychiatrists, educators, etc.) and I have about two thousand cases which show very remarkable empirical results. I stress the empirical character of General Semantics; its main value depends on this.

Although evaluation is a perfectly standard term, its full implications are not fully realized. Thus, when we form a 'judgment' we evaluate. Sciences and mathematics represent a process of evaluations. If we hate or love someone, etc., we are evaluating; in fact, most of so-called 'psychological' reactions may be said to represent evaluations. Even a blush or a genuine smile may be considered organissal evaluations. It may be said that 'sanity' is proper evaluation, and that 'insanity' represents mis-evaluation.
"It is hardly necessary to emphasize what predictability means in private, national and international lives. With predictability many disasters would be avoided. This goes still farther and has a direct bearing on so-called 'intelligence' and capacity to 'think'. Endless personal examples could be given, but the present international situation is the best example.

"Any student must be amazed at the utter stupidity or treachery of those who control so-called 'democracies'. Where was their predictability? All their calculations failed, unless of course they calculated treachery. They played with and on words. In the meantime, ignorant, mostly sick politicians with power, throw big words of 'honesty', etc., yet they utilize United States' gangster methods and the democracies are helpless, throwing verbal 'protests' and accepting verbal 'apologies'. How about facts: a mad race of armaments is going on, ultimately a slaughter is coming, and you and I pay the price in money and blood.

"It must be clear that predictability depends on proper evaluation, yet every newspaper headline shows empirically extremely poor predictability of so-called 'democracies', and therefore poor evaluation. The predictability of gangsters is based on the lack of predictability on the part of the police.

"This analysis cannot be carried on further short of a volume, but any 'intelligent' and informed reader can supply his own details. It would seem, therefore, advisable to analyze the factors which make possible proper evaluation and so adequate predictability. Do we have examples of proper evaluation and predictability? We do. We have science, the validity of which is tested by predictability. Among others, predictability saves us from nervous shocks, and so involves factors of 'mental' health and so 'sanity'.

"We have been and are studying science, mathematics and psychiatry separately as some abstract disciplines, but we have never studied them as forms of the actual human living reactions which made them. In General Semantics we do that. We discovered the obvious: that science and mathematics, because of predictability, etc., represent human reactions of evaluation at their best, and 'insanity' represents human evaluations at their worst. By studying them as forms of human living reactions, not textbook disciplines, which after all were made by Smith1, Smith2, etc., we are bound to discover general methods of evaluation which make the 'best' and the 'worst'.

"Another preliminary: We happen to be a time-binding class of life which functionally means that a human child can start where the parent ended, which accounts for the development of science, civilization, etc., which animals can not do. Thus we have to learn from the past, analyze the present, plan for the future, and so must analyze methods (types of human reactions) utilized by Smith1, Smith2, etc., when they were producing their best or their worst and learn from them.

"Let me repeat once more, that proper evaluation is strictly inter-connected with predictability, and in fact, the empirical test of proper evaluation is verifiable predictability. We discover how science at its best involves factors of 'sanity', and so happiness, a more sane civilization, etc. Let us briefly investigate those factors. Let us analyze a map-territory relationship.
Empirically Chicago is located between San Francisco and New York. If we would build a map in which San Francisco would be between Chicago and New York, traveling by such a map would prevent predictability and the traveler could not foretell or calculate when he would arrive. He could not plan his traveling; neither could he have any security of achieving his goal. Obviously, for maximum predictability, a map should be similar in structure to the territory.

In this particular case, the order of cities in the map should at least have a one-to-one correspondence with the order of cities in the territory.

"I use the map-territory relationship because the characteristics are general for all existing forms of representation which include the structure of language. We observe 1) That a map-language is not the territory-fact, etc., 2) Map-language covers not all the characteristics of territory-fact, 3) Forms of representation are self-reflexive in the sense that an ideal map would include the map of the map, etc., and in language we can speak about language. These three premises are child-like in their simplicity, and yet involve a flat denial of the fundamental present, yet very ancient, unrevised, harmful premises. The third premise has been historically entirely neglected except partially in mathematics.

This self-reflexiveness of language, however, is on the bottom of most human difficulties in daily life as well as in science. One example must suffice: 'never say never', or the famous medical joke: 'always and never are two words you should always remember never to use in medicine'. We must notice that linguistically we use only one term - say, 'never', while in this context the two have entirely different meanings, one unlimited, limiting the other one. Therefore, in a meaningful language, with proper evaluation, we should have two terms instead of one term 'n e v e r'. This, as in mathematics, can be accomplished by use of indexes, etc.

"As we have seen, for maximum predictability, we must have a map-language similar in structure to the territory-facts. The next crucial problem is to investigate empirically whether our present map-language is similar in structure to the territory-facts. We know empirically that 'space' and 'time' do not exist separately, otherwise they can not be divided, and so the facts are non-elementalistic. We know, on the other hand, that verbally we can separate or split them into fictitious elements which do not exist as such. In other words, that the structure of the existing language is elementalistic where the facts are non-elementalistic. This goes much farther. Thus, in actual life we can not split 'body' and 'mind' 'emotions' and 'intellect', etc., while verbally we can do that quite happily, and speculate uselessly on these split fictions. We conclude that this elementalistic language is not similar in structure to a non-elementalistic world and ourselves. Let us analyze further. We find that every 'chair', 'match', 'house', 'horse', 'man', etc., is different, while the old language of intensional structures has only verbal definitions for verbal fictions called, say, 'man', 'chair', etc., emphasizing similarities and disregarding differences. By extension we have only actuality, chair1, chair2, etc., Smith1, Smith2, etc., which are actualities, not verbal fictions and verbal definitions. We conclude that the structure of the old accepted language being elementalistic and intensional is not similar in structure to the facts of life and ourselves. This is a conclusion reached by
inspection of facts of ordinary life and scientific work and also
linguistic facts concerning structure of language which have been
entirely neglected in the past.

"The conclusions we must draw from these obvious observations
are startling and extremely far-reaching, involving fundamentally
the future of mankind and civilization.

"Because the structure of the present language is definitely
and empirically not similar in structure to facts of life and
ourselves, proper evaluation and so predictability in our human
affairs is thoroughly impossible except by accident.

"Another more serious consequence of the neuro-linguistic
and neuro-semantic chaos is due to the lack of a science of man
by which I mean the lack of application of standard scientific
methods to the affairs of man. With our present intensional
verbalistic attitudes which follow the structure of language,
agreement between individuals and groups is in principle im-
possible. With a change to extensional orientation, strictly
connected with the extensionalization of the structure of
language, disagreement becomes impossible. Judging by develop-
ments in recent world history it appears that the white race,
and so civilization, is suiciding. We must make a serious
analysis of the neuro-linguistic and neuro-semantic factors
involved in our present situation and that realization may,
perhaps, help us stop the suicide of our world."
Science, Sanity, and Humanism

ALFRED KORZYBSKI

I am grateful to the Editor of The Humanist not only for inviting me to do the unusual—review my own book “Science and Sanity”1—but also to discuss the type of work we are doing at the Institute of General Semantics. Those who know my work have no doubts about my sympathies with the humanists and the aims of this publication. The aims of “Science and Sanity” were humanistic, but the author, being an engineer and a mathematician by training, was interested in producing something not sentimental, but workable. Hence he tackled the very difficult and often ungrateful task of the revision of the aristo-telian system (pp. xx, xxxi and xxii). Such a revision is frankly based on physico-mathematical methodology, besides knowledge of psychiatry and other sciences.

In the limited space of The Humanist I will be able only to point out briefly the aims, methods and techniques of a non-aristotelian system, and the interested reader will have to go to the sources to find more material. Going to sources is unavoidable as a scientific issue. It is known to be misleading to quote from opinions of others, or opinions of opinions, instead of studying sources, because under such conditions the picture is never adequate, as the reader misses the context, and every kind of unnecessary misinterpretations follows.

The term semantic is derived from the Greek semantikos, ‘significant’, from semainein, “to mean”, “to signify”, and was introduced into literature by Michel Breal in 1897. Breal stressed “meaning” as such. It was a very interesting and important piece of work, but it was not really workable. Lady Welby introduced “signifies”, or a theory of “significance”, which is a broader, more organismal interpretation of “meaning”. Historically this important step was not appreciated or effective enough, as it lacked a technique, and so nothing of much importance happened.

The present author, knowing the work of his predecessors, took an engineering point of view in the sense that theories should be workable and teachable, with practical results, even on the level of elementary education. This led to the next step; namely, his formulation of a general theory of evaluation, which has very little to do with “meaning” as such, but deals with the organismal neuro-semantic reactions of an organism-as-a-whole-in-an-environment, involving psychosomatic issues. He questioned himself, “Why is it that bridges built by engineers as a rule do not collapse, and even if they do collapse, errors of

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calculations can be found immediately?" "Why is it that human structures such as social, political, and economic structures collapse sporadically, and all we have to show historically for our pains are wars, revolutions, slaughter, ruin, etc.?" It was a knotty problem, and it took many years to solve it. The solution ultimately turned out to be very simple, yet thoroughly unorthodox and unexpected. The author asked further, "What do the engineers do when they build a bridge?" The answer was factual and functional; namely, that the engineers talk to themselves in a special language called "mathematics" (they calculate), and somehow they get proper evaluation, predictability, etc., and build their bridges by the use of that special language called "mathematics".

The same question was asked in connection with human structures which periodically collapse. The answer was equally definite. Politicians, priests, philosophers, educators, etc., the specialists in collapsible structures, use a meta-physical language in which they discuss the problems with themselves or others, their predictability is practically nil, and so the structures they build collapse, as should be expected. Such observations, based on the study of facts, led the author to the investigation of neuro-linguistic issues. It became obvious, once stated, that from the point of view of proper evaluation, predictability, etc., there must be some fundamental difference between mathematical language, which predicts correctly, and ordinary language, which produces very poor predictability. This analysis led to further investigations of the structure of language. Some shocking discoveries were made; namely, that mathematical language is similar to the world and our nervous system, and that our ordinary language is not (pp. 247-287). Under such conditions in ordinary life we can not expect proper evaluation and so predictability.

The territory-map (fact-language) relationship was analyzed. Most of the readers drive a car, and will understand easily the difficulties, unpredictability, leading perhaps to disasters, if we travel by a map where San Francisco is between Chicago and New York, just because the map was not similar in structure to the territory. Investigation

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Not to go further, the present day tragedies are a shocking example of lack of predictability. The Axis, with their rationalizations, cannot possibly win in the long run in spite of the fact that technically they can "blitz" and crush many of their enemies, as they have done so far. It is known historically that it is one thing to subjugate countries in a military way, but it is much more difficult to keep them subjugated. The Axis can win battles, one after another (due to scientific achievements based on mathematical language), but sooner or later the war has to end through mere exhaustion. Axis slave labor will be eliminated, German soldiers will have to go back to toil and keep Germany alive, and who will police the conquered countries which seethe with hatred against the oppressors? It will turn out that military victories are not enough when there is poor predictability in other fields. How about our own predictability, with different Wheelers, Lindberghs, Fishers, McCormicks, etc.? As a matter of fact, what we witness today is not the birth of a "new order", but the death-bed agonies of an old and today obsolete aristocratic order.
shows that our ordinary language (our "map") is not similar in structure of the facts of life. To illustrate, the ordinary language turns out to be elementalistic in structure, in which for example, "body" and "mind", "emotion" and "intellect", "space" and "time", etc., can be divided verbally, but can not be divided in fact, or by extension. In other words, an elementalistic map-language is not similar in structure to the territory-facts.

Investigation shows that in actual life we deal with absolute individuals, be it Smith, or chair, etc., and not primarily with definitions of "man", or "chair", etc. Orientations by generalizations amount to evaluations by definitions, technically known as orientation by intension (spelled with an i). Obviously such evaluations are not similar in structure to the facts. If we want our evaluations closer to the facts we have to orient ourselves by extension (pp. xxv, xxvi), which means using habitually the extensional devices: indexes, dates, et ceteras, hyphens, and quotes (pp. xxviii ff.). Such orientations by facts are the key problem in an extensional non-aristotelian system. Stated so simply, this may appear trite. However, in practice it takes months if not years to make that kind of re-orientation habitual. We are up against neurological habits which are most difficult to overcome, as they actually require a whole reorientation of a given individual. When one works in the non-aristotelian field of general semantics, one struggles with such difficulties, the general feeling is that we deal with an aristotelian mass neurosis, which is only intensified among the "mentally" ill. Experience in thousands of cases shows the beneficial results achieved by my students and collaborators, mostly educators, medical men, psychiatrists included, with their students or patients, in the adjustment of the given individual to reality, and away from metaphysical fictions.

Here we come up against different theories of "meaning", which still follow the traditional aristotelian system, and so turn out to be unworkable. In a non-aristotelian system we are not dealing with elementalistic "meaning", but we deal with a general theory of evaluation, which is non-elementalist and therefore non-aristotelian. It must be stressed that evaluation is an organismal and non-elementalistic reaction which integrates "intellect" and "emotions" without artificial verbal splittings. Even a blush or a smile can be used as an example of organismal evaluation.

