

GENERAL SEMANTICS, PSYCHIATRY, PSYCHOTHERAPY AND PREVENTION¹

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SCOPE, METHODS AND IMPLICATIONS

General Semantics is not a medical science, but like bacteriology, it is essential to general medicine and particularly psychiatry. General medicine without psychiatry and psychosomatic considerations represents little more than glorified veterinary science. Psychiatry and psychotherapy without general semantics cannot help but involve metaphysical factors. General semantics is a strictly empirical, natural science. It recognizes neuro-linguistic and neuro-semantic environments as unavoidable conditioning environments, and considers 'mental' illness, science and mathematics as types of human reactions. We discover that all forms of human reactions involve some common mechanisms which work automatically for the benefit or detriment of humanity. (I) (See notes.)

There are, however, formidable difficulties in this work about which it may be wise to forewarn the reader. The power of terminology is well-known in science. As yet this problem is entirely disregarded in our daily linguistic habits, and not properly evaluated even in psychiatry. The problem is serious because of the well-known difficulty of recanalizing our nervous systems. The language we use in general semantics is standard English, yet it involves selected and tested terms with unfamiliar structural assumptions, carrying far-reaching consequences. Thus, in the old way we used terms like 'emotion' and 'intellect' which imply the

splitting of these manifestations. In general semantics we use the term 'evaluation' which does not involve splitting, although it covers the same field of reaction. Similarly, the Einstein-Minkowski non-split 'space-time' is usually translated, through habits of speech, into 'space' and 'time' which has split implications, abolishing entirely the work of Einstein, without which modern physics would be impossible.

Our daily use of language implies an aristotelian, two-valued ('either-or') anthropomorphic world of 'properties,' which ultimately turns out to be, in principle, delusional. How much such delusions affect the individual depends upon his power of resistance to such a harmful neuro-linguistic environment.

The human world in which we live is based on science (constructively or destructively) and therefore on non-euclidean, non-newtonian and non-aristotelian systems, yet our inherited orientations remain aristotelian, euclidean and newtonian, which are quite different. Under such conditions optimum human adjustment is, in principle, impossible. Psychiatric students can readily understand that the world is afflicted with what may be called aristotelian maladjustment, neurosis or even psychosis. To remedy such conditions is difficult but necessary if we want to save our sanity.

In mathematics we use extensively the method of interpolation. In building curves we do not have all the points. We have a number of them and then connect the points with a smooth curve. The equation of that curve is given on the basis of the actual data involved. The nervous processes which build up equations are the same as those which build up ordinary generalizations in daily life; namely, we interpolate from the data we have. It is entirely disregarded even by mathematicians that when only one new factor enters, it may transform the curve en-

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tirely with a very serious change in the equation.

As an example I can suggest the work of Professor Burrige(2), who in addition to older physiological considerations did not disregard the colloidal structure of protoplasm and introduced that new unavoidable factor. In this case it does not matter whether the particular colloidal theory suggested by Burrige is correct or not. The fact that he introduced a new structural factor leads to entirely different interpretations and generalizations. This requires a complete revision of physiology, neurology and in fact, medicine, and psychiatry, although the first order facts remain.

The same applies to the work of Dr. Petersen(3), who introduced the new factor of weather when dealing with patients; or Freud(4) who introduced the unconscious or Einstein and others(5) who introduced the finite velocity of light into the newtonian system. In general semantics we introduce two new unavoidable factors; namely, our neuro-semantic and neuro-linguistic *environment as environment*, which also requires a radical revision of what we know and should particularly interest psychiatrists and educators. The old aristotelian two-valued orientations, resulting in lack of flexibility on the part of many scientists, accounts to a large extent for our tragic cultural lag, and stubborn, blind entrenchment of the professions.

TERMINOLOGY

The word 'semantics' is derived from the Greek 'semantikos,' 'to signify,' 'to mean.' This term was introduced by Michel Bréal in 1897. Originally, and even today, the word 'semantics' is used for the most part in the sense of the meaning of words as defined by words, and the significance of words as affecting human reactions has been neglected. It is true that the two terms 'meaning' and 'significance' somehow overlap, with a resulting confusion and difficulty of analysis. We use the term 'general semantics' in preference to the old 'semantics' to indicate a fundamental difference between the two. The older difficulties originated because specialists in the 'meaning' of words disregarded an unavoidable factor; namely, that any linguistic or mathematical theory must

begin with undefined terms which cannot be defined any further by words. In principle these *undefined terms* are labels for direct experiences and observations which involve subcortical processes on the *silent (unspeakable) level*. Obviously no amount of verbal definition can convey to the individual first order pain, which he has to *evaluate* on the silent, organismal level inside of his skin.

