Joseph T. Major released his book *Heinlein’s Children* in March of 2006. This book contains an updated collection of Major’s essays on the so-called “juvenile” books of speculative fiction author, Robert A. Heinlein, published between the years of 1947 and 1963. In this book, Major draws certain conclusions about General Semantics, the study of language developed by Alfred Korzybski, and about Heinlein’s view of philosophy based on this quotation from *SpaceCadet*:

> You’ll be studying the day you retire. But even these subjects are not your education; they are simply raw materials. Your real job is to learn how to think and that means you must study other subjects; epistemology, scientific methodology, semantics, structures of languages, patterns of ethics and morals, varieties of logics, motivational psychology, and so on. This school is based on the idea that a man who can think correctly will automatically behave morally or what we call ‘morally.’ . . .” (p. 72)

Immediately following this quote, Major comments:

> Provided, of course, that the “semantics” is the field of study of the meanings of words and not the jumble of half-digested, random readings organized by a contrived jargon and symbology unique to itself (a hallmark of a pseudo-science) that was publicized under the nomenclature (“nomenclature1948”, to use a bit of that unique symbology) of “General Semantics”. Heinlein was a great believer in continued study over a broad range of knowledge. In the context of this book, one might also list this vast burden of studies as another “sickener”, an intellectual one as opposed to a physical one. The choice of topics touches on one of Heinlein’s crotchets. In fiction and fact alike Heinlein derided the concept of studying philosophy (see *Expanded Universe* p. 531, for example). Yet here Matt is studying the stuffs of philosophy. It might be how you package it. (p. #)

I would ask the following four questions:

1) Was Heinlein speaking of “semantics” as usually defined, or of “semantics” as standing for the more specific term “General Semantics”?

2) What is General Semantics, and is it a science or a “pseudo-science” as Major claims?

3) Was Heinlein being inconsistent about studying “the stuffs of philosophy”?

4) Was Heinlein’s interest in GS justified?

**Question #1**

Was Heinlein speaking of “semantics” or “General Semantics”? I have found no instances of the term “General Semantics”(GS), in any of Heinlein’s work except in his 1941 WorldCon Guest of Honor speech [Kondo p. 221]. I do find numerous direct and indirect references to GS in many of his works, however [Wright]. Korzybski’s name appears at least three times, in “Blowups Happen” (p. 47), “Coventry” (p. 391), and “Gulf” (p. 56). In “Coventry”, Heinlein specifically groups Korzybski together with C.K. Ogden and “other semanticists.”

The number of references to GS found in Heinlein’s works far exceeds one hundred. One more example should suffice here. His first major work, *For Us, The Living*, which was lost and remained unpublished until recently, contains a long section which deals with the “semantic readjustment” of the protagonist Perry Nelson (pp. 132-154). This section describes the basic concepts General Semantics exactly.

**Question #2**
What is “General Semantics”? Korzybski himself had this to say about ‘semantics’:

What is it all about? The term semantics is not new. It comes from a Greek word meaning “significance”, “value”, “meaning”. It has been used many years ago, but the old semantics is now dead. I call this new discipline General Semantics to make a difference from the old use. The science of GS is the science of values - evaluation. A general science of values and evaluation. I want you to realize and evaluate this by yourselves because I cannot do that for you. In GS we deal with values and evaluation, which represent mighty problems. [Korzybski OCL p. 6]

Arising from Korzybski’s scientific training and his early work with mental patients, GS addresses the issues of sanity in every day life, and applies the scientific method to the ways language can influence what we know and how we think.

Heinlein’s first introduction to GS was through Stuart Chase’s book The Tyranny of Words [Gladstone]. He subsequently read Science &Sanity (S&S), and met S.I. Hayakawa, an early proponent of GS and author of Language in Thought and Action, a very popular book on the subject. Heinlein was very impressed by him [Schulman p. 156]. Hayakawa appears in fictional form in Heinlein’s Expanded Universe, where he is referred to only as “Uncle Sam,” and references are made to his famous Tam O’Shanter and other distinguishing characteristics [pp. 577-579]. Even though Korzybski insisted on keeping the two fields, GS and “semantics” separate, Hayakawa continued to combine the two [Kodish, GSB 71 p. 56]. It seems likely that Heinlein picked up much of his terminology and usage from Hayakawa and from his readings in The Meaning of Meaning by Ogden and Richards.