But even heavier considerations enter here; namely, what is called the "natural order of evaluation". Thus, the physico-chemical process of, say, an "apple", is more important for life than the object which our nervous system abstracts or makes up. An object is more important than

a description; and a description is more important than inferences of different orders. As the author shows, we unfortunately live by the reversed, pathological order; namely, objects are evaluated as more important than processes because the process-character of nature is disregarded. Similarly, particularly on the psychological level, often through identifications we ascribe more importance to our slogans, dogmas, definitions, etc., than to the actual psychological reactions on the silent unspeakable level, which may be called the "objective" level. Also, through confusion of orders of abstractions, our life is lived mostly by inferential dogmas, creeds, etc., which are evaluated as if they were descriptions of facts. Only in science do we abide by the natural order of evaluation. For lack of space it is impossible to give more details, and the reader is referred once more to sources (see index).

It must be stressed that the issues analyzed here are mostly not new, neither are they a discovery or invention of the author. These discoveries are more than sixty years old, but they had never been systematized methodologically, and so made workable for elementary education. The main aim of a non-aristotelian system is exactly to systematize and formulate modern scientific methods in a form which would be applicable to daily life. The author contends that it is unreasonable and positively harmful to train generation after generation in intensional delusional evaluations, split personalities, etc., which certainly prevent the sanity of the race, and so humanism. But of necessity for wide application of a non-aristotelian system definite techniques needed to be formulated, which so far have been proved to be efficient, sometimes beyond expectations.

Intensional (by definition) orientations must involve identifications, which is not only a most serious symptom in "mental" illness, but also a source of serious difficulties in our daily life (pp. xvi ff. See also index.). Obviously it is not denied that for any rational discourse we must postulate the principle of symbolic uni-va\(1\)lence. But this certainly is not "identity".

To illustrate the difference of orientation by intension or extension, I can give no better example than to recall the following story: "When Calvin Coolidge was in the Massachusetts legislature, another member in session asked him whether the people where he came from said, "A hen lays, or a hen lies." 'The people where I come from,' Mr. Coolidge replied, 'lift her up to see.'"

Facts first, definition next, not vice versa.

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6Reader's Digest, October, 1942, p. 140.
Our ordinary language and training is based on definitions (intension), disregarding entirely *undefined terms* which we can not avoid, while our orientations should be based on mature contemplation of facts, i.e., extension. I can do no better than quote Professor Cassius J. Keyser: "If he contend, as sometimes he will contend, that he has defined all his terms and proved all his propositions, then either he is a performer of logical miracles or he is an ass; and, as you know, logical miracles are impossible."  

Further analysis disclosed that the issues are still deeper and require a revision of fundamental systems to conform with modern life and modern science. Historically the Euclidean and Newtonian systems were only technical applications of the older aristotelian system. The revision of the Euclidean system to a non-Euclidean was comparatively the simplest, and happened first. The revision from the Newtonian system to the non-Newtonian (Einsteinian) system was much more difficult, yet was forced upon us by the necessity of dealing with electricity and quantum phenomena. I speak from sad experience, that the revision from the aristotelian to a non-aristotelian system was the most laborious and difficult, and so happened the last, and only in 1933. The reader may be forewarned that the latest revision was laborious and difficult not only for the author, but also for the rest of us, as it requires neurological re-training, which automatically and beneficially changes our orientations in science and life. Yet once this re-training has been achieved, the issues become much more simple than in the old way.

I am in sympathy with the aims of humanism, and my first book, "The Manhood of Humanity: The Science and Art of Human Engineering," contributed to the introduction of the human factor into United States industry with constructive results. Yet somehow I feel that humanism will remain an unattainable "ideal" so long as the humanists do not base their strivings on the methods of mathematics and science, and the study of psychiatry, as manifestations of human semantic reactions. Any student of clinical psychiatry can not help but realize that humanism in the abstract is an impossibility under the old aristotelian intensional conditions, and will not help mankind in the larger sense. And yet it is desirable that humanity should become more human. Since 1933, including his work conducting seminars, etc., at the Institute of General Semantics in Chicago, the author has had at least 2,000 students personally, mostly professionals, who apply the non-aristotelian methodology to their students, patients, etc. In ninety percent of cases, which by now amount to many thousands, some beneficial results
follow, in different degrees. The papers presented before the Second American Congress on General Semantics show the wide application of non-ristotelian methods of evaluation. However, there still exists today a harmful confusion between systems—the old "semantics" (aristotelian theory of "meaning") and "general semantics", the modus operandi of a non-aristotelian system, involving extensional methods of evaluation, to be verified empirically.

PROGRESSION

I am the unknown in the known; the known in the unknown.

I am the interrupter of space, the disturber of elements, the disrupter of continuity, the unifier of disjoined potency.

I am the experimenting experience, the accident of great accidents.

I am the voice that stirs the world with question marks; my words are trembling signs, pointing to my desires asleep in the shell of earth's yearning.

I move, bent with the burden of what is yet to be; and I lean on what was, what is no more. The between is my staff; with it I sound my steps and tap the stars; with it I prod inertia and jab at energy.

I share myself with the seasons; I sing with the wind, and weep with the rain. My laugh mingles with the plays in the sun. The moon feeds me love in bowls of romance. The stars are my crumbs of ambition, which I knead into loaves of hope.

In my rushing reach into time I stumble over space and trip on the edges of night. I seek for joy through the woods where the branches tower, and the only leaves I can touch are the wind-blown tinted ones.

I wonder at everything, my eyes asking endlessly, and only the passing stream troubles to answer; and all it says, all it tells me, is that I am a neuron of the known in the nerve of unknowingness.

—Jack Greenberg
GENERAL-SEMANTICS FORMULATIONS RELATED TO HUMAN COMMUNICATIONS PROCESSES, HUMAN EVALUATING, etc.

process of abstracting
- structurally-determined (i.e., pre-attitudinal, selecting/filtering)
- transducing
- integrating (pre-conscious)
- projecting (pre-conscious; potentially conscious)
- languaging (multi-ordinal; self-reflexive)
- spiral character of abstracting
- Attitudes, preferences, etc., through neuro-linguistic mechanisms, complicate but do not fundamentally change the process; all human evaluating derives from and constitutes abstracting.

Structural Differential
- as map (model) of the abstracting process, accumulation of and transmission of knowledge (information), etc.

semantic reaction
- total, 'emotional', 'intellectual', i.e., psycho-logical response of a (human) organism-as-a-whole to a stimulus; broader than what is traditionally called 'meaning'
- symbol: human, delayed, conditional
- signal: animal, immediate, unconditional, animal-human continuum

multi-use of terms
- lexical ('same' term, different definition)
- contextual ('same' term, different situation)
- neurological ('same' term, different brain)

multiordinality of terms
- 'same' term, different evaluations related to different orders of abstracting; 'meaning' = f(order of abstracting)

orders (levels) of abstracting
- acts

orders (levels) of abstraction
- results in time T (artificially 'fixed' for analysis) which affects further analysis

structure
- order, relations, function as mutually defining terms

structure
- (relationships, pattern, order, arrangement, observe-observed continuum in time) as only 'content' of knowledge -- breakaway from the search for 'essences', 'things in themselves', etc. General-semantics as a non-essentialist discipline.

Sapir-Whorf-Korzybski Hypothesis
- "... a language, any language, has at its bottom certain metaphysics, which ascribe, consciously or unconsciously, some structure to the world." (Science and Sanity, p.89) "We do not realize what tremen-
Sapir-Whorf-Korzybski Hypothesis (cont.)
dous power the structure of an habitual language has. It is not an 
exaggeration to say that it enslaves us through the mechanism of s.r. 
(semantic reaction) and that the structure which a language exhibits, 
and imposes upon us unconsciously, is automatically projected upon 
the world around us. This semantic power is indeed so unbelievable 
that I do not know any one, even among well-trained scientists, who, 
after admitting some argument as correct, does not the next minute 
deny or disregard (usually unconsciously) practically every word he 
has admitted, being carried away again by the structural 
implications of the old language and his s.r.” (Science and Sanity, 
pp.90-91)

intensional orientation over-dependence on definitions, verbalizations, etc.

extensional orientation while maintaining linguistic formational capabilities, priority 
assigned to non-verbal (‘silent’) orders of abstracting

extensional devices as neurolinguistic prophylactic (see above)

non-elementalism

general semantics as a meta-communicational (meta-linguistic, meta-system) system

g.s. as method of evaluation relatively ‘neutral’; no fixed ‘content’; an open system: a 
propositional calculus; modern, open, applied epistemology

neurolinguistic feedback ‘feedback’ borrowed from Norbert Wiener but anticipated by 
Korzybski in his formulation of the circular-spiral character of 
abstracting and neurological emphasis. (See Structural Differential, 
Science and Sanity, pp.386-411)

neuro-semantic environments as environments

non-Aristotelian not anti-Aristotelian, but broader and corrective

non-identity of level (orders) of abstraction(ing) necessary for fully (fullest) 
functioning humans

science as method (not to be confused with scientific ‘knowledge’ at a date, 
technology, behavior of scientific societies, etc.) recommended as 
method for sanity

life as an asymmetric relation irreversible process-at-a-date: “you can’t (1991) unboil an egg.”
uncertainty (restricted Heisenbergian and general Korzybskian) accepted as at heart of human evaluating
time-binding as characteristic human activity, leading to:
-- formation of cultures
-- formation of culture-studying cultures
-- rejection of space-binding (excessively competitive) ethics
language as tool of time-binding
language-referent relationships

verbal/non-verbal (silent) levels

verbal-non-verbal isomorphy (while maintaining awareness of non-identity)

logical fate (premise-conclusion relationship)

fact/inference distinction (levels of abstraction)

multi-valued vs. two-valued (either-or) orientations

types of questions operational
speculative
fun
pathology-inducing (lack of consciousness of abstracting)

I.F.D. disease

H = ME + MM

Abstracting: A technical term in general-semantics; a dictionary won’t help.

A personal process (an activity with recognizable phases), somewhat different for each person; involving:

a) Structurally-determined selecting/filtering (sensory and neural abstracting); including transducing (e.g., for the eye, from electromagnetic vibrations at 186,000 m.p.s. to electrochemical at 225 m.p.h. in the large neural fibers.)

b) Functional selecting depending on past experiences, moods, needs, interests, etc.

c) Integrating -- summarizing, gestalting

d) Projecting -- “the tendency of brains to allocate their own experience elsewhere.” Robert Pula
e) Self-reflexiveness -- including reactions to reactions, etc.

f) Talking (symbolizing) to self and others, which involves:
   Multiordinality -- many possible orders of abstraction;
   Self-reflexiveness -- talking about talk, statements about statements, etc.

The entire process is potentially self-corrective and produces results that can be communicated.

This process makes it clear that

Our maps, non-verbal or verbal, are not the territory. Our maps cannot represent all of the territory. Any map represents a territory-map maker synthesis; this must be taken into account in evaluation the map.

Since the map is not the territory, what we seek is a map similar in structure to the territory.

The Uncertainty Umbrella

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General-Semantics Formulations: A Seminar List

Editorial Note: What follows is an approximation of a list of original korzybskian formulations and other terms and formulations that were at hand when he began his work but to which he gave prominence and particular emphasis in his system. I have used this list at Institute of General Semantics summer seminar-workshops (to keep myself on track) since early in the 1970s. I have fleshed them out just a bit for inclusion here. For a fuller account of this general-semantics vocabulary, the reader is advised to go to the source: *Science and Sanity*, and to Korzybski's later iterations of his system-function. If you want to be just a tad less challenged, you might try my general-semantics glossary which appears in *ETC.: A Review of General Semantics*. That series when completed (or stopped by fiat) will appear as a book in (ah, how we predict) 1998.

**fundamental assumptions:**

* process character of the non-verbal 'universe', ourselves included. Basing himself on Einsteinian, non-Newtonian physics, Korzybski recognized that whatever we talk about constitutes a *process* (dynamic matter-energy-space-time gradients, etc.); he determined to create a system (system-function: see below) that, if learned, would allow humans to formulate in such a way as to achieve a closer match (structural fit) between what is symbolized (said, written, pictured, etc.) and what is symbolized about. The symbolizing is necessarily a relatively 'static' structural-relational representation of dynamic processes-events, so appropriate formulating, representing, etc., should constitute an on-going activity, never 'final', in which the verbal 'static' and the non-verbal *dynamic* interweave under the rubric of consciousness of abstracting (see below).

* humans defined as time-binders (the time-binding class of
life). Noting that humans share certain biological characteristics and activities with plants (energy [chemistry, etc.]-binders) and animals (space-binders), Korzybski maintained that humans are nevertheless not animals, by virtue of their evolved, neurologically based time-binding capacity: the capacity to draw on the formulational 'capital' of past generations, make contributions to the 'fund' in the present, and 'invest' the results in (i.e., toward) the future. He saw this process as the mechanism which powers the building of cultures, personal development, etc. "Not things changing, but change thinging" (Pula, 1968).