The introduction of the terms 'unspeakable,' or 'silent' level eliminates another serious source of confusion. We are accustomed to use the terms 'objective' and 'subjective.' Thus, the direct experience of, say a pinch, usually is called 'subjective,' and, say an apple, is called 'objective.' The facts in the meantime are that both the apple and the pinch may be considered 'subjective' or 'objective' as we please, both being products of the nervous system. By accepting this unified terminology; namely, 'unspeakable,' or 'silent' level, we automatically eliminate endless, useless verbal bickerings.

In general semantics we introduce a *general theory of evaluation* having very little to do with the meaning of words by verbal definitions. It is important to notice that the term 'evaluation' implies a special structure in that it applies to both 'emotion' and 'intellect,' and even organismal evaluations such as 'senses,' pain, pleasure, blushing, smiling, etc.

The term 'evaluation' implies also environmental factors because obviously there must be something to evaluate. Thus, evaluation is more than an organism-as-a-whole term; it is a *non-elementalistic term*(6) because it implies inclusion of the environment. We need a special technique to handle such terms which I will explain presently.

STRUCTURAL REPRESENTATION, PREDICTABILITY AND IDENTIFICATION

Briefly we can say that *sanity* may be considered 'proper evaluation.' '*Mental illness*' and maladjustments of every degree represent '*misevaluation*.' In science as well as in general semantics we test evaluation not by verbal definitions but by *predictability*, which must be verified empirically. If predicted facts happen, the evaluation was proper; if they do not, the evaluation was not proper. We see that we are dealing with a key

problem of sanity which affects individual, national and international adjustment. The problems are of serious importance and so we have to discover the essential factors for predictability and therefore proper evaluation(7).

Let us consider the relationship between a map and the territory it represents. Obviously for maximum predictability the map must be *similar in structure* to the actual territory. We consider structure as a bundle of *relations*, and similarity of structure in terms of *order*.⁸

⁸ The benefits of using such a non-elementalistic term as 'order,' which is a key term in general semantics, are manifold. For our purpose we need to consider only a few:

1. Exact sciences which have maximum predictability are based on multi-dimensional order. As we are living in a world of processes, we have to consider only four-dimensional order. As a matter of scientific advance, if we can put some human reactions in terms of order, we gain a bridging term between human affairs and exact sciences which allows us to build a *science of man*.
2. Ordering of human reactions, for which we need a special technique, and which is the main neurological mechanism of general semantics and of the non-aristotelian system, automatically introduces delayed reactions. These are predominantly cortical functions in contrast to the predominantly reflex, undelayed subcortical (animalistic) functions. The stress on delayed reactions is not new 'wisdom.' There is an age-old saying, 'When mad count to ten.' Practically all human maladjustments, including most neuroses and psychoses, involve undelayed reactions; hence the *preventive* and even therapeutic value of the introduction of permanent automatic delayed reactions, for a fraction of a second, which prevents 'emotional' outbursts (8).
3. Automatic delay of reactions stimulates the cortex, which then performs its natural function of protecting the over-stimulated thalamus, resulting in the functional integration of the nervous system. This affects endocrine secretions, gonads included, blood pressure, etc., often with unpredictable psychosomatic beneficial effects.
4. Ordering, and therefore delay of reactions, transforms the animalistic infantile and 'mentally' ill *signal* reactions, which are reflex and undelayed, into adult, human and sane *symbol* (evaluational) reactions.

Let us investigate some pertinent relations between the map and the territory to discover some factors of the coveted predictability and therefore proper evaluation. We find that:

1. The map *is not* the territory.
2. The map represents *not all* the territory.
3. The map is *self-reflexive*.

It should be noticed that what has been said about map-territory relationship applies mostly to other forms of representation, and certainly applies point by point to the language-fact relationship. Thus:

1. A word *is not* the fact, feeling, situation, relation, etc.
2. A word covers *not all* the characteristics of an object, fact, feeling, etc.
3. Language also is self-reflexive in the sense that in language we can speak about language.

In general semantics we call these three premises fundamental non-aristotelian premises. The first two are quite obvious, and turn out to be a flat denial of the old aristotelian verbalistic orientations which, following the structure of language, became evaluations as living issues. They were silent assumptions, vicious because not recognized as such. The third premise indicates that an ideal map would include a map of the map, which applies to other forms of representation, language included. This characteristic of certain forms of representation was discovered by Professor Royce in probing mathematical difficulties, and labelled 'self-reflexiveness' by him(10).

Premise 1.—The old aristotelian orientations are based on the *is of identity*, which is invariably false to facts, as nothing is identical with anything else, and in a world of electronic, electro-colloidal processes even these processes are not identical with themselves(11).