Because of this, it is possible that Heinlein conflated the two terms due to a deep misconception of the nature GS [Wright]. Heinlein appeared to think of GS only as an extended version of regular semantics, the study of “symbology” [Kondo p.221]. In GS terminology, this confusion of terms would be described as considering only the “verbal” level of the term and ignoring the “unspeakable levels” [Korzybski, S&S p. 751].

Korzybski noted in the preface to the second edition of Science and Sanity (1941) his frustration with people misinterpreting his use of the term ‘semantics’.

There is a fundamental confusion between the notion of the older 'semantics' as connected with a theory of verbal 'meaning' and words defined by words, and the present theory of 'general semantics' where we deal only with neuro-semantic and neuro-linguistic living reactions of Smith1 Smith2, etc., as their reactions to neuro-semantic and neuro-linguistic environments as environment. (1941 p. xxx)

Is GS a pseudo-science? Major calls it “[a] jumble of half-digested, random readings organized by a contrived jargon and symbology unique to itself (a hallmark of a pseudo-science)…. With no other evidence, these charges seem damning. Major apparently fails to consider, and certainly doesn’t mention, the long list of solid scientists of many fields who have studied GS, commented on its benefits and incorporated it into their work. When Science & Sanity first appeared, it was very favorably reviewed by mathematicians ET Bell and Bertrand Russell, and by anthropologist Bronislaw Malinoski, among many others. During the ensuing years, scientists from Buckminster Fuller to Abraham Maslow to Gregory Bateson have presented their views about GS as a part of the annual Alfred Korzybski Memorial Lecture series. A pseudo-science may con a luminary or two, but only a true science can sustain the admiration of leading thinking from such a broad range of sciences for so many years as GS has.

So where does such a vehemently negative viewpoint come from? In the 1952 book Fads and Fallacies in the Name of Science[p. 281], Martin Gardner, a philosopher, not a scientist, first describes the subject of GS as “controversial, borderline, which may or may not have considerable scientific merit”. However, in the succeeding pages, he goes on to attack not only GS itself, but adds ad hominem, attacks on Korzybski himself.
Several writers have made serious, and definitive, rebuttals to his work, notably Dr. Allen W. Read and Dr. Bruce I. Kodish. (see works cited). I only note here that Major’s criticism bears a great deal of resemblance to that of Gardner. Major complains of “contrived jargon and nomenclature” as “a hallmark of pseudo-science,” while Gardner claims that you can tell the difference between “science” and “pseudoscience” because the pseudoscientist “often has a tendency to write in a complex jargon, in many cases making use of terms and phrases he himself has coined” [Gardner, pp. 12-13]. And Major’s description of “jumble of half-digested, random readings” strongly echoes Gardner’s dismissal of Science & Sanity as a “poorly organized, repetitious, mish-mash” [Gardner, p.281].

The only thing that I would add, which I didn’t see in any of the previous rebuttals of Gardner, comes from Nora Miller, a current trustee of the Institute of General Semantics.

Every science must necessarily adopt terminology that others find “contrived.” How would the ornithologist differentiate between primaries, secondaries and scapular coverts, and how could the linguist discuss the concept embodied in the sentence “An actual implicature is any potential implicature that is not canceled by its context,” without “jargon”?

It’s only “contrived” to Major because he doesn’t know anything about it. He calls that a “hallmark of a pseudo-science,” but in fact, it is a hallmark of ALL science -- the development of precise, new terms to refine the distinctions necessary to discuss a topic heretofore unaddressed. Until there were “primaries and secondaries” we could only talk about wing feathers. Until there were “implicatures” we might never have noticed that certain statements imply facts not openly identified. [Miller, personal correspondence]

Since Gardner’s book has been very popular and is in its 31st printing, it seems likely that Major has taken his viewpoint from Gardner.