* language as the tool of time-binding. Precisely the human symbolizing capacity in its myriad forms, but especially humanity's languaging behavior, constitutes the enabling factor that makes time-binding possible. The structure of languages, then, must be of critical importance in determining how time-binding will go.

* structure as the only content of 'knowledge'. Korzybski defined structure most succinctly as "a complex of relations." He maintained that relations (structure, order, relations as mutually defining 'undefined' terms) are all we can ever know; that, by virtue of the way human nervous systems/brains abstract (see below), our 'knowledge is always mediated; that we can not 'know' so-called 'essences'; that we can only 'know' as unique 'knowing' (uniquely, individually abstracting) organisms. These 'knowings' can manifest
similarities, but never sameness, i.e., they can not be identical -- there are always differences from brain to brain which must be recognized and respected if 'agreement' that counts for something is to be achieved. The basic relationship for human evaluators is formulated in this coupling: observer-observed.

Three central, ubiquitous, foundational terms

- mechanism (not to be confused with machine-ism). How something (anything) works; the basic processes by which things happen; the underlying 'engine' (usually not directly observable, so must be inferred) which 'drives' whatever we are able to observe and talk about. I have maintained that when you can't specify the mechanism, you don't know what you're talking about.

- function. The expression of a relationship of dependency such that, if a factor called the independent variable is changed, a related factor called the dependent variable is also (automatically) changed. (The 'independent' variable in this function [expression, formulation], given the interconnectedness of things, is very likely a dependent variable with relation to prior independent variables, which in turn are dependent variables ... etc!

The simplest representation of a function in mathematical notation is \( y=f(x) \), which reads "\( y \) is (or equals) a function of \( x \)." Korzybski absorbed the mathematical function formulation into general-semantics to promulgate the notion
that even outside mathematics all relations that we know about are functions; e.g., "My formulating is a function of the structure of the language I use"; "My level of alertness in the morning is a function of whether or not I've had a cup of coffee," etc. In other words, nothing exists in static isolation; rather, all the things we know of exist as functions of a dynamic plenum (fullness).

Building on Russell, Keyser and Sheffer, Korzybski elaborated higher order functions to the increasingly concatenated sequence from propositional functions, to doctrinal functions to his own unique system-function (with a hyphen): general-semantics.

- structure. Korzybski defined structure most succinctly as "a complex of relations," relations implying some definite order. The three terms, structure, order and relations he took and consciously, openly formulated as basic undefined terms which are, however, mutually defining. Roughly synonymous with structure(s) (understood as dynamic expressions of the plenum) are pattern(s), sequence(s) (patterns-in-time), arrangement(s), etc.

Korzybskian Terms, Formulations

- abstracting (a dynamic process/activity) involving:
  - structurally determined selecting/filtering
  - transducing (e.g., electro-magnetic (light) to electro-chemical (seeing)
  - pre-conscious integrating (constructing 'gestalts',
etc.)

- projecting (still pre-conscious, but potentially conscious: we can become aware of our own projecting [consciousness of abstracting]). Projecting defined (Pula) as "the tendency of brains to allocate their own experience elsewhere."

- self-reflexive: semantic reactions to semantic reactions, etc.

- talking (symbolizing) to self and others at many levels, involving multiordinality of terms and mechanisms, ongoing self-reflexiveness (talk about talk, statements about statements, semantic reactions to semantic reactions), etc.)

- potentially (through neurolinguistic feedback) self-correcting

- **Structural Differential as map (model) of the abstracting process, accumulation of, modification of and transmission of knowledge (information) over 'time', in individual abstractors and in the community of time-binders.**

- **Goal of general-semantics training: consciousness of abstracting with applications deriving therefrom.**

- **semantic reaction**: total, 'emotional'-'intellectual', i.e., psycho-logical, response of a human organism-as-a-whole to an environmental or intra-organismic stimulus; broader than but inclusive of what is traditionally called 'meaning'.

- **symbol reactions**: human, delayed, conditional.
- signal reactions: animal, immediate (undelayed), unconditional
- animal-human continuum; the conditional-unconditional gradient.

- multi-use of terms
  - lexical: 'same' term, different dictionary definition
  - contextual: 'same' term, different situation
  - neurological: 'same' term, different brain

- multiordinality of terms and mechanisms: 'same' term, different evaluations related to different orders of abstracting; 'meaning' = \{ (order of abstracting)
- orders (levels) of abstracting: acts
- orders (levels) of abstraction: results at 'time', artificially 'fixed' for analysis, which affect further abstracting

- structure as only 'content' of 'knowledge' -- breakaway from the search for 'essences', 'things in themselves', etc.

General-semantics as an anti-essentialist system.

- Nietzsche-Korzybski-Sapir-Whorf Hypothesis: "... a language, any language has at its bottom certain metaphysics, which ascribe consciously or unconsciously some structure to the world." (Science and Sanity, p. 89). "We do not realize what tremendous power the structure of an habitual language has. It is not an exaggeration to say that it enslaves us through the mechanism of s.r [semantic reaction] and that the structure which a language exhibits, and imposes upon us
unconsciously, is automatically projected upon the world around us. This semantic power is indeed so unbelievable that I do not know anyone, even among well-trained scientists, who, after admitting some argument as correct, does not the next minute deny or disregard (usually unconsciously) practically every word he had admitted, being carried away again by the structural implications of the old language and his s.r."

(Science and Sanity, pp. 90-91.)

*intensional orientation*: over-dependence on, over-confidence in definitions, verbalizations, etc. "If I can define it, I know it." Involves identification, i.e., confusion of orders of abstracting; misconstruing the verbal for the non-verbal.

*extensional orientation*: while maintaining neurolinguistic, formulational capabilities, priority assigned to non-verbal ('silent') orders of abstracting.

*extensional devices as neurolinguistic prophylactic*: indexing (non-allness, non-identity of class members, individuation); dating (process, non-identity of a named 'thing' with 'itself'); habitual use of et cetera (non-allness), hyphens (non-elementalism), single quotes (to tag suspect terms), use of qualifying terms ('some', 'many', etc., carefully evaluative adjectives, adverbs, etc.).

*non-elementalism*: to combat elementalism, the erroneous verbal splitting of what cannot be found 'split' at non-verbal levels, e.g., body and 'mind', space and time, observer and observed, etc. Correction: use of the hyphen to 'rejoin' what
was not split in the first place or, preferably, finding alternative usages which are not elementalistic, avoiding elementalistic terms, e.g., 'mind': brain (nervous system/brain) or semantic reactor serve well. ("Neuroscience must now put the hearse before Descartes": Pula.) Other elementalisms and their replacements: 'concept', 'idea': formulation; 'universals' and 'laws' of nature: observed regularities, generalizations; 'time': duration, measured process, space-time events; 'meaning': semantic reaction, evaluation, etc.

- general-semantics as a meta-communicational (meta-linguistic, meta-system) system
- neurolinguistic feedback (Pula, 1968): "feedback" borrowed by Korzybski in 1948 from Norbert Wiener, but anticipated by Korzybski in his formulation of the circular-spiral character of abstracting and his neurological emphasis. (See Structural Differential, Science and Sanity, pp. 386-411.)
- neuro-semantic environments as environments
- non-Aristotelian not anti-Aristotelian, but broader and corrective, including Aristotelian as a special, limited case
- non-identity of levels (orders) of abstraction (-ing) necessary for 'fully functioning' ('sane') humans
- science as method (not to be confused with scientific 'knowledge' at a given date, technology, behavior of individual scientists, scientific societies, etc.) recommended as method for sanity
- *life* as an asymmetric relation; irreversible processes-at-a-date: "You can't (1997) unboil an egg." You can't uncoagulate a corpse. "You Kant go Hume again." (Pula)

- **general-semantics as method of evaluation**
  - relatively 'neutral'
  - no fixed 'content': the 'content' of general-semantics is itself. (The only fixed 'content' in the usual sense is the preference for positive, cooperative time-binding, with ethical imperatives deriving therefrom. There are no 'official' general-semantics positions re politics, social issues, etc.)
  - an open system
  - a propositional calculus
  - a system-function
  - modern, open, *applied* epistemology


- **uni-substantialism** (Pula, 1995). There seems, given what evidence we have (1997), only one 'substance' which constitutes 'the world', 'the universe', etc., we humans included. The term is consciously non-elementalistic; it does not split the world into 'matter' and 'spirit', 'entities' so different as to exist, literally, in 'worlds apart'. See Robert P. Pula, "A General Semantics Glossary (Part XVII):

- **language-referent** relationships. As with Tarskian semantics, general-semantics is concerned with the relationship of words to 'things', but in a more rigorously structural sense, emphasizing the neurolinguistic factors for the individual language user. Verbal/non-verbal isomorphy, while maintaining awareness of non-identity: "The word is not the 'thing'." "The map is not the territory." "Maps are self-reflexive."

- **logical fate**: premise/conclusion/behavior relationships

  "From premises conclusions follow, inexorably." Keyser/Korzybski

- **multi-valued vs two-valued (either/or) orientations**

- **types of questions**
  - operational, extensional
  - speculative
  - fun
  - pathology-inducing (lack of consciousness of abstracting, involving identification)

- **I.F.D. disease**: idealization (ideal, non-extensional expectations), repeated frustration, eventual demoralization (depression, despair, etc.)

- **Korzybski's 'Happiness Formula':** $H = ME + MM$; happiness 'equals' (may derive from) minimum expectations plus maximum motivation.
CHAPTER 7

THE ROLE OF LANGUAGE IN THE PERCEPTUAL PROCESSES

By Alfred Korzybski

It is my particular privilege, as I am not a specialist in the field of psycho-logics, to participate in this symposium dealing with such a vital subject. The topic and main divisions of this Chapter were suggested to me by the organizers of the symposium, and I am glad to abide by them.

In my work I have found that there are some simple principles underlying the subject matter which I will attempt to convey here. More details may be found in the bibliography given, and the large amounts of other related literature available.

Not dealing with the problem of "perception" directly in my work, I shall use this term here in the vernacular sense. I do not consider myself qualified to define it, and so shall use quotation marks to indicate my nontechnical treatment of this type of human reactions. I cannot avoid dealing with the problems of "perception" indirectly but will do so from a different angle.

The Effect on Perceptual Processes of the Language System

Perhaps a story from the European underground under Hitler would be a good illustration. In a railroad compartment an American grandmother with her young and attractive granddaughter, a Romanian officer, and a Nazi officer were the only occupants. The train was passing through a dark tunnel, and all that was heard was

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1 Alfred Korzybski died on March 1, 1950, while doing the final editing of this paper. Miss Charlotte Schuchardt, his editorial secretary, in a letter made the following statement regarding the final form of the manuscript: "It should be stated that he did not complete the final editing of this paper. The editing which I did after his death was minor, and I am grateful for the assistance of some members of the Institute staff. Yet I must assume the responsibility both for the slight editing, and also, particularly, for not making editorial changes which he might have made."

2 On the special uses of hyphens and other printed symbols as "extensional devices" in this chapter, see pages 192-93.
a loud kiss and a vigorous slap. After the train emerged from the tunnel, nobody spoke, but the grandmother was saying to herself, "What a fine girl I have raised. She will take care of herself. I am proud of her." The granddaughter was saying to herself, "Well, grandmother is old enough not to mind a little kiss. Besides, the fellows are nice. I am surprised what a hard wallop grandmother has." The Nazi officer was meditating, "How clever those Romanians are! They steal a kiss and have the other fellow slapped." The Romanian officer was chuckling to himself, "How smart I am! I kissed my own hand and slapped the Nazi."

Obviously it was a problem of limited "perception," where mainly "hearing" was involved, with different interpretations.

Another example of "perception" could be given which anyone can try for himself. In fact, I suggest that this simple demonstration should be repeated by all readers of this paper. The demonstration takes two persons. One, without the knowledge of the other, cuts out large headlines of the same size from different issues of a newspaper. The subject remains seated in the same position throughout. He is shown one of the headlines at a certain distance. If he is able to read it, it is discarded. Then he is shown another, different, headline at a somewhat farther distance away. Again, if he is able to read it, it is discarded. This process is repeated until the subject is unable to read the headline. Then the demonstrator tells him what is in the headline. The amazing fact is that the subject will then be able to see and read the headline the moment he "knows" what is there.

Such illustrations could be multiplied indefinitely. These examples are enough to illustrate the impossibility of separating sharply the "perceptual," "seeing," "hearing," etc., and "knowing," a division which cannot be made, except superficially on verbal levels.

In a non-Aristotelian orientation we take for granted that all "perceptual processes" involve abstracting by our nervous system at different levels of complexity. Neurological evidence shows the selective character of the organism's responses to total situations, and the papers in this symposium also corroborate the view that the mechanisms of "perception" lie in the ability of our nervous system to abstract and to project.