In psycho-logical and evaluational processes we mostly identify our verbal statements or judgments about the facts with the

This is tragically needed if sanity is to prevail, and can be accomplished by the application of physico-mathematical methods to life and daily orientations (evaluations) (9).

actual facts, which facts are on the silent unspeakable level, not on the verbal level. Psychiatrists know well enough the tragic consequences of identifications in their patients. What has evaded the attention of psychiatrists is permanent identifications in daily life, with harmful, even psychosomatic results.⁴

Premise 2.—*Non-allness* expresses a flat denial of aristotelian verbalistic 'allness,' which builds up faith in verbal generalizations and is responsible for most of the dogmatism, categorism, absolutism, as if some linguistic issues and creeds were valid 'for all time to come.' The tendency to generalize in the Pavlov sense does not give full play to human cortical differentiation. By disregarding such issues we canalize human nervous systems in animalistic reflex reactions.

Even in mathematics we learned only lately that generalizations from *some* cases to 'all' cases are often invalid.⁵ Such mis-

⁴ An illustration may be helpful. In my seminars I pick a young woman student and prearrange with her a demonstration about which the class knows nothing. During the lecture she is called to the platform and I hand her a box of matches which she carelessly drops on the desk. That is the only 'crime' she commits. I begin then to call her names with a display of anger, waving my fists, and finally with a big gesture I slap her face gently. Seeing this, ninety per cent of the class recoil and shudder, ten per cent show no overt reactions. These latter have seen what they have seen, but they delayed their evaluations. Then I explain to the students that their recoil and shudder was an organismal evaluation very harmful in principle, because they *identified* the seen facts with their judgment, creeds, dogmas, and their reaction was entirely unjustified, as it turned out to be merely a scientific demonstration of the mechanism of identification, which identification I expected. In the rough, the seen was on the predominantly subcortical silent level, the shudder was due to the predominantly cortical linguistic level.

A similar organismal identification is very well illustrated by a 'mental' patient of Dr. Prince who had hay fever. When Dr. Prince flashed paper roses from behind a screen the patient got an attack of hay fever, profound organismal reaction without the physico-chemical stimulus of actual roses (12).

⁵ Unlimited 'allness' has led even to serious mathematical difficulties which only recently the mathematical theory of types of Bertrand Russell has tried to remedy by an introduction of the notion of 'illegitimate totalities' (13).

evaluations are common in life, leading to minor maladjustments and even to neurosis or psychosis.

Premise 3.—This premise describes linguistic facts which have been entirely disregarded in the past except in mathematics. In general semantics we discover that self-reflexiveness is found at the bottom of scientific difficulties and life maladjustments. This disregard plays havoc with human evaluations, and results in endless verbalistic bickerings.

Biologically speaking, the survival mechanisms of the human organism are different from those of animals. Animals cannot 'talk' themselves psychosomatically into maladjustments and even disasters as we human beings methodically do. However, under laboratory conditions, when men play tricks on animals, even animals break down and may exhibit experimental 'neuroses.'

Further analysis of this self-reflexiveness leads to the discovery of the multiordinality of the most important terms we use. Without the recognition of this multiordinality we are frequently led to the most pathetic confusions, and maladjustments of every degree (14).

Multiordinal terms correspond to the multiordinal neuro-semantic and neuro-linguistic mechanisms which operate in us. Take, for example 'never say never.' Both words 'never' look alike, are spelled similarly, yet they are on different levels of abstraction and have different values, one unlimited, limiting the other. Any statement about another statement is by necessity an abstraction of higher order than the first statement, involving new neurological processes.

Terms like 'yes,' 'no,' 'true,' 'false,' 'fact,' 'reality,' 'love,' 'hate,' 'doubt,' 'evaluation,' are multiordinal and the corresponding mechanisms can be applied to any orders of abstraction. As the spelling and pronunciation on each level is similar, because of the generalizing tendencies of the nervous system, we assume that they have the same extensional content, which as a matter of fact they have not. This misunderstanding produces enormous difficulties in adjustment, no matter whether we are morons or geniuses, as the kernel of the difficulty is neuro-linguistic and neuro-semantic. It is not to

be solved without a thorough revision of our linguistic techniques, and our consciousness of the mechanisms is the only possible safeguard. We will return to this subject later on.

VERBAL MISREPRESENTATION AND 'FALSE KNOWLEDGE'

As we have seen, for maximum predictability and proper evaluation we must have map-language *similar in structure* to the territory-facts. It is an *empirical* problem to discover by observation whether our language is similar in structure to the facts or not. Empirically 'matter,' 'space' and 'time,' 'emotions' and 'intellect,' etc., cannot be separated or split, although verbally we can separate the words in a split language all we want to. Many spurious volumes have been written on such verbal splits. The simple fact is that nature is non-elementalistic whereas the structure of our language is elementalistic.

The physico-mathematical methods with their clear-cut, undefined terms, postulates, etc., bring to consciousness the assumptions, hypotheses, creeds on which any system of orientation or evaluation is based. Such methods lead to the elimination of false knowledge. In our private lives we much too often act and react *as if* our conscious or unconscious false to fact assumptions were 'all there is to be known,' which actually generates false knowledge.