Read and Kodish have pretty well demonstrated the serious flaws in attempts by Gardner and others to prove GS to be a “pseudo-science.” Kodish also published a rebuttal to Max Black, another philosopher who derided GS [Kodish, “Contra Max Black:”]. In fact, Black’s 1949 essay is considered the prime source for all who later criticized GS in this way. Noted neurologist, Dr. Stuart Mayper, also refuted Black in an article in ETC, the journal of the Institute for General Semantics [Mayper].

**Question #3**

Was Heinlein inconsistent in his views on philosophy? Major states:

In fiction and fact alike Heinlein derided the concept of studying philosophy (see Expanded Universe p. 531, for example). Yet here Matt is studying the stuffs of philosophy. It might be how you package it.

Major appears to be criticizing Heinlein for being inconsistent in his attitude towards ‘philosophy’. There is nothing that says that an author has to be consistent in his fiction or in his personal beliefs versus those held by his characters, especially in a large corpus of works such as Heinlein’s, produced over many years. However, is he really being inconsistent? Do these subjects mentioned in the earlier part of the quote actually qualify as the “stuffs of philosophy”? These are epistemology, scientific methodology, semantics, structures of languages, patterns of ethics and morals, varieties of logics, motivational psychology, and so on.

We shall address ‘semantics’ later.

Epistemology, understanding how we know what we know, has since the beginning of Western Philosophy been pursued by numerous philosophers.
Plato was much more concerned to establish his views on matters of metaphysics and epistemology, trying to discover the ultimate constituents of reality and the grounds for our knowledge of them. [Kemerling, "Plato"]

The actual approaches to epistemology and concepts of epistemology, however, have varied considerably over the ages and it would perhaps be somewhat speculative to say which particular version of epistemology Heinlein was referring to, but let’s consider the following two quotes:

There are different kinds of interpretations of history and different schools of philosophy. All of them have contributed something to human progress, but none of them has been able to give the world a basic philosophy embracing the whole progress of science and establishing the life of man upon the abiding foundation of Fact [Korzybski, Manhood of Humanity (MOH) p. 28].

What are the facts? Again and again and again—what are the facts? Shun wishful thinking, ignore divine revelation, forget what "the stars foretell," avoid opinion, care not what the neighbors think, never mind the unguessable "verdict of history"—what are the facts, and to how many decimal places? You pilot always into an unknown future; facts are your single clue. Get the facts! [Heinlein Time Enough For Love (TEFL) p. 246].

True, this second quote comes in a work of fiction, but Heinlein also said something very similar in his Guest of Honor Speech at WorldCon in 1941 (Kondo pp. 213-214), which could easily represent the inspiration for the fictional statement.

Linking the two quotes together provides, I think, a key to understanding Heinlein’s viewpoint on philosophy. He evidently valued, as did Korzybski, those philosophers who grounded their philosophical thinking in facts, not simply in speculation. I will say more about this later.

Students of GS should immediately notice that Korzybski violates his own principle of 'non-allness' in this quote, but I would point out that this quote appears in Korzybski's first book, which was published 12 years before S&S, just at the beginning of his research into this subject.

In addition to plain 'facts', both Korzybski and Heinlein were convinced that mathematics played an extremely part in epistemology. This view appears innumerable times in S&S, too many to list and Heinlein said, again in fiction,

..everything of importance is founded on mathematics. [Heinlein, Starship Troopers, p.278]

Now let us consider the other 'stuffs of philosophy',

a) Scientific methodology: This is a 'philosophy' in its own right, but one far different from any of the 'philosophies' which preceded it and which was fundamental to Heinlein's thinking [Kondo p. 213].

b) 'Varieties of logic' and 'structures of languages' are closely related, in my view, so let us examine them together: Aristotle thought that 'logic' and 'language' were essentially one and the same.