Abstracting by necessity involves evaluating, whether conscious or not, and so the process of abstracting may be considered as a process of evaluating stimuli, whether it be a "toothache," "an attack of migraine," or the reading of a "philosophical treatise." A great many factors enter into "perceiving," as suggested by the content
of this symposium. As this seems to be a circular process, it is considered here on lower and higher levels of complexity (see page 200).

Processes of Abstracting.—Our knowledge today indicates that all life is electro-colloidal in character, the functioning of the nervous system included. We do not as yet know the intrinsic mechanisms, but from an electro-colloidal point of view every part of the brain is connected with every other part and with our nervous system as a whole. With such a foundation, even though it becomes necessary to investigate different aspects of the processes of abstracting for purposes of analysis, we should be aware that these different aspects are parts of one whole continuous process of normal human life.

Let us consider what our nervous system does when we "perceive" a happening or event. The term "event" is used here in the sense of Whitehead as an instantaneous cross-section of a process. Say we drop a box of matches. Here we have a first-order happening, which occurs on non-verbal or what are called the "silent" or "un-speakable" levels. The reflected light impinges on the eye, we get some sort of electro-colloidal configurations in the brain; then, since we are sentient organisms, we can react to those configurations with some sort of "feelings," some evaluations, etc., about them, on "silent" levels. Finally, on the verbal levels, we can speak about those organismal reactions. Newton may have said, about the falling matchbox, "gravitation"; Einstein may say "space-time curvature." Whatever we may say about it, the first-order happening remains on the silent levels. How we will talk about it may differ from day to day, or from year to year, or century to century. All our "feelings," "thinkings," our "loves," "hates," etc., happen on silent un-speakable levels, but may be affected by the verbal levels by a continuing interplay. We may verbalize about them, to ourselves or others, intensify, decrease them, etc., but this is a different problem.

In the following diagram (Figure 35) is given an extensional analysis of the process of abstracting from an electro-colloidal non-Aristotelian point of view. It is oversimplified and could be made more exhaustive. However, it is satisfactory for our purpose of explaining briefly the most general and important points.

Most of us identify in value levels I, II, III, and IV and react as if our verbalizations about the first three levels were "it" (see page 183 ff.). Whatever we may say something "is" obviously is not the "something" on the silent levels. Indeed, as Wittgenstein wrote, "What can be shown, cannot be said." In my experience I found that it is practically impossible to convey the differentiation of silent (un-speakable) levels from verbal levels without having the hearer
Fig. 35.—The process of abstracting from an electro-colloidal non-Aristotelian point of view.

or reader pinch with one hand the finger of the other hand. He would then realize organismically that the first-order psychological experiences are not verbal. The simplicity of this statement is misleading unless we become aware of its implications, as in our living reactions most of us identify in value the entirely different levels, with often disastrous consequences.

Unfortunately, people in general, including many scientists, disregard levels II and III completely, and react as if unconscious that IV “is not” I. In other words, we do not take into account the mechanisms of the human nervous system or “think electro-colloidally” about our reactions. Such a disregard leads to misunderstandings, heated two-valued (“either-or”) debates, hostilities, prejudices, bitterness, etc. In the history of “philosophy,” for example, the metaphysical fight about “solipsism” simply ceases to be a problem when we become conscious that the only possible link between the inherently different silent (nonverbal) and verbal levels is found in their similarity of structure, expressed in terms of relations, on which the present non-Aristotelian system is based.

An awareness of the processes of abstracting clarifies the structure of a great many of our interpersonal, professional, etc., difficulties, which may become trivial or nonexistent if we become conscious of the identifications involved. Self-made problems often turn out to be no problems.

Statements are verbal; they are never the silent “it.” One may have a nightmare that he “is” a Stalin. That may be innocent enough. One may have daydreams of being a Stalin. That is more serious.
One may proclaim consciously, "I am Stalin," and believe in it, and begin to shoot people who disagree with him; usually such a person is locked up in a hospital, and he usually is a hopeless case.

We see how the above diagram indicates human semantic (evaluational) mechanisms in the average individual who is hovering between sanity and semantic illness. It is well known that what would be only a dream to a "normal" person, "is reality" to a dementia praecox patient, who lives and acts accordingly.

These mechanisms also function pathologically in infantile adults, who live in a fictitious world built up on identifications.

The verbal levels, in the meantime, are of unique human importance because we can abstract on higher and higher verbal levels from I, II, III, etc. In human life, IV represents means for intercommunicating and transmitting from individual to individual and generation to generation the accumulated experiences of individuals and the race. I call this human capacity the "time-binding" characteristic.

The symbolic levels of behavior differentiate most sharply human reactions from signal reactions of lower, less complex forms of life. If those accumulated experiences are not properly verbalized, it may seriously twist or even arrest human development.

This simple diagram represents most complex processes, involving "perception" on different levels, problems of interpretation, verbal formalism, etc. Every type of human reactions from the lowest to the highest levels involves these mechanisms, the nonawareness of which may lead to disturbing, frustrating, or disastrous mis-evaluations and consequences. We will find later how this diagram applies to primitive and Aristotelian language structures.

I have stressed the serious or tragic aspect of our processes of abstracting here because I am attempting to convey the heavy life-value of what may otherwise appear too simple and obvious.

Verbal and Nonverbal "Thinking."—It will be noticed that I have put quotation marks around the word "thinking." This term usually implies a more "cortical" activity, indicating verbally some sort of a split between the functioning of the cortical and thalamic regions of our nervous system where there is actually no such split, but an interaction and integration on different levels.

"Is all thinking verbal?" Some say "yes," some say "no." If, however, we limit ourselves to verbal "thinking," we are caught in our old linguistic ruts of bygone generations, socio-culturally trained and neurologically canalized in the inherited forms of representation. Under such conditions we are unable or unfit to see the outside or
inside world anew, and so we handicap scientific and other creative work. We speak so glibly about “freedom,” never considering Willard Gibbs’ degrees of freedom on which all our advance depends. A non-Aristotelian system involves that new orientation which ultimately leads to creative “thinking.” Thus, an automobile has indefinitely more degrees of freedom than a street-car, which is “canalized” in its rails. Unfortunately and perhaps tragically, the majority of us “think” verbally, so characteristic of the Aristotelian subject-predicate orientation, and thus are handicapped in or prevented from creative “thinking.” The physico-mathematical and so scientific way of “thinking” broke through those handicaps; and thus is at the foundation of creative scientific work, which brings to mankind so many benefits.

There is a tremendous difference between “thinking” in verbal terms, and “contemplating;” inwardly silent, on nonverbal levels, and then searching for the proper structure of language to fit the supposedly discovered structure of the silent processes that modern science tries to find. If we “think” verbally, we act as biased observers and project onto the silent levels the structure of the language we use, so remaining in our rut of old orientations which make keen, unbiased observations (“perceptions”? ) and creative work well-nigh impossible. In contrast, when we “think” without words, or in pictures or visualizations (which involve structure and, therefore, relations), we may discover new aspects and relations on silent levels, and so may formulate important theoretical results in the general search for a similarity of structure between the two levels, silent and verbal. Practically all important advances are made in that way.

Jacques Hadamard, the great mathematician, has made a study of how some outstanding mathematicians and scientists “think.” I refer to his valuable little book on The Psychology of Invention in the Mathematical Field (11). The majority of these creative men reported that they “think” in terms of visual structures. “Most generally images are used, very often of a geometrical nature,” he found (11, p. 114). I may mention here one of the questions which Hadamard asked in his questionnaire, to which Einstein gave an answer of particular interest to us here:

**Question:** It would be very helpful for the purpose of psychological investigation to know what internal or mental images, what kind of “internal word” mathematicians make use of; whether they are motor [kinesthetic], auditory, visual or mixed, depending on the subject which they are studying (11, p. 140).

**Answer:** The above mentioned elements are, in my case, of visual and some of muscular type. Conventional words or other signs have to be sought for laboriously only in a secondary stage, when the mentioned associative play is
sufficiently established and can be reproduced at will... In a stage when
words intervene at all, they are, in my case, purely auditive, but they interfere
only in a secondary stage as already mentioned (11, p. 143).  

Personally, I "think" in terms of pictures, and how I speak about
those visualizations later is a different problem. I also notice a
severe strain on my eyes when doing creative work, due to that visualizing, which seems to be related somehow to "perception."

In this connection I may refer also to a most important essay on
"Mathematical Creation" by the great mathematician, Henri Poincaré
(34), which was delivered in the first years of this century as a lec-
ture before the Psychological Society in Paris.

Language becomes then a medium through which we eventually
talk to ourselves or to others, with its own definite limitations. "The
relation between language and experience is often misunderstood,"
Sapir found (40). "Language is not merely a more or less systematic
inventory of the various items of experience which seem relevant to
the individual, as is so often naively assumed, but is also a self-
contained, creative symbolic organization, which not only refers to
experience largely acquired without its help, but actually defines
experience for us by reason of its formal completeness and because of
our unconscious projection of its implicit expectations into the field
of experience" (italics mine).

As Santayana said, "The empiricist... thinks he believes only
what he sees, but he is much better at believing than at seeing" (21,
p. 1).

In An Essay on Man, Ernst Cassirer (7) discusses the "hunger
for names" which every normal child shows at a certain age.

By learning to name things a child does not simply add a list of artificial
signs to his previous knowledge of ready-made empirical objects. He learns
rather to form the concepts of those objects, to come to terms with the objective
world. Henceforth the child stands on firmer ground. His vague, uncer-
tain, fluctuating perceptions and his dim feelings begin to assume a new shape.
They may be said to crystallize around the name as a fixed center, a focus of
thought.

But herein lies an important aspect of "naming" or "labeling":

The very act of denomination depends on a process of classification... they [the classifications] are based on certain constant and recurring elements

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3 By permission of Princeton University Press.
4 Arabic-numbered page references to Korzybski's Science and Sanity are correct
for all editions. References in Roman numerals are to the third edition; for corre-
sponding pages in the second edition, subtract five.
in our sense experience. ... There is no rigid and pre-established scheme according to which our divisions and subdivisions might once for all be made. Even in languages closely akin and agreeing in their general structure we do not find identical names. As Humboldt pointed out, the Greek and Latin terms for the moon, although they refer to the same object, do not express the same intention or concept. The Greek term (μήν) denotes the function of the moon to "measure" time; the Latin term (luna, luc-na) denotes the moon's lucidity or brightness. ... The function of a name is always limited to emphasizing a particular aspect of a thing, and it is precisely this restriction and limitation upon which the value of the name depends. ... in the act of denomination we select, out of the multiplicity and diffusion in our sense data, certain fixed centers of perception (7).  

A "name" (label) involves for a given individual a whole constellation or configuration of labeling, defining, evaluating, etc., unique for each individual, according to his socio-cultural, linguistic environment and his heredity, connected with his wishes, interests, needs, etc.

Cassirer makes some interesting comparisons between a child learning its first language and an adult learning a foreign language. I may add here that it happens that I was born into four languages (three different roots), and this has helped me not to be bound by words as I might have been if I had learned only one language as a child.

We see the seriousness of terminology, which is affected by and also determines our general Weltanschauung. In 1950 we must visualize the world in general as a submicroscopic, dynamic electronic process and life in particular as an electro-colloidal process of still much higher complexity (1, 2). What has made it possible for us to visualize an "object" and life in this way? Theories, verbalizations, built up for thousands of years, up to the latest discoveries of modern science. Thus, we find again that ceaseless circularity (see pages 200 ff.). The fact that we can "perceive" happenings, objects, or persons in this way has very important bearings on that whole process, as we will find later in our discussion.

Primitive Language Structures.—All languages have a structure of some kind, and every language reflects in its own structure that of the world as assumed by those who evolved the language.  

Reciprocally, we read mostly unconsciously into the world the structure of the language we use. Because we take the structure of our own habitual language so much for granted, particularly if we were born

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* By permission of Yale University Press and Mrs. Toni Cassirer.
* For the research supporting this theory, see Korzybski's *Science and Sanity.*
into it, it is sometimes difficult to realize how differently people with other language structures view the world.

The **structure** of anything, whether it be a language, house, machine, etc., must be in terms of **relations**. To have "structure" we must have a complex or network of ordered and interrelated parts. The only possible link between the nonverbal and verbal levels is found in terms of relations; and, therefore, relations as factors of structure give the sole content of all human knowledge. Thus, we may realize the importance of the structure of a language, any language. Bertrand Russell and Ludwig Wittgenstein were the important pioneers in devoting serious attention to the problem of structure (38, 39, 51). I cannot go into this problem in more detail here, except to try to convey its fundamental importance.

Among primitive peoples with one-valued "pre-logical thinking" the "consciousness of abstracting" is practically nil. The effect upon an individual produced by something inside his skin is projected outside his skin, often acquiring a demonic character. The "idea" of an action or object is identified with the action or the object itself.