To give only one striking example, most of us are conscious of so-called 'sex,' in the most naive sense, on the assumption that the very limited 'sex proper' is 'all' of the function of the gonads, which assumption postulates false knowledge. The facts are that the gonads are internal secretion glands, that roughly speaking, nine-tenths of their function is to vitalize the whole organism, *brain included* (15), and only one-tenth of their function may be considered as 'sex proper,' in the narrow sense. One of the reasons that psychiatrists have to deal so often with 'sex' difficulties is the false knowledge their patients have about the functions of the gonads. To my knowledge this formulation is novel, and has escaped the attention of psychiatrists. The point is that we

are *directly aware* of the one-tenth functioning and, unless told by science, *entirely unaware* of the nine-tenth functioning. In general semantics we are interested in the neuro-semantic and neuro-linguistic functioning of the nervous system, not 'sex' in the narrow sense. As the two functions of the gonads are strictly interconnected, we shall observe, when we bring to consciousness these mechanisms that many 'sex' troubles disappear. We have many cases illustrating the working of these projection mechanisms. It is no longer a mystery that a great many psychosomatic difficulties arise on semantogenic grounds, and there should be no difficulty in understanding that when semantogenic disturbances are eliminated, which is the problem of general semantics, beneficial psychosomatic consequences should follow.

INTENSION AND EXTENSION

Investigating further the similarity of structure between language and facts, we find that the actual world is made up of individuals such as Smith₁, Smith₂, etc., chair₁, chair₂, etc., and that such words as 'man,' or 'chair' are only labels for verbal generalizations, verbal definitions, and therefore ultimately verbal fictions. These simple and obvious observations formulate one of the most fundamental facts of nature and indicate serious structural discrepancies between the facts and our customary language.

Here we have to explain two new terms which were originated, if I am not mistaken, by Aristotle himself, although they were never applied in our sense; namely, 'intension' (note the spelling with an 's') and 'extension'⁶ (16). A definition by intension is given in terms of aristotelian properties. For instance, 'man' may be defined as a 'featherless biped.' Such a definition applies to every human being yet covers no one. A definition by extension, which as yet is utilized exclusively in mathematics and general semantics, is given by exhibiting the individual. Thus by extension 'man' can be defined as a class of individuals made up of

⁶ The problems are very complex and I suggest that the reader consult any book of 'logic' on this subject. Here we must limit ourselves to the problem of 'definitions.'

Smith₁, Smith₂, etc. When we introduce such an extensional structure of language and use it permanently as an inside orientation, profound, integrative, neuro-semantic and neuro-linguistic consequences follow.

NEUROPSYCHIC MECHANISMS

We consider linguistic issues as predominantly 'cortical'⁷ functions. So-called 'senses,' 'emotions,' 'pain-pleasure,' blood pressure, etc., are known to be predominantly 'thalamic' functions. Experience shows that the 'cortex' and the 'thalamus' are very often poorly integrated functionally, and our main problem is to bring about a better integration if at all possible. We have on record many cases of verbally brilliant persons who have no contact with life and are maladjusted, in extreme cases often to the point of hospitalization.

As pointed out by Pavlov, the old brain shows a tendency for uncritical generalizations. The new brain introduces a tendency for differentiation of higher order. When too fine differentiation is imposed on the old brain, especially by pain or fright, there is a conflict, and that is exactly the mechanism by which experimental neurosis is produced in animals, and eventually in human subjects who have not been properly educated in the use of cortical differentiating mechanisms. Differentiation by the new brain in an integrated and mature nervous system does not introduce conflict but, on the contrary, regulates and protects the older brain.

In contrast with animals, the human cortex matures at approximately 18, and many differentiations acquired in childhood through fear or pain, are mostly on the old brain level. This explains why many maladjustments, stuttering, neuroses and even psychoses, originate in childhood when the new brain is immature. What is 'learned'

on the old brain level is 'learned for good' and often persists for life, which accounts for the difficulties of psychotherapy. Furthermore, in the human world the thalamus is as a rule over-stimulated, and one of the functions of the cortex is to protect the thalamus.

It must be clearly realized that the thalamus has no linguistic centers and so will not be affected directly by the old language of intensional structure, but it can be affected by extensional methods and extensional structure of language because thalamic factors are introduced. Consequently we must always watch for different cortical doctrines or creeds which mean verbalization or rationalization and which instead of protecting the thalamus add to its over-stimulation. Thus some individuals can talk themselves into serious maladjustments; they rationalize cortically their 'thalamic' patterns of conduct.