Aristotle further supposed that this logical scheme accurately represents the true nature of reality. Thought, language, and reality are all isomorphic, so careful consideration of what we say can help us to understand the way things really are. Beginning with simple descriptions of particular things, we can eventually assemble our information in order to achieve a comprehensive view of the world. [Kemerling, "Aristotle"]
However, the phrase 'structure[s] of language' couldn't apply in Aristotle's case because to him all the structure that mattered was structure of his language, namely Greek. It has only been in modern times that 'structures of languages' has become important, as in the work of mathematical philosophers including Wittgenstein, Quine, Tarski, and others, who deal with 'formal languages' of logic and mathematics. A different study of the 'structure of languages' was properly a subject of linguistics, not philosophy, and in linguistics it refers primarily to the syntax, morphology and phonology of natural languages [Bloomfield].

The distinction between 'logic' and 'language' has traditionally been minimal. However, starting with mathematical philosophers like those mentioned above [Kemerling], this split began to widen with the introduction of multi-valued logics as extensions of two-valued 'true-false' logic. Infinite valued logics and 'structure of language' came to mean the 'structure of the formal logics', including today's programming languages for computers. Multi-valued logics play a significant part in Korzybski's work. Heinlein referred to them in a number of places. So one can conclude that 'varieties of logics' qualify as 'stuff of philosophy' at least in modern mathematical philosophy. Furthermore, this is precisely the kind of philosophy that both Korzybski and Heinlein considered worthy subjects for study. 'Structure of language' is probably one of the most important single concepts in GS, as Korzybski considered that the only possible knowledge, i.e. link between our verbal world and reality, depended on how well our languages were structured to match that reality [Korzybski S&S, p. 699]. This was reflected in Heinlein's first 'juvenile', Rocket Ship Galileo [Heinlein p. 25].

c) Patterns of ethics and morals: Part of philosophy from the earliest days. Like 'epistemology', treated differently by almost every different philosopher, but most often based on the 'will of God or gods'. However, it appears that Heinlein may have had something much different in mind. Consider:

This school is based on the idea that a man who can think correctly will automatically behave morally or what we call 'morally.' . . ." Space Cadet, p. 72

Examined in the light of GS, this quote refers to a principle that Korzybski outlined in his first book [Korzybski MOH p. xlii]. Consider further:

"But the instinct to survive," he had gone on, "can be cultivated into motivations more subtle and much more complex than the blind, brute urge of the individual to stay alive. Young lady, what you miscalled your 'moral instinct' was the instilling in you by your elders of the truth that survival can have stronger imperatives than that of your own personal survival. Survival of your family, for example. Of your children, when you have them. Of your nation, if you struggle that high up the scale. And so on up. A scientifically verifiable theory of morals must be rooted in the individual's instinct to survive -- and nowhere else! -- and must correctly describe the hierarchy of survival, note the motivations at each level, and resolve all conflicts." [Heinlein Starship Troopers p. 118]

Again, looking at this from a GS perspective, we see a hypothetical fictional application of Korzybski's 'consciousness of abstracting' and the different levels of abstraction [Stockdale "Korzybski's Structural Differential and Hayakawa's Abstraction Ladder"] and their application to moral behavior.

d) Motivational psychology: This is a modern phenomenon and I can't by any stretch consider it a part of philosophy.

So, I conclude from the above that Heinlein either didn't consider these things the 'stuffs of philosophy' at all or that he considered them only in the light of modern mathematical philosophy.

Question #4

Was Heinlein's interest in GS justified? To answer this question let us examine just how he understood GS.
Underlying Gardner's and Major's thinking is the assumption that GS is a 'philosophy'. It was from this viewpoint that Gardner attacked GS even though he spoke of it in 'pseudo-science' terms.

Allen Walker Read [Read], speaking about the origins of Gardner's antipathy to GS, said:

Among the budding philosophers on the University of Chicago campus was a graduate student named Martin Gardner, whom I knew and respected, but who picked up a contemptuous attitude from the [philosophy] department there [italics mine]. He later, in 1951, pilloried general semantics in his influential book, *Fads and Fallacies in the Name of Science*. This was not completely honest of him, since he admitted that Korzybski’s work was “controversial, borderline,” and that it “may or may not have considerable merit.” I conferred with Gardner as he was writing the book and found that he was unduly influenced by a published report from Los Angeles that a group of Korzybski’s followers were founding a “General Semantics Church” and were about to go underground to preserve the purity of the faith from the impending destruction of the world. It turned out that within a few weeks this group lost its interest in general semantics and embraced scientology. But in this land of free speech, Korzybski could not prevent a few ‘loonies’, as I regard them, from proclaiming an alleged association with him.