The "paralogical" state is a little more advanced. Here the identifications are based on **similarities**, and differences are neglected (not consciously, of course). Lévy-Bruhl describes this primitive evaluational level by formulating the "law of participation," by which all things which have **similar characteristics** "**are the same**" (29; 21, p. 514). A primitive "syllogism" runs somewhat as follows: "Certain Indians run fast, stags run fast; therefore, some Indians are stags." This evaluational process is entirely natural at this level and lays a foundation for the **building of language** and higher order abstractions. We proceeded by similarities, much too often considered as identities.

Primitive men do not discuss abstract "ideas." As Boas has found, "The Indian will not speak of goodness as such, although he may very well speak of the goodness of a person. He will not speak of a state of bliss apart from the person who is in such a state." However, Boas concludes, "The fact that generalized forms of expression are not used does not prove inability to form them, but it merely proves that the mode of life of the people is such that they are not required" (3, pp. 64-67).

The use of abstract terms, such as a term for "goodness as such," made possible an enormous economy in communication, also a great increase in human time-binding progress, and ultimately it made modern science possible. In the meantime, the fact that we do abstract on higher orders becomes a danger if we are not conscious that we are doing so and retain the primitive confusions or identifications of orders of abstractions.
The following quotation from "Being and Value in a Primitive Culture" by Dorothy D. Lee shows the extensional (by fact, rather than higher order verbal generalizations; see pages 190-93) type of language structure of the Trobrianders (25, p. 402):

If I were to go with a Trobriander to a garden where the taytu, a species of yam, had just been harvested, I would come back and tell you: "There are good taytu there; just the right degree of ripeness, large and perfectly shaped; not a blight to be seen, not one rotten spot; nicely rounded at the tips, with no spiky points; all first-run harvesting, no second gleanings." The Trobriander would come back and say "Taytu"; and he would have said all that I did and more. Even the phrase "There are taytu" would represent a tautology, since existence is implied in being; is, in fact an ingredient of being to the Trobriander. And all the attributes, even if he could find words for them at hand in his own language, would have been tautological, since the concept of taytu contains them all. In fact, if one of these were absent, the object would not have been a taytu. Such a tuber, if it is not at the proper harvesting ripeness, is not a taytu. If it is unripe, it is a bwabawa; if over-ripe, spent, it is not a spent taytu but something else, a yowana. If it is blighted it is a mokunokuna. If it has a rotten patch, it is a taboda; if misshapen, it is an usasu; if perfect in shape but small, it is a yapogu. If the tuber, whatever its shape or condition, is a post-harvest gleaning, it is an ulumadala. When the spent tuber, the yowana, sends its shoots underground, as we put it, it is not a yowana with shoots, but a silisa. When new tubers have formed on these shoots, it is not a silisa but a gadena. . . .

As being is identical with the object, there is no word for to be; as being is changeless, there is no word meaning to become.

It is significant, also, to find that the temporal differentiations and temporal generalizations which we have are absent among the Trobrianders:

Trobriand verbs are timeless, making no temporal distinctions. History and mythical reality are not "the past" to the Trobriander. They are forever present, participating in all current being, giving meaning to all his activities and all existence. A Trobriander will speak of the garden which his mother's brother planted, or the one which the mythical Tudava planted, in exactly the same terms with which he will refer to the garden which he himself is planting now; and it will give him satisfaction to do so . . . (25, p. 403).

The Trobriander has no word for history. When he wants to distinguish between different kinds of occasions, he will say, for example, "Molubabeba in-child-his," that is, "in the childhood of Molubabeba," not a previous phase of this time, but a different kind of time (25, p. 405; italics mine).

Many excellent papers and books have been written by anthropologists, psychiatrists, linguists, etc., on how different primitive

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people or different nationalities dissect nature differently in accordance with the structure of their language.

The main characteristics of primitive or "pre-logical" and "paralogical" language structures may be summarized in their identifications of different orders of abstractions and their lack of abstract terms. The "perceptions" of people on primitive levels are often different from ours, different in the degree to which higher order abstractions are confused, identified with, and projected on lower order abstractions. They identify or ascribe one value to essentially many-valued different orders of abstractions and so become impervious to contradictions with "reality" and impervious also to higher order experience.

Aristotelian and Non-Aristotelian Language Systems

Aristotelian Language Structure.—In mankind's cultural evolution, our current abstractions became codified here and there into...

8 Among the documentation of this are (25) and other works by Dorothy D. Lee; also (44).

The following note was supplied by Miss Schuddebrandt: "It may be clarifying to elaborate briefly on some of Korzybski's views on primitive types of orientation and his use of the term 'primitive,' as I interpret them. It seems to me that he refers to certain complex socio-cultural, psycho-logico-linguistic, etc., levels of development and their attendant orientations found in different areas in the world. Considering our human class of life as a whole, we may assume that developments from 'primitive' to more advanced types of 'pre-scientific' to 'scientific 1950' orientations, proceeded in degrees here and there, not linearly but, rather, 'spirally' in accordance with our understanding of ourselves and our environments (see pages 201-2). The developments of one culture were usually eventually intermingled with and carried along with transformations by other cultures.

"The reader is referred to (18), in which Korzybski first formulated his new definition of human beings as a 'time-binding class of life,' unique in that one generation can (potentially) begin where the former left off. This process can be handicapped or stifled in many ways. Korzybski stated in another context that "The human understanding of time-binding as explained here establishes the deductive grounds for a full-fledged 'science of man,' where both inductive and deductive methods are utilized. . . . I had to include neuro-linguistic and neuro-semantic (evaluational) environments as environments, and also had to consider geographic, physico-chemical, economic, political, ecological, socio-cultural, etc., conditions as factors which mould human personalities, and so even group behavior" (22).

"So far the highest orders of abstractions made by man, and those giving the greatest degree of predictability, may be observed in mathematical forms of representations (such as the tensor calculus). To bring to fuller expression the constructive potentialities of man in his ethical, socio-economic, etc., activities, and so keep pace with the achievements in mathematics, science, etc., and their technological consequences, was one of the main aims of Korzybski beginning with Mankind of Humanity in 1921.

"There seems no doubt that some primitive types of evaluation still survive in the orientations of most people in present-day Western cultures (and perhaps other cultures also, of which I feel incompetent to speak), involving dichotomies and conflicting premises, as in 'science versus religion,' etc. (23).

"I am aware that there are some who take exception to the findings of Lévy-Brühl, Boas, and others. Korzybski, as far as I know, felt that they conveyed something of value in the analysis of these problems which still remain problems, and will continue to be analyzed with different interpretations and terminologies—C.S."
systems, for instance the Aristotelian system. The term “system” is used here in the sense of “a whole of related doctrinal functions” (the doctrinal functions of the late Professor Cassius Keyser [17]). We are concerned with this structure here because of its still enormous influence on those of us whose language structure is of the Indo-European type.

I wish to emphasize here that in discussing the inadequacy of the Aristotelian system in 1950, I in no way disparage the remarkable and unprecedented work of Aristotle about 350 B.C. I acknowledge explicitly my profound admiration for his extraordinary genius, particularly in consideration of the period in which he lived. Nevertheless, the twisting of his system and the imposed immobility of this twisted system, as enforced for nearly two thousand years by the controlling groups, often under threats of torture and death, have led and can only lead to more disasters. From what we know about Aristotle and his writings, there is little doubt that, if alive, he would not tolerate such twistings and artificial immobility of the system usually ascribed to him.

Space limitations prevent my going into details here, and I can but refer the reader to my larger work on this subject, _Science and Sanity: An Introduction to Non-Aristotelian Systems and General Semantics_ (21). A rough summary in the form of a tabulation of Aristotelian and non-Aristotelian orientations given in that volume (21, pp. xxxv ff.) may help to convey to the reader the magnitude of this problem.

Here I will stress some of the main structural considerations of the Aristotelian system and their effects on our world outlook, evaluations, and, therefore, even “perceptions.” Practically since the beginning of Aristotle’s formulations, and particularly after their later distortions, there have been many criticisms of them, mostly ineffective because unworkable. One of their most serious inadequacies was very lately found to be the belief in the uniqueness of the subject-predicate form of representation, in the sense that every kind of relation in this world can be expressed in that form, which is obviously false to facts and would make science and mathematics impossible.

I will quote the following remarks of Bertrand Russell, who did epoch-making work in his analysis of subject-predicate relations:

The belief or unconscious conviction that all propositions are of the subject-predicate form—in other words, that every fact consists in some thing having some quality—which most philosophers have been incapable of giving any account of the world of science and daily life... (37, p. 45; 21, p. 85).

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Philosophers have, as a rule, failed to notice more than two types of sentence, exemplified by the two statements "this is yellow" and "buttercups are yellow." They mistakenly suppose that these two were one and the same type, and also that all propositions were of this type. The former error was exposed by Frege and Peano; the latter was found to make the explanation of order impossible. Consequently, the traditional view that all propositions ascribe a predicate to a subject collapsed, and with it the metaphysical systems which were based upon it, consciously or unconsciously (39, p. 242; 21, p. 131).

Asymmetrical relations are involved in all series—in space and time, greater and less, whole and part, and many others of the most important characteristics of the actual world. All these aspects, therefore, the logic which reduces everything to subjects and predicates is compelled to condemn as error and mere appearance (37, p. 45; 21, p. 188).

In this connection I may quote some remarks by Alfred Whitehead, who also did most important work on this subject:

... the subject-predicate habits of thought ... had been impressed on the European mind by the overemphasis on Aristotle’s logic during the long mediæval period. In reference to this twist of mind, probably Aristotle was not an Aristotelian (49, pp. 80-81; 21, p. 85).

The evil produced by the Aristotelian “primary substance” is exactly this habit of metaphysical emphasis upon the “subject-predicate” form of proposition (49, p. 45). 21

The alternate philosophic position must commence with denouncing the whole idea of “subject qualified by predicate” as a trap set for philosophers by the syntax of language (48, p. 14; 21, p. 85). 22

In his “Languages and Logic” Benjamin Lee Whorf makes an analysis of primitive and other language structures (50, pp. 43-52).

The Indo-European languages and many others give great prominence to a type of sentence having two parts, each part built around a class of words—substantives and verbs—which those languages treat differently in grammar. ... The Greeks, especially Aristotle, built up this contrast and made it a law of reason. Since then, the contrast has been stated in logic in many different ways: subject and predicate, actor and action, things and relations between things, objects and their attributes, quantities and operations. And, pursuant again to grammar, the notion became ingrained that one of these classes of entities can exist in its own right but that the verb class cannot exist without an entity of the other class, the “thing” class. ... Our Indian languages show that with a suitable grammar we may have intelligent sentences that cannot be broken into subjects and predicates. 23

21 From A. N. Whitehead, Process and Reality. Copyright 1929 by The Macmillan Co., and used with their permission and that of Mrs. A. N. Whitehead.
22 By permission of Cambridge University Press and T. North Whitehead.
23 Reprinted from The Technology Review, April, 1941, edited at the Massachusetts Institute of Technology.
The subject-predicate structure of language resulted from the ascribing of "properties" or "qualities" to "nature," whereas the "qualities," etc., are actually manufactured by our nervous systems. The perpetuation of such projections tends to keep mankind on the archaic levels of anthropomorphism and animism in their evaluations of their surroundings and themselves.

The main verb through which these outlooks were structuralized in our language is the verb "to be." Here I will give a very brief analysis of some uses of the little word "is," and what important effects its use has had on our "thinking." A full investigation of the term "is" has been found to be very complex. The great mathematician and logician, Augustus de Morgan, one of the founders of mathematical logic, has justly said, in his *Formal Logic* (1847), (8, p. 56):

The complete attempt to deal with the term is would go to the form and matter of everything in existence, at least, if not to the possible form and matter of all that does not exist, but might. As far as it could be done, it would give the grand Cyclopaedia, and its yearly supplement would be the history of the human race for the time.

Here, following Russell, we can only state roughly that in the Indo-European languages the verb "to be" has at least four entirely different uses (36, p. 64):

1. As an auxiliary verb: It is raining.
2. As the "is" of existence: I am.
3. As the "is" of predication: The rose is red.
4. As the "is" of identity: The rose is a flower.

The first two are difficult to avoid in English, and relatively harmless. The other two, however, are extremely pertinent to our discussion. If we say, "The rose is red," we falsify everything we "know" in 1950 about our nervous systems and the structure of the empirical world. There is no "redness" in nature, only different wave lengths of radiation. *Our reaction* to those light waves is only our individual reaction. If one is a Daltonist, for example, he will see "green." If one is color-blind, he will see "gray." We may correctly say, "We see the rose as red," which would not be a falsification.

The fourth, the "is" of identity, if used without consciousness of the identifications implied, perpetuates a primitive type of evaluation. In some languages—the Slavic, for instance—there is no "is" of identity. If we say, "I classify the rose as a flower," this is struc-
urally correct, and implies that our nervous system is doing the classifying.