The cortex, in the terminology of Herick(17), (1) has a dynamogenic effect, (2) produces a differential activation, functionally resulting in delayed reactions. These separate aspects represent only verbal fictions or splittings; but the nervous system works as a whole and the verbalistic aspects do not exist or work in separation. There is, however, a *functional aspect* of the cortex which is not elementalistic; namely, to *delay the reactions*. Animal or 'mentally' ill reactions are of a reflex signal reaction type or an immediate response to a stimulus. There is no delay, which on human levels means allowing 'time' to pass the nerve currents through the longer paths of the cortex, resulting in the transformation of animal or 'mentally' ill *signal* reactions into human *symbol* reactions which involve cortical differentiation.

NATURAL ORDER OF EVALUATION

Returning to non-elementalistic order, we already established one scientific criterion for proper evaluation; namely, the testing by predictability. Here we give another fundamental criterion for evaluation; namely, what I call *natural order of evaluation* (18). It should be remembered that evaluation is not only a multiordinal term which

⁷ Through lack of space and the difficulty of presentation of so complex a subject what will be said here will be over-simplified, not to be taken literally. Thus by 'thalamus' we mean predominantly the diencephalic region, which includes the hypothalamus, etc. By 'cortex' we mean predominantly the frontal and prefrontal cortical regions, but not excluding other cortical and subcortical levels. Dealing with electro-colloidal, functional and dynamic issues, it is impossible to be more specific without making misstatements.

applies to all known levels of abstraction, but represents also an irreversible asymmetrical relation involving 'more' or 'less,' of the type: If *A* is more than *B*, then *B* is never more than *A*. In symmetrical relations, such as *A* is the spouse of *B*, or *A* equals *B*, then *B* is the spouse of *A*, or *B* equals *A*. In other words, the symmetrical relations are reversible(19).

In the natural order of evaluation,

(1) The *process* 'apple' (biochemical features) is more important than the object 'apple' which our nervous system constructs.

(2) The *object* 'apple' is more important than a description of the apple.

(3) A *description* is more important than an inference of low order.

(4) An *inference of low order* is more reliable or important than an

(5) *Inference of high order*, etc.

Our customary evaluation by the reversed natural order is bound to be pathological. According to the old orientation we disregard or do not know about the process character of say, 'apple.' We evaluate the object as the most important, which means we reverse the natural order of evaluation. In daily life, dealing with our own psychological reactions, we often give more value to our judgments, which are higher order abstractions, than to the first order experiences, which are on the non-verbal silent level, and so of lower order abstraction. Here again we have a reversal of the natural order. Moreover we orient ourselves and evaluate by different creeds and dogmas, highly inferential, and we treat them as descriptions, exhibiting once more the reversal of natural order.

It should be noticed carefully that those pathological reversals of the natural order of evaluation involve the identification in value of different orders of abstraction which as a matter of fact are not identical in value. I believe this is the mechanism which makes the reversal of the natural order of evaluation pathogenic.

Neuro-linguistic issues are involved here also. In the evolution of the human race and language there was a natural order established; namely, the facts came first and

labels (words) next. Today, from childhood up, we inculcate words and language first, and facts next, another pathological reversed order. Thus we are trained in signal reactions where we identify words with facts. Even in medicine we much too often deal with 'diseases' instead of an individual sick person.

In general semantics we offer a technique to overcome that reversed natural order of evaluation, thus bringing about a new adjustment based on neurological grounds. Through the method of extensionalization, we train through delayed reaction in the proper use of the cortex, and so even in early youth with the *immature human cortex*, a great deal of prevention can be accomplished. We train students in *consciousness of abstracting*(20), and therefore consciousness of self, including our neuro-semantic and neuro-linguistic environment as environment. This tends to eliminate self-consciousness which is harmful. We eliminate false knowledge and give the students elementary, modern, scientific knowledge in such fields as physics, mathematics, colloids, physiology, neurology, psychiatry, from a *biological* (survival) point of view.

We could eventually make a very simple formulation for psychotherapy. We deal as a rule with the reversal of the natural order of evaluation, so by reversing the reversed order, we restore the natural order of evaluation. This formulation sounds simple but is not so simple in practice, as it takes months to achieve this new type of evaluation. The main benefit is that it gives the student or patient a thalamic method based on order, with which he can work at himself without outside help.

METHODS OF EXTENSIONALIZATION

To achieve the coveted thalamo-cortical integration through extensionalization, we utilize what I call the 'extensional devices,' always using a slight gesture of the hands to indicate absolute individuals in space-time, orders of abstractions, etc., involving thus the kinesthetic sense, which is well-known to have an important bearing on our orientations.

The *extensional devices* are as follows: (1) Indexes, (2) Dates, (3) Etc., (4) Quotes, (5) Hyphens.