Korzybski did, indeed, derive a number of features in GS from the works of certain philosophers. Prominent among these were Whitehead, Russell and Wittgenstein, and he considered his work to be an extension of Aristotle's thinking, not a refutation [Korzybski S&S p. 97]. From Whitehead and Russell, he used and extended the Theory of Types [Collected Papers 1st Conference p. 33]. Some of his notable quotes are paraphrases of Wittgenstein, such as “What can be shown cannot be said,” which has its Korzybskian counterpart in “The objective level is not words, and cannot be reached by words alone. We must point our finger and be silent, or we shall never reach this level.” [Korzybski S&S p. 399]. The 'all' in "The map doesn't cover all of the territory", the second of Korzybski's most quoted statements about GS, is directly attributable to Russell and Whitehead. [Korzybski S&S, p. 737].

It is most important to note that Korzybski did not consider GS to be a *philosophy*, but instead considered it a *scientific theory and an engineering discipline*, which incorporated a number of applicable techniques for improving the *semantic reactions* [Korzybski S&S p. lxii] of an individual with a proper understanding of the structures of reality [Korzybski OLC p. 9]. Philosophy only comes into the story because his *theory* of GS with its *predictability* [Korzybski OLC 8] is designed to counteract what he considered to be the influence of Aristotle’s philosophy on pre-scientific culture, which to this day has a serious impact on the way in which we think. [Remember the quote from *Space Cadet* above advising us to ‘learn how to think’].

Implicit in the above formulation is the notion that 'language' itself, our 'map' of reality, influences the way we think about that reality. The linguist, Benjamin L. Whorf, studying Native American languages contemporaneously with Korzybski, but unknown to him at the time he was researching for S&S, came to the same conclusions [Whorf]. A link between Korzybski and Whorf apparently developed some time prior to 1941, as Whorf is listed as speaking at the Second American Congress on General Semantics that year [Collected Papers 2nd p. 7].

In supporting this thesis that GS is a 'science' and not a 'philosophy', I offer the following quote from Korzybski, (highly reminiscent of Heinlein's quote from *Expanded Universe*).

I say frankly that if you find any 'cosmic legislation' in my work dismiss the whole thing. You will not find any there. I am talking about facts, facts, facts, and facts alone! You can always verify these facts. That is the point. But the moment we agree on a fact stick to it. In mathematical physics when we discover something, say an error in a formula or a disregarded
factor in an equation, once discovered it is then corrected, and the old error is abandoned for
good. That is mathematical science. [Korzybski OCL p. 19]

Empirical data validating at least parts of the theory of GS were presented in the First and Second American
Congresses on General Semantics [Collected Papers], held respectively in 1935 and 1941. Especially significant
were studies presented by doctors of medicine, psychologists, and psychiatrists relating their successful work in
implementing the practice of GS in treating their mentally ill patients, and by educators who had used the
techniques of GS to educate and motivate their students.

Of special importance is the following:

"General semantics, as a modern scientific method, offers techniques which are of extreme value
both in the prevention and cure of such [pathological] reactive patterns. In my experience with
over seven thousand cases in the European Theater of Operations, these basic principles were
daily employed as methods of group psychotherapy and as methods of psychiatric prevention. It
is obvious that the earlier the case is treated the better the prognosis, and consequently hundreds
of battalion-aid surgeons were trained in principles of general semantics. These principles were
applied (as individual therapies and as group therapies) at every treatment level from the forward
area to the rear-most echelon, in frontline 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."

This is a quotation from the Preface to the 3rd Edition of S&S, p.xxxi-xxxii, about the work of Dr. Douglas M.
Kelley, formerly Marine Corps Lt. Colonel, Chief Consultant in Clinical Psychology and Assistant Consultant in
Psychiatry to the European Theater of Operations. Kelley also served as Chief Psychiatrist in charge of the
prisoners at