The importance of that "is" of identity embedded in the structure of our language can hardly be overemphasized, as it affects our neuro-evaluational reactions and leads to mis-evaluations in the daily life of every one of us which are sometimes very tragic.

Here let us recall the "philosophical grammar" of our language which we call the "laws of thought," as given by Jevons (12; 21, p. 749):

1. The law of identity. Whatever is, is.
2. The law of contradiction. Nothing can both be, and not be.
3. The law of excluded third. Everything must either be, or not be.

These "laws" have different "philosophical" interpretations, but for our purpose it is enough to emphasize that (a) the second "law" represents a negative statement of the first, and the third represents a corollary of the former two; namely, no third is possible between two contradictories; and (b) the verb "to be," or "is," and "identity" play a most fundamental role in these formulations and the consequent semantic reactions.

"Identity" as a "principle" is defined as "absolute sameness in 'all' ('every') respects." It can never empirically be found in this world of ever-changing processes, nor on silent levels of our nervous systems. "Partial identity" or "identity in some respects" obviously represents only a self-contradiction in terms. Identification, as the term is used here, can be observed very low in the scale of life. It may be considered the first organic and/or organismal relating of "cause" and "effect," order, etc., when lower organisms responded effectively to signals "as if" they were actualities. On lower levels such organismal identifications have survival value. Laboratory observations show that the amoeba will exhibit reactions to artificial stimulations, without food value, similar to its reactions to stimuli with food value. The amoeba as a living bit of protoplasm has organismally identified an artificial, valueless-as-food, laboratory stimulus with "reality." Thus, although the reaction was there, the evaluation was inappropriate, which does not change the biological fact that without such identifications, or automatic response to a stimulus, no amoeba could survive.

Advancing in the scale of life, the identifications become fewer, the identification reactions become more flexible, "proper evaluation" increases, and the animals become more and more "intelligent," etc.
If identifications are found in humans, they represent only a survival of primitive reactions and mis-evaluations, or cases of underdevelopment or regression, which are pathological for humans.

Many of our daily identifications are harmless, but in principle may, and often do, lead to disastrous consequences. Here I give three examples of identification, one by a psychiatric hospital patient, another by a "normal" student of mine, and a third by a group of natives in the Belgian Congo.

When I was studying psychiatry in St. Elizabeths Hospital, a doctor was showing me a catatonic patient who was standing rigid in a corner. For years he had not spoken and did not seem to understand when spoken to. He happened to have been born and spent part of his life in Lithuania, where the people had been trained for several generations by the czar to hate the Poles. The doctor, without that historical knowledge, introduced me to the catatonic by saying, "I want you to meet one of your compatriots, also a Pole." The patient was immediately at my throat, choking me, and it took two guards to tear him away.

Another example is of a young woman who was a student in my seminar some years ago. She held a responsible position, but in her whole orientation she was pathologically fearful to the point of having daydreams of murdering her father because he did not defend her against her mother, who had beaten her and nagged her. During her childhood her brother, who was a number of years older and the favorite of their mother, patronized her, and she hated him for this attitude.

In this particular interview I was especially pleased with her progress and so I was speaking to her smilingly. Suddenly she jumped at me and began to choke me. This lasted only about five seconds. Then it turned out that she identified my smile with the patronizing attitude of her brother, and so she was choking "her brother," but it happened to be my neck.

There is another incident I want to tell you about that will indicate the problems we have to deal with (35, p. 52). We have all seen a box of Aunt Jemima Pancake Flour, with the picture of "Aunt Jemima" on the front. Dr. William Bridges of the New York Zoological Society has told this story about it: A United States planter in the Belgian Congo had some 250 natives working for him. One day the local chief called him and said he understood that the planter was eating natives, and that if he did not stop, the chief would order his men to stop work. The planter protested that he did not eat natives and called his cook as a witness. But the cook insisted that
he did indeed eat natives, though he refused to say whether they were fried, boiled, stewed, or what not. Some weeks later the mystery was cleared up when the planter was visited by a friend from the Sudan who had had a similar experience. Between them they figured out the answer. Both had received shipments of canned goods from the United States. The cans usually bore labels with pictures of the contents, such as cherries, tomatoes, peaches, etc. So when the cooks saw labels with the picture of “Aunt Jemima,” they believed that an Aunt Jemima must be inside!

A structure of language perpetuating identification reactions keeps us on the level of primitive or prescientific types of evaluations, stressing similarities and neglecting (not consciously) differences. Thus, we do not “see” differences, and react as if two objects, persons, or happenings were “the same.” Obviously this is not “proper evaluation” in accordance with our knowledge of 1950.

In analyzing the Aristotelian codifications, we have to deal also with two-valued, “either-or” types of orientation. Practically all humans, the most primitive peoples not excluded, who never heard of Greek philosophers, have some sort of “either-or” types of orientations. It becomes obvious that our relations to the world outside and inside our skins often happen to be, on the gross level, two-valued. For instance, we deal with day or night, land or water, etc. On the living level we have life or death, our heart beats or not, we breathe or suffocate, are hot or cold, etc. Similar relations occur on higher levels. Thus we have induction or deduction, materialism or idealism, capitalism or communism, Democrat or Republican, etc. And so on endlessly on all levels.

In living life many issues are not so sharp; therefore, a system which posits the general sharpness of “either-or” and so objectifies “kind” (“properties,” “qualities,” etc.), is too distorted and unduly limited. It must be revised and made more flexible in terms of “degrees.” The new orientation requires a physico-mathematical “way of thinking.” Thus if, through our unconscious assumptions, inferences, etc., we evaluate the event, the submicroscopic-process level, as if it were the same as the gross macroscopic object which we perceive before us, we remain in our two-valued rut of “thinking.” On the macroscopic level, if there are two apples side by side, for example, we perceive that they may “touch” or “not touch” (see Figure 36). This language does not apply to the submicroscopic process level, where the problem of “touch” or “not touch” becomes a problem of degree. There are continual interactions between the two on submicroscopic levels which we cannot “perceive.” In accordance with the assumptions of science, we must visualize a proc-
It follows that this is the way we should "think" about an apple, or a human being, or a theory.

![Macroscopic vs. Submicroscopic](image)

**Fig. 36.** Macroscopic view and submicroscopic process level of two apples, side by side.

There is no "perception" without interpolation and interpretation (21, pp. xiii ff.). We cannot stop it. But we can visualize the latest achievements of mathematical physics and other sciences and read these into the silent un-speakable processes going on around us and in us.

The Aristotelian language structure also perpetuated what I call "elementalism," or splitting verbally what cannot be split empirically, such as the term mind by itself and the terms body, space, time, etc., by themselves. It was only a few years ago (1908) that the outstanding mathematician Minkowski said in his epoch-making address entitled "Space and Time," delivered at the 80th Assembly of German Natural Scientists and Physicians at Cologne, "The views of space and time which I wish to lay before you have sprung from the soil of experimental physics, and therein lies their strength. They are radical. Henceforth space by itself, and time by itself, are doomed to fade away into mere shadows, and only a kind of union of the two will preserve an independent reality" (32, p. 75).

This "union" of what used to be considered distinct separate entities had to be accompanied by a change in the structure of the language, in this particular case by the formulation of Minkowski's new four-dimensional geometry of "space-time," in which "space" and "time" were permanently united by a simple grammatical hyphen, thus making the general theory of relativity possible.

The old elementalistic structure of language built for us a fictitious, anthropomorphic, animistic world not much different from that of the primitives. Modern science makes imperative a language structure which is non-elementalistic and does not split artificially what cannot be split empirically. Otherwise, we remain handicapped by neuro-evaluational blockages, lack of creativeness, lack of understanding, and lack of broad perspectives, etc., and disturbed by inconsistencies, paradoxes, etc.

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*4 For the significance of the date in small figures, see pages 191-92.*
The points I have touched upon here: namely, the subject-predicate type of structure, the "is" of identity, two-valued "either-or" orientations, and elementalism, are perhaps the main features of the Aristotelian language structure that molded our "perceptions" and hindered the scientific investigations which at this date have so greatly, in many instances, freed us from the older limitations and allowed us to "see the world anew." The "discovery of the obvious" is well known to be the most difficult, simply because the old habits of "thinking" have blocked our capacity to "see the old anew" (Leibnitz).

Non-Aristotelian Language Systems.—As usually happens with humans, when we come to an impasse and find that revisions and new approaches are necessary, we do something about it. In this case, with the tremendous advances in science, a structure of language which did not falsify modern discoveries became imperative. As I do not know of any other non-Aristotelian system at this date, I must ask the reader's indulgence that I will have to speak rather exclusively about my own formulations. Many others have made applications, but here I will deal mostly with the theoretical side.

The new system is called "non-Aristotelian" since it includes the prevailing systems of evaluation as special cases within a more general system. Historically the Aristotelian system influenced the Euclidean system, and both underlie the consequent Newtonian system. The first non-Aristotelian revision parallels and is interdependent with non-Euclidean and non-Newtonian developments in modern mathematics and mathematical physics. To satisfy the need to unify exact sciences and general human orientations was one of the main aims of the non-Aristotelian revision, historically the latest, because of its much greater complexities (21, esp. p. 97).

The non-Aristotelian system grew out of the new evaluation in 1921 of human beings as a time-binding class of life (18). This evaluation is based on a functional rather than zoological or mythological approach and considers "man" as "an organism-as-a-whole-in-an-environment." Here the reactions of humans are not split verbally and elementalistically into separate "body," "mind," "emotions," "intellect," or different "senses," etc., by themselves, which affects the problems of "perception" when considered from a non-elementalistic point of view. With a time-binding consciousness, our criteria of values, and so behavior, are based on the study of human potentialities, not on statistical averages on the level of homo
*hominí lupus* drawn from primitive and/or un-sane evaluational reactions which are on record (23).

Common sense and ordinary observations make clear that the average so-called "normal" person is so extremely complex as to practically evade a nonsegmented, non-elementalistic analysis. In order to make such an analysis, it became necessary to investigate the main available forms of human reactions, such as mathematics, mathematical foundations, many branches of sciences, history, history of cultures, anthropology, philosophy, psychology, "logic," comparative religions, etc. It was found essential to concentrate on the study of two extremes of human psycho-logical reactions: (a) reactions at their best, because of their exceptional predictability, validity, and lasting constructiveness in the time-binding process, as in mathematics, the foundations of mathematics, mathematical physics, exact sciences, etc., which are manifestations of some of the deepest human psycho-logical reactions; and (b) reactions at their worst, as exemplified by psychiatric cases. In these investigations it became obvious that physico-mathematical methods have application to our daily life on all levels, linking science, and particularly the exact sciences, with problems of sanity in the sense of adjustment to "facts" and "reality."

In fact it was found that, to change the linguistic structure of our prevailing Aristotelian system, methods had to be taken bodily from mathematics. Thus, the structure of our language was changed through the use of extensional devices without changing the language itself. This will be explained briefly a little later.

When the premises of this new approach had been formulated, I found unexpectedly that they turned out to be a denial of the old "laws of thought" and the foundation for a non-Aristotelian system, the *modus operandi* of which I have named "General Semantics." The premises are very simple and may be stated by means of an analogy:

1. A map is not the territory. (Words are not the things they represent.)
2. A map covers not all the territory. (Words cannot cover all they represent.)
3. A map is self-reflexive. (In language we can speak about language.)

We notice that the old prescientific assumptions violate the first two premises and disregard the third (20, pp. 750 ff.; 24).

The third premise turns out to be an application to everyday life of the extremely important work of Bertrand Russell, who attempted to solve self-contradictions in the foundations of mathematics by his
theory of mathematical or logical types. In this connection the term self-reflexive was introduced by Josiah Royce. The theory of mathematical types made me aware of new kinds of linguistic perplexities to which practically no one, except a very few mathematicians, had paid attention before. The realization and analysis of such difficulties led me to the discovery that the principles of different orders of abstractions, multi-ordinality of terms, over-defined terms, second-order reactions ("thinking" about "thinking," doubt of doubt, fear of fear, etc.), thalamo-cortical interaction, the circularity of human knowledge, etc., may be considered as generalizing the theory of mathematical types.18

The degrees to which we are "conscious of abstracting," which includes, among others, the above, becomes a key problem in the way we evaluate and therefore to a large extent may affect the way in which we "perceive." If we can devise methods to increase our "consciousness of abstracting," this would eventually free us from the archaic, prescientific, and/or Aristotelian limitations inherent in the older language structures. The following structural expedients to achieve this I call the extensional devices, and the application of them automatically brings about an orientation in conformity with the latest scientific assumptions.