I call the first three 'working devices,' and the fourth and fifth 'safety devices.' The application may seem simple when explained, yet it is laborious and difficult to acquire as it leads to a profound neurological recanalization of a usually poorly integrated nervous system. What will be said here may seem too schematic; it conveys, however, some fundamental issues which are empirically useful. The main difficulty, I believe at present unavoidable, is based on the fact that in speaking or writing we have to use physiological or neurological terms, while in actuality the nervous system represents an electro-colloidal, functional, inter-related whole, in which every part is functionally related to every other part. With this *proviso* I will proceed.

'Thinking' or evaluating in terms of intensional generalizations such as 'man,' 'patient,' 'disease,' 'chair,' etc., is predominantly cortical, and as we are actually dealing with individuals, not definitions, our neurological coordination with thalamic functioning is unsatisfactory, and there is a split between verbalism and the living facts. If we 'think' or evaluate extensionally in terms of 'Smith₁,' 'Smith₂,' 'sick Brown₁,' 'sick Brown₂,' etc., involving our kinesthetic sense by the use of our hands in ordering or differentiating the individuals, by necessity this automatically involves the cortex by inducing *delayed reactions*, and also automatically involves the functioning of the thalamic region by forcing us to 'think' or evaluate in terms of facts instead of definitions. Obviously this training in extension helps the integration of thalamo-cortical functioning. I must repeat that in practice the extensional technique works *automatically* when applied.

An illustration may be helpful, showing the harmful effect of some verbalization. Thus Freud uncritically picked the term 'libido,' and to his own detriment and the rest of the white race, spent a life-time explaining that his 'libido' is not 'libidinous.' Similarly Freud ascribed *one* undifferentiated 'sex' to infants which revolted public opinion. If Freud had used the extensional

devices he would not have gotten into such difficulties. He would not have used the word 'sex' without indexes, dates and quotes, and he would have explained that an infant has a sensitive organ which could be labelled 'S₁⁰' at birth, 'S₂¹' at the age of one, 'S₃²' at the age of two, etc., which are obviously different although covered by the one abstract definitional 'sex,' and made obvious only by the extensional techniques. Let us be frank about it. The intensional abstract 'sex' actually varies with every individual not only with age (dates), but in relation to endless other factors.

Similarly, the fact that often 'sexy' mothers distort the 'sex' in their daughters, sometimes for life, is known, and yet by the old intensional evaluation an explanation was not forthcoming. By extension the issues are rather simple. A daughter of six, who has S₁⁶, is exposed to S₂²⁶ of a mother 26 years old, which is entirely different, and may be frightened, horrified, disgusted, baffled. Such a shock in childhood may play havoc with the rest of her life.

By intensional methods, dealing with definitions such as 'chair,' 'fear,' 'sex,' etc., the thalamic factors are missing, as definitions have very little to do with life. In an extensional orientation, such as 'chair₁,' 'chair₂,' etc., we willy-nilly introduce such factors which will affect the thalamus. By intensional methods, the differences are, so to say, driven into the 'unconscious;' by extension, they are brought to consciousness at par with similarities.

The great mathematician Sylvester said rightly that in mathematics we look for differences in similarities and similarities in differences. It is a very pertinent remark and we should discover means for applying that to daily life. Most complex neurological processes are involved in such new orientations. An orientation by intension or verbal definition is based upon and emphasizes similarities; an extensional orientation emphasizes similarities *and* differences, in a world of absolute individuals and processes. For instance, the word 'chair' emphasizes similarities, and the indexed 'chair₁,' 'chair₂,' etc., makes us conscious of similarities *and*, through indexes, of differences. That consciousness of differences and thereby of indi-

viduality, stimulates the cortex to its proper differentiating function, permitting its integrative effect. More than that, the natural function of the cortex is to delay the reaction. If we orient ourselves in terms of 'chair₁,' 'chair₂,' etc., we *automatically introduce a delayed reaction*, with all the beneficial consequences.

A typical example may illustrate the process of extensionalization through the use of devices and how results are accomplished. In many cases 'hate' seems to be the predominant reaction, usually resulting from some childhood experience. Some persons are so overwhelmed by hate that they have no affective energy left for positive feelings, and together with other symptoms the picture may resemble strikingly 'dementia præcox' cases. I must stress here that the amount of affective energy in a given individual is finite and limited. If this energy is spent on hating, deadness appears in positive manifestation.

In most cases I know, directly or indirectly, the hate is concentrated on some member of the family, for example the 'mother.' But 'mother' is a generalization, and so by intension the hate is generalized to 'all mothers,' which leaves the student lifeless, and in some cases I know, ready for hospitalization.

After a seminar course in extensionalization we explain to the student the nature of the problem and train him in indexing in his private life, in this case *allocating his hate*. We do not tell him 'love your mama,' just the opposite, we allocate his hate and encourage hate for 'that woman who bore him,' a definite individual such as Smith₁. A very curious picture appears. The more he hates 'mother,' the worse off he is. The less he hates the abstraction 'mother,' and the more he hates the individual Smith₁, the better he gets, and positive feelings toward other people and himself appear.