Extensional Devices. 1. Indexes, as in \( x_1, x_2, x_3, \ldots, x_n \); chair, chairs, chair . . . chairs; Smith, Smiths, Smith . . . Smiths, etc. The role of the indexes is to produce indefinitely many proper names for the endless array of unique individuals or situations with which we have to deal in life. Thus, we have changed a generic name into a proper name. If this indexing becomes habitual, as an integral part of our evaluating processes, the psycho-logical effect is very marked. We become aware that most of our "thinking" in daily life as well as in science is hypothetical in character, and the moment-to-moment consciousness of this makes us cautious in our generalizations, something which cannot be easily conveyed within the Aristotelian struc-

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18 In this connection see the following from Korzybski's paper on Time-binding: The General Theory (1926): "In my independent inquiry I came across difficulties and had to solve them or quit. My solution is given in the G. T. [General Theory] and the A. [Anthropometry or Structural Differential]. It is found that this theory covers the theory of mathematical types invented by Russell . . . I knew about the theory of types long before . . . I could not accept the theory of types because it is not general enough and does not fit in my system; as far as my work is concerned I had to dismiss it. Scientific method led automatically to a solution of my difficulties; and perhaps no one was more surprised and happy than myself when I found that the G. T. covers the theory of types!" (22, second paper, p. 7).

See also Science and Sanity, p. 429: "The author was pleasantly surprised to find that after his A-system was formulated, this . . . non-el [non-elementalist] theory covers the theory of mathematical types and generalizes it" (21). C. S.
ture of language. A generic term (such as "chair") deals with classes and stresses similarities to the partial exclusion or neglect or disregard of differences. The use of the indexes brings to consciousness the individual differences, and thus leads to more appropriate evaluation, and so eventually "perception," in a given instance. The harmful identifications which result from the older language structures are often prevented or eliminated, and they may become supplanted by more flexible evaluations, based on a maximum probability orientation.

2. Chain-indexes, as in chair₁ (in a dry attic), chair₂ (in a damp cellar), ... chairₙ; Smith₁ (under normal conditions) or, say (on the ground), Smith₂ (under extreme starvation conditions) or, say (in a plane at extreme altitudes). Smith's reactions are entirely different in many ways under the different conditions.

The role of the chain-indexes is to provide a technique for the introduction of environmental factors, conditions, situations, etc. On the human level, these would include psycho-logical, socio-cultural, etc., factors.

In a world where a given "cause" has or may have a multiplicity of "effects," each "effect" becomes or may become a "cause," and so on indefinitely. As we know from psychiatry, for instance, a single happening to an individual in childhood may start a chain-reaction series, and color and twist his psycho-logical or even psycho-somatic responses for the rest of his life. Chain-indexes also convey the general mechanisms of chain-reactions, which operate not only in atomic fission, but everywhere in this world. We are particularly interested here that this includes organic processes, human inter-relations, and also the processes of time-binding, as expressed in the "spiral theory" of our time-binding energy (18, 1st ed., pp. 232 ff.).

Chain-indexes (indexing an index indefinitely) are not new in mathematics. They have been used automatically, but to the best of my knowledge a general pattern was not formulated for their application in everyday life. For an example of their use in a scientific problem, see "On the Use of Chain-indexing to Describe and Analyze the Complexities of a Research Problem in Bio-chemistry" by Mortimer B. Lipsett (30).

To recapitulate, for better or worse, we are living in a world of processes, and so "cause-effect" chain-reactions, and we need to have linguistic means for ourselves and others to manage our evaluations in such a world. Perhaps the formulation of a linguistic chain-index pattern will help this.

3. Dates, as in Smith₁⁰⁰, Smith₁¹⁰⁰, Smith₁⁰⁵0 ... Smith₄. The use of dates places us in a physico-mathematical, four-dimen-
sional (at least) space-time world of motion and change, of growth, decay, transformation, etc., yet the representations of the processes can be arrested at any given point by linguistic means for purposes of analysis, clarity, communication, etc. This gives us techniques to handle dynamic actualities by static means.

Thus, it probably would make a good deal of difference whether a given automobile is a 1930 or a 1950 model, if we are interested in buying one. We are not as a rule similarly conscious of "dating" our theories, creeds, etc., however, although it is "well known" to what extent dates affect science, theories, books, different customs and cultures, people and all life included.

As another example, if we read the Communist Manifesto by Karl Marx and Friedrich Engels (31) we find the word "modern" on many pages. It is easy to evaluate the "modern" as "1950," which apparently many readers do. My suggestion is that when we find that word we put on the margin by hand the date "1848." With that dating, many arguments become antiquated, and so obsolete, because we are living in the world of 1950, which is entirely different.

4. Etc. The use of "etc." as a part of our evaluating processes leads to awareness of the indefinitely many factors in a process which can never be fully known or perceived, facilitates flexibility, and gives a greater degree of conditionality in our semantic reactions. This device trains us away from dogmatism, absolutism, etc. We are reminded of the second premise (the map does not cover all the territory) and indirectly of the first premise (the map is not the territory).

Incidentally, in the "etc." we find the key to the solution of mathematical "infinity," with important psychological implications (21, chap. xiv).

5. Quotes, as in "body," "mind," "emotion," "intellect," etc., forewarn us that elementalistic or metaphysical terms are not to be trusted, and that speculations based on them are misleading or dangerous.

6. Hyphens. The use of hyphens links linguistically the actual empirical complex' inter-relatedness in this world. There are most important structural implications involving the hyphen which represent recent advances in sciences and other branches of knowledge.

For example, the hyphen (a) in space-time revolutionized physics, transformed our whole world-outlook, and became the foundation of non-Newtonian systems; (b) in psycho-biological marks sharply the difference between animals and much more complex humans (in my interpretation of it). This differentiation is also on the basis of the present non-Aristotelian system, where "man" as a "time-
"binder" is not merely biological, but psycho-biological. The hyphen (c) in *psycho-somatic* is slowly transforming medical understanding, practice, etc.; (d) in *socio-cultural* indicates the need for a new applied anthropology, human ecology, etc.; (e) in *neuro-linguistic* and *neuro-semantic* links our verbal, evaluational reactions with our neuro-physiological processes; (f) in *organism-as-a-whole-in-an-environment*, indicates that not even an "organism-as-a-whole" can exist without an environment, and is a fiction when considered in "absolute isolation."

In regard to "psycho-biological" and "psycho-somatic," the original workers have missed the importance of the hyphen and its implications and used the terms as one word. This becomes a linguistic misrepresentation, and these pioneers did not realize that they were hiding an extreme human complexity behind an apparent simplicity of a single term. They did this on the unjustified, mistaken assumption that one word implies unity; in the meantime, it is misleading to the public because it conceals the inter-acting complexities.

**Theoretical and Practical Implications.** The simplicity of the extensional devices is misleading, and a mere "intellectual understanding" of them, without incorporating them into our living evaluational processes, has no effect whatsoever. A recanalization and retraining of our ususal methods of evaluation is required, and this is what is often very difficult for adults, although comparatively easy for children. The revised structure of language, as explained briefly here, has *neuro-physiological effects*, as it necessitates "thinking" in terms of "facts," or *visualizing processes*, before making generalizations. This procedure results in a slight neurological delay of reaction, facilitating thalamo-cortical integration, etc.

The old Aristotelian language structure, with its subject-predicate form, elementalism, etc., hindered rather than induced such desirable *neuro-physiological functioning*. It led instead to verbal speculations divorced from actualities, inducing eventually "split personalities" and other pathological reactions.

We may recall the pertinent statement by the outstanding mathematician, Hermann Weyl, who wrote in his "The Mathematical Way of Thinking": "Indeed, the first difficulty the man in the street encounters when he is taught to think mathematically is that he must learn to look things much more squarely in the face; his belief in words must be shattered; he must learn to think more concretely" (47).

Healthy normal persons naturally evaluate to some degree in accordance with the extensional methods and with some "natural
order of evaluation,” etc., without being aware of it. The structural formulation of these issues, however, and the corresponding revision of our old language structure, make possible their analysis and teachability, which is of paramount importance in our human process of time-binding.

There are many indications so far that the use of the extensional devices and even a partial “consciousness of abstracting” have potentialities for our general human endeavor to understand ourselves and others. The extent of the revision required if we are to follow through from the premises as previously stated is not yet generally realized. Our old habits of evaluation, ingrained for centuries if not millenniums, must first be re-evaluated and brought up to date in accordance with modern knowledge.

In what way does a non-Aristotelian form of representation bring about a change in evaluating processes and effect deep psycho-logical changes? We have seen how the structure of a language often determines the way we look at the world, other persons, and ourselves. My experiences, and the experiences of many others, confirm that we can and do evaluate stimuli differently as the result of the application of the non-Aristotelian extensional methods.

In practically all fields of human endeavor there are indications that new, more flexible, etc., attitudes can be brought about, with resulting influences on the interrelationships of the given individual with himself and others. A majority of these are in the field of education, but they include fields as diverse as psycho-somatic medicine, psychiatry, psychotherapy, law, economics, business, architecture, art, etc., political economy, politics, social anthropology, reading difficulties, etc.

The non-Aristotelian principles have been utilized in the United States Senate Naval Committee in connection with extremely important national problems such as “Establishing a Research Board for National Security” (45, p. 6), “A Scientific Evaluation of the Proposal that the War and Navy Departments be Merged into a Single Department of National Defense” (46), “Training of Officers for the Naval Service” (42, pp. 55-57). To the best of my knowledge today even on some ships in active duty the personnel are trained in some principles of general semantics (see also 33, esp. chap. 1).

One of the main characteristics of the differences in orientation is that the Aristotelian language form fosters evaluating “by definition” (or “intension”), whereas the non-Aristotelian or physico-mathematical orientation involves evaluating “by extension,” taking into consideration the actual “facts” in the particular situation confronting us.
For example, some older physicians still attempt to cure "a disease" and not the actual patient in front of them whose psychosomatic malfunctioning and manifestations, observed or inferred from the patient's behavior or record, involve a multiplicity of individual factors not covered by any possible definition of "a disease." Fortunately, today the majority of physicians try to cure the patient, not "a disease."

In his paper on "The Problem of Stuttering," Professor Wendell Johnson (13) speaks of the significance of the diagnosis of a child as "a stutterer":

Having called the child a "stutterer" (or the equivalent), they react less and less to the child and more and more to what they have called him. In spite of quite overwhelming evidence to the contrary, they assume that the child either cannot speak or has not learned. So they proceed to "help" him speak. . . . And when, "in spite of all their help" he "stutters worse than ever," they worry more and more. . . . There has been and still is a great deal of controversy among speech pathologists as to the most probable cause of stuttering. . . . But no one outside of general semantics has ever suggested that the diagnosis of stuttering was a cause of it, probably because no one outside of general semantics has appeared to realize the degree to which two persons talking about "stuttering" could be at variance in what they were talking about, and could be influencing what they were talking about. The uncertainty principle which expresses the effect of the observer on what he observes can be extended to include the effect of the speaker on what he names (pp. 189-93).18

Changes in attitudes, in our ways of evaluating, involve intimately "perceptual processes" at different levels. Making us conscious of our unconscious assumptions is essential; it is involved in all psychotherapy and should be a part of education in general. In this connection the extremely important and relevant work of Dr. Adelbert Ames, Jr., at the Hanover Institute and Princeton University, etc., is very useful in bringing about such consciousness. For example, Dr. J. S. A. Bois (4), consulting psychologist in Montreal and past president of the Canadian Psychological Association, in his report on "Executive Training and General Semantics" writes of his class in a basic training course in the non-Aristotelian methodology to seven key men of an industrial organization:

I proceeded to disequilibrate their self-assurance by demonstrating that our sensory perceptions are not reliable. . . . We ended by accepting the fact that

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18 By permission of M. Kendig, editor, Papers from the Second American Congress on General Semantics (Lakeville, Conn.: Institute of General Semantics, 1943), and of the author.
the world which each one of us perceives is not an "objective" world of happenings, but a "subjective" world of happenings-meanings.

They were quite ready to accept these new views, but I felt that it was necessary to make them conscious of the fact that it is not sufficient to "understand" certain principles and to accept them "intellectually." It is imperative to change our habitual methods of thinking, and this is not so easy as it seems. To bring this last point home, I explained to them the senary number notation system, and gave them some homework on it: making a multiplication table, long additions, subtractions, multiplications and divisions. The following day they were conscious that it is annoying, irritating, and not so easy to pass from one method of thinking to another. They realized that keeping accounts in the senary system would mean a revolution in the office and the factory, would demand new gears in the calculating machines, etc., etc. I felt the stage was set for the main part of the course. . . . It is impossible to evaluate quantitatively the success or failure of such a course. The fact that the top group wanted it to be given to their immediate subordinates is already an indication that they found it helpful.17

Bois reported further that the men made their own evaluations in terms of increased efficiency, better "emotional" control and maturity, better techniques of communication among themselves and with their subordinates, etc.

Observations made of a formalized group procedure at Northwestern University by Liston Tatum suggest that when people are forced to follow the "natural order of evaluation" (evaluating by facts first, then making generalizations) they talk to each other differently (43).