After allocating this hate by indexing, even this hate is ultimately undesirable. We eliminate this individualized hate by using dates. We train the student to date the years of his life, the 'mother' and date their relationship. Thus, obviously, if the student began to hate his 'mother' (Smith₁¹⁹²⁰) twenty years ago, both the student and the

'mother' were then entirely different persons, and their relationship was also entirely different. It is poor evaluation to generalize, and project the hate of twenty years ago on today's changed conditions. (Smith₁¹⁹²⁰ is not Smith₁¹⁹⁴⁰). By this procedure, which is a comparatively short one, even this individualized hate disappears. The adjustment of the student toward himself, the world and even 'mother' becomes as a rule quite good. From experience it appears that allocating the hate through indexing is a longer and more laborious process than eliminating the allocated hate through dating. This single example illustrates a general method which can be applied to a great many life situations, particularly those involving fears, inferiority feelings, frustration, etc., because identifications are so general and at the bottom of most maladjustments.

These methods apply also to a long list of disturbances known to have a semantogenic and therefore neuro-semantic and neuro-linguistic origin, such as some heart, digestive, respiratory or 'sex' disorders, chronic joint diseases, arthritis, dental caries, migraines, some skin diseases, alcoholism. Such applications are verified by the experiences of my co-workers, physicians (mostly psychiatrists), educators, and my own.

GROUP APPLICATIONS

I must stress that general semantics is not a medical science; we are not directly interested in the health, as such, of the students. Medical men may have difficulties in understanding the non-medical procedure in our dealing with students, which is briefly as follows: students have to study the inductive text book *Science and Sanity* and eventually attend a deductive seminar of about twenty-five hours, which is followed by one or more hours of personal interviews in which the student is shown the application of extensional methods to his personal problems to eliminate harmful semantogenic factors in his life.

In the seminars, as well as in private conferences, I show all I possibly can to the eye, using diagrams on a blackboard, symbolizing issues by the use of actual objects and using gestures. I find this method very effective

as it involves thalamic factors and the kinesthetic sense.

The passive, *listening*, 'father-confessor' method is no doubt effective in some cases, but it is a very slow and expensive process. As general semantics is educational, and re-educational, we *lecture* on sanity and *methods* of sanity, with a rather high percentage of beneficial results, in a comparatively short time. The psychosomatic results are really unpredictable and vary greatly. The mechanisms of these beneficial results are very complex, and as yet not fully understood. For instance, some students have nervous tics. As a rule, in the middle of the seminar course, without ever mentioning those tics, with the acquiring of nervous balance, they disappear.

Although general semantics is not a medical science, it has been a help to psychiatrists in dealing with patients. I refer, of course, to psychiatrists who have gone through training in general semantics. General practitioners have also found general semantics very helpful. The training in map-territory, language-fact relationships, the consciousness of abstracting, the non-aristotelian premises, the use of extensional devices already outlined, give to the students active methods to cope with their own problems.

It is suggested that the psychotherapy of any school, if at all successful, does nothing but extensionalize the patients by bringing them in closer contact with 'facts' and 'realities'; and this is done by individual private methods through the insight or ingenuity of the physician. Such particular methods may help patients here and there, but they cannot have general educational, re-educational and preventive value, which is the main aim of general semantics with its extensional methods. With the principles outlined in this paper, indicating unrecognized neuro-semantic and neuro-linguistic mechanisms, psychotherapeutic treatment would be more effective, shortened and therefore less expensive.

PREVENTIVE PSYCHIATRY AND SOCIAL IMPLICATIONS

Present day scientific researches and world developments show that the old aristotelian era is dying. The terrors and horrors we are

witnessing in the East and the West are the death-bed agonies of that passing era. In passing eras, as history shows, the sufferings of mankind are acute, and generations to come have to pay the price in health and wealth. What interests us in general semantics most is the *new methods of destruction* of sanity and civilization, methods based on the '*war of nerves*' and *verbal distortion introduced* by sick Hitler and his sick associates, and aped by humanly ignorant Mussolinis, Stalins and Mikados, who are fascinated by the success of the pathological performances of *verbal distortion* imposed upon the world.

We should notice the fundamental difference between propaganda, lying, trickery, deceit, etc., which may be 'dishonest,' and *pathological verbal distortion*, which may be 'honest' as far as the patient is concerned. For instance, a paranoiac may believe 'honestly' that he is persecuted, and ultimately kill to 'defend' himself. Unfortunately only psychiatrists, familiar with verbal distortions of patients in hospitals, can fully understand this difference.

Another example of the pathological use of language which Hitler and his associates have introduced, is the complete disregard of language as language, and the rôle of language in human civilization. Like other 'mentally' ill persons they make promises and treaties today which are broken tomorrow. Like others 'mentally' ill, they can rationalize their actions by verbal distortions. Any one who studies hospitalized mental patients and their writings, or who will study carefully *Mein Kampf* and the speeches of various Nazis(21), cannot miss the points made here.

We should not minimize this sick use of language. Human intercourse and civilization under such verbal conditions are profoundly harmed. The disregard of the map-territory relationship and/or deliberate distortion of it, abolishes predictability, proper evaluation, and so breeds fears and anxieties. Today the unthinking masses are having their neuro-semantic and neuro-linguistic mechanisms *trained* in such pathological reactions, and their recovery will be difficult. If a Hitler and some of his associates were not in power and protected, they most prob-

ably would be confined. Those trained under such leadership, without protection, in many instances are bound to break down, as their orientations are based on false knowledge.

When a new weapon like the magnetic mine appears, it becomes a problem for experts in physics and engineering. How about a 'war of nerves,' a 'war of verbal distortion,' a 'war of linguistic pathology'? How is it possible for ignorant, and therefore fearful, politicians to deal with such problems without relegating the solution to experts in such fields as neuro-psychiatry, anthropology and general semantics? The problems of human beings are much more complex than any magnetic mine ever was or will be. Yet politicians have never had wisdom and honesty enough, or perhaps knowledge enough, to know that human problems are self-reflexive and therefore beyond their ken at present.

If the governments of the world had employed such a group of experts years ago, as a part of their duties they would have studied *Mein Kampf*, which politicians did not read or understand. Evaluating the tragic situation, they would have reported years ago officially that a sick man is getting into power, and could have predicted the consequences. With that enlightenment, those in power could have met the situation more intelligently, and thus avoided the unbelievable blunders such as appeasements. More than that: If such an inevitable diagnosis by government experts had been officially published, even the people under "mentally" sick rulers would have refused to follow their leadership. The world is learning its lesson too late.

The conditions of the world are such today that private enterprises, professional opinions of scientific societies, or even international congresses are ineffective. Only governmental interest and backing can organize and enforce a serious movement for sanity, the more so that scientists and educators do not have the necessary time, money, authority or even initiative to carry forward a concerted plan.

What psychiatrists as a professional body can do is to urge by all means available, such as scientific papers, popular lectures and articles, that the governments should offi-

cially employ experts in neuropsychiatry, anthropology and general semantics to guide mankind toward sanity. That this has not been advanced or done before seems incredible, but at present it is unavoidable if sanity is to be restored or saved. The health of the neuro-semantic and neuro-linguistic human mechanisms is more important and difficult to take care of than any other branch of human endeavor.

As in general semantics we are concerned with the sanity of the race, including methods of prevention, I strongly appeal to psychiatrists as specialists in 'mental' illness, and therefore uniquely competent, to co-operate as a profession in such a gigantic task of post-war educational reconstruction to save for civilization whatever there is left to save, and to build from the ruins of a dying era a new and saner society.

NOTES

In the following references the italic numbers refer to the numbers of the literature in the bibliography:

- (1) 28: p. 1349; 25: p. 31; 26: p. 1; 27: pp. 147, 358-60, 533-6, 553.
- (2) 3: 4: 5: 6.
- (3) 30.
- (4) 27: pp. 147, 516, 534-6.
- (5) 27: pp. 644, 649 ff., 659 ff., 669 ff., 678.
- (6) 26: pp. 14-6, 19, 22-4, 28; 21: p. 33; 22: p. 3-4; 27: See *Science and Sanity* index.
- (7) 21: pp. 32-3; 22: p. 3; 25: pp. 29-34, 38; 27: pp. 31, 294-5, 406 ff., 440 f., 448, 456 f., 466 ff., 488, 517 f., 532, 539.
- (8) 21: p. 32; 22: p. 6; 25: pp. 36-7; 26: pp. 16-7; 27: See index.
- (9) 25: pp. 30-1; 26: pp. 5-6, 8-9, 12-5, 19-20; 27: Chap. XXI, pp. 512-3; 34.
- (10) 21: p. 33; 27: pp. 58, 323, 739, 751.
- (11) 21: pp. 33-4; 26: pp. 7-8, 11-4, 17-21, 23-6; 27: See index.
- (12) 25: p. 30; 27: p. 128.
- (13) 21: p. 33; 27: pp. 428 ff., 737 ff., 753.
- (14) 26: p. 7; 25: p. 34; 27: See index.
- (15) 12: pp. 89, 105.
- (16) 26: pp. 1-3, 8, 24; 21: pp. 34-6; 22: p. 6; 25: p. 35; 27: See index.
- (17) 15: 16: 17: 18.
- (18) 27: See index.
- (19) 27: See index.
- (20) 26: p. 20; 27: See index.
- (21) 19: 32: 33: 34: 35.

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