The effect of language on our visual evaluations is shown in a study reported by L. Carmichael, H. P. Hogan, and A. A. Walter (5, pp. 74-82) entitled "An Experimental Study of the Effect of Language on the Reproduction of Visually Perceived Form." It was investigated whether the reproduction of visual forms was affected when a set of twelve figures was presented with a name assigned to each figure. The subjects were to reproduce the figures as accurately as possible after the series was over. The same visual figure was presented to all subjects, but one list of names was given to the figures when they were presented to one group of subjects, and the other list of names accompanied the figures given to a second group. For example: kidney bean ( ) canoe. The results indicated that "the present experiment tends to confirm the observations of previous experimenters in this field, and to show that, to some extent at least, the reproduction of forms may be determined by the nature of words

17 By permission of J. S. A. Bois.
presented orally to subjects at the time that they are first perceiving specific visual forms."

Professor Irving Lee has been trying out the above procedures on students in his classes in general semantics at Northwestern University and reports (in a personal communication to me) that so far his students do not react as the subjects in the above experiment did, but that his students "drew the pictures far less influenced by the labels applied."

Of his teaching of non-Aristotelian methodology to policemen, Lee has written a preliminary report of a three-year pilot study with 140 policemen, from patrolmen to captains, enrolled in the Traffic Police Administration Course in the Northwestern University Traffic Institute (27). From the reports of the instructors and interviews and information from a cross-section of the students after completion of the course, Lee writes, the results indicate that the policemen saw themselves and their work in the school in quite different light after advice on the extensionalizing processes.

Psychologists and others may be interested in the following personal communication giving preliminary data which indicate new fields of investigation in criminology, personality development, etc. Dr. Douglas M. Kelley, professor of criminology at the University of California at Berkeley, has recently written me:

At present I am concerned with the introduction of general semantics into two areas—interrogation and personality development. The first field is covered in a course which I give for 3 units, Detection of Deception, which consists to begin with of a half semester of straight general semantics, beginning with a discussion on the futility of words in communication and carrying right through to the various devices. The latter half of the course is concerned with the emotional relation of words as demonstrated by various types of lie detectors, and with report writing, where again the problems of multi-ordinality, etc., are dealt with at great length. A survey of all the existent literature indicates a complete lack of information in this area, and this approach purely based on your work reports an entirely new notion and opens up interrogative techniques and vistas hitherto unknown. It is my opinion from talking with a number of police officers that this approach will yield one of the most valuable results achieved from application of general semantics. In addition, I am teaching the same material to the Berkeley police force.

In my course on the Psychiatric Aspects of Criminology, a large amount of discussion is included, based upon your work, as a method of indicating how and why people behave like human beings, and what possibly can be done about it. The students are all most favorably inclined toward the general semantics orientation, and I expect within a year or so to have a real program developed. 18

18 By permission of Douglas M. Kelley, M.D.
During the Second World War Kelley\(^{19}\) employed the basic principles of non-Aristotelian methodology with over seven thousand cases in the European Theater of Operations, reported on in his article “The Use of General Semantics and Korzybskian Principles as an Extensional Method of Group Psychotherapy in Traumatic Neuroses” (15). The principles were applied (as individual therapies and as group therapies) at every treatment level from the forward area to the rear-most echelon, in front line aid stations, in exhaustion centers, and in general hospitals. “That they were employed with success is demonstrated by the fact that psychiatric evacuations from the European Theater were held to a minimum,” Dr. Kelley states (16, pp. vi-vii). “[The] other techniques are, of course, of value but these two simple devices [indexing and dating] proved remarkably potent in this type of neurotic reaction” (15, p. 7).

An example of the effect of indexing and dating, the main devices by which the structure of our language is made similar in structure to the world, may be seen by the reactions of a veteran from the Pacific Theater of War. This veteran was a student of Professor Elwood Murray at the University of Denver. I quote from the veteran’s report:

An example of pure identification comes out in the veteran’s dislike for rice. His first view of the enemy dead was that of a Jap soldier which was in the process of deterioration. The bag of rice the soldier had been carrying was torn open and grains of rice were scattered over the body mixed in with maggots. When the veteran, to this day, sees rice, the above described scene is vivid and he imagines grains of rice moving in his dish. To overcome this, he has eaten rice several times trying to remember the rice before him is not the same as that on the body. Though the food is not relished, he has succeeded in overcoming the vomiting reflex at the sight of rice (19, p. 262).

These mechanisms of evaluating or “perceiving” similarities and neglecting, or not being fully aware of, the differences are potentially present in every one of us, but usually not in such extreme degrees. This involves the lack of differentiation between the silent and verbal levels and nonawareness of our processes of abstracting. The different orders of abstractions are identified, an inference is evaluated as if it were a description, a description as if it were the nonverbal “object” our nervous system constructed, and an “object” as if it were the nonverbal, submicroscopic, dynamic process.

In our non-Aristotelian work we deal very little, if at all, with “perceptions” as such. As our attitudes, however, are bound to be

\(^{19}\) During the war Dr. Kelley was Chief Consultant in Clinical Psychology and Assistant Consultant in Psychiatry to the European Theater of Operations; also Chief Psychiatrist in charge of the prisoners at Nuremberg.
involved with our "perceptions," it would appear that the investigation of the structure of language becomes relevant indeed.

A great deal of work has been and is being done in struggling with the problem of prejudices. Analyses show that the mechanisms of prejudices involve identifications of verbal with nonverbal levels. That is, an individual or group is evaluated by the label and not by the extensional facts (26, pp. 17-28; 28). In a discussion of mechanisms of prejudice and a report on his teaching of general semantics to approximately six hundred people where he stressed the confusion of observation and inferential statements, the response to labels as if they labeled more than aspects, etc., Lee reports one of his findings as follows:

Teachers reported greatly reduced tension when students came to apply what they heard to differences of opinion in the class discussions. The questions "Could they be called anything else?" "Is that an inference?" "Is that what could be observed?" put to a member making a sharp statement created a kind of game atmosphere. An example typical of many occurred in a discussion concerned with what people say about Negroes. Two of the participants most vocal in their assertions that "Negroes won't take advantage of education even if made available" were brought to scrutinize those assertions without the antagonism that results in the usual pro and con debating (28, p. 32).

It is of particular interest to consider the methods of the magicians, who have highly developed their art and even science for purposes of entertainment. Their methods of magic, however, have a deep underlying psychology of deception, self-deception, and misdirection. They have their own literature, so important for psychology, psychiatry, and daily life.

I quote from the paper by Dr. Douglas Kelley20 entitled "The Psycho-logical Basis of Misdirection: An Extensional Non-aristotelian Method for Prevention of Self-deception" (14, pp. 53-60):

While the artist in conjuring never hypnotizes his audience, not even in India, he accomplishes much the same results by his ability to create illusions by giving a wrong direction to their expectations and assumptions. By this means he can make his public fail to see what is in front of their very eyes, or believe that they see what is not there (p. 53). . . . A general though unconscious belief in the three aristotelian "laws of thought" plays a part of major importance in the success of such misdirection, since there is a general tendency to react in terms of those "laws."

20 By permission of M. Kendig, editor, Papers from the Second American Congress on General Semantics (Lakeville, Conn.: Institute of General Semantics, 1943), and of the author.
For instance, Dr. Kelley explains,

If a hat is faked with a false bottom, it may be shown to be apparently empty by the camouflaged lining in the bottom. If it is then tossed about in a reckless fashion, it simulates an empty hat since nothing drops out. Since, according to the two-valued "law of the excluded middle," an existent thing has certain "properties" or does not have them, and since most people following this law expect to see objects if they are present in a hat and expect them to fall out when it is inverted, they are easily fooled by the misdirection employed and consequently are unable to predict the appearance of the rabbit which is eventually drawn forth by the conjurer (p. 57).

Magicians find that children are much more difficult to deceive than adults, as the structural implications of our language have not yet to such an extent put their limitations on the ability of children to "perceive."

The Circularity of Human Knowledge

The electronic or electro-colloidal processes are operating on submicroscopic levels. From the indefinitely many characteristics of these processes, our nervous system abstracts and integrates a comparatively few, which we may call the gross or macroscopic levels, or the "objective" levels, all of them not verbal. The microscopic levels must be considered as instrumentally aided "sense data" and I will not deal with them here. Then, abstracting further, first on the labeling or descriptive levels, we pass to the inferential levels, and we can try to convey to the other fellow our "feeling about feeling," "thinking about thinking," etc., which actually happen on the silent levels. Finally, we come to the point where we need to speak about speaking.

Scientifically it is known that the submicroscopic levels are not "perceptible" or "perceptual." We do not and cannot "perceive" the "electron," but we observe actually the results of the eventual "electronic processes." That is, we observe the "effects" and assume the "causes." In other words, as explained before, our submicroscopic knowledge is hypothetical in character. The world behaves as if its mechanisms were such as our highest abstractions lead us to believe, and we will continue to invent theories with their appropriate terminologies to account for the intrinsic mechanisms of the world we live in, ourselves included. We read into nature our own latest highest abstractions, thus completing the inherent circularity of human knowledge, without which our understanding of nature is impossible.

Because of what was explained in the first part of this chapter (pages 172-74), and aided by the extensional methods and devices,
we must come to the conclusion that inferential knowledge is often much more reliable at a date, after cross-verification, than the original "sense data," with which historically we had to start and which have been found to be wanting.

In scientizing, the inferential data must converge. If they do not, we usually have to revise our theories. It is well known that when a new factor is discovered our older generalizations have to be revised for the sake of the integration of our knowledge (21, pp. xxviii ff.).

Our inferences, as abstractions on other levels than the "sense data," may also be on lower or higher orders of abstractions. The structure of our recent knowledge is such that we read into, or project onto, the silent, submicroscopic process levels the highest abstractions yet made by man, our hypotheses, inferences, etc.

Thus, all our fundamental deeper knowledge must be, and can never be anything but, hypothetical, as what we see, hear, feel, speak about, or infer, is never it, but only our human abstractions about "it." What kind of linguistic form our inferential knowledge is cast in thus becomes of utmost importance. As Edward Sapir has put it, "We see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation" (41, p. 245).

This circular process of our nervous systems in inter-action with the environments turns out to be a "feedback system," a most happy term which has been introduced lately and which exactly depicts the situation. According to Lawrence Frank (10):

We are shifting our focus of interest from static entities to dynamic processes and the order of events as seen in a context or field where there are inter-reactions and circular processes in operation. . . . The concept of teleological mechanisms, however it may be expressed in different terms, may be viewed as an attempt to escape from these older mechanistic formulations that now appear inadequate, and to provide new and more fruitful conceptions and more effective methodologies for studying self-regulating processes, self-orienting systems and organisms, and self-directing personalities. . . . Thus, the terms feedback, servomechanisms, circular systems, and circular processes may be viewed as different but equivalent expressions of much the same basic conception (10, pp. 190, 191).

The mechanisms of "feedback" have been brought to their culmination in humans, and the process of time-binding itself may be considered as an unprecedented, unique organic spiraling of feedbacks.

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21 See (21, pp. xxviii ff.).
22 By permission of Annals of the New York Academy of Sciences and the author.
In the exponential "spiral theory" given in my *Mankind of Humanity* (18, pp. 232 ff.), our time-binding capacity is obviously based on feedback mechanisms, chain-reactions, etc., without which humans as humans could not exist. The new understanding of humans as a time-binding class of life, free from the older crippling mythological or zoological assumptions, is one of the pivotal points toward a new evaluation of the unique role of humans in this world. It encourages or sponsors better understanding of ourselves, not only in relation to the world at large, but also toward ourselves.

I believe it is essential to begin with an entirely new functional formulation, with the implications which this involves for the study of "man" as "an organism-as-a-whole-in-an-environment," including our neuro-semantic and neuro-linguistic environments as environment.

In closing, I can find no more fitting summary than to quote the passages given below, which so beautifully and profoundly express the foundation of human knowledge.

It was Cassius J. Keyser who said:

... for it is obvious, once the fact is pointed out, that the character of human history, the character of human conduct, and the character of all our human institutions depend both upon what man is and in equal or greater measure upon what we humans think man is (17, p. 424).23

This inescapable characteristic of human living has been formulated differently, but just as aptly, by Dr. Alexis Carrel:

To progress again, man must remake himself. And he cannot remake himself without suffering. For he is both the marble and the sculptor (6, p. 274).

Arthur S. Eddington expresses himself in different words:

And yet, in regard to the nature of things, this knowledge is only an empty shell—a form of symbols. It is knowledge of structural form, and not knowledge of content. All through the physical world runs that unknown content, which must surely be the stuff of our consciousness. Here is a hint of aspects deep within the world of physics, and yet unattainable by the methods of physics. And, moreover, we have found that where science has progressed the farthest, the mind has but regained from nature that which the mind has put into nature.

We have found a strange foot-print on the shores of the unknown. We have devised profound theories, one after another, to account for its origin. At last, we have succeeded in reconstructing the creature that made the foot-print. And Lo! it is our own (9, p. 200).24

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23 By permission of Mrs. C. J. Keyser.
24 By permission of Cambridge University Press.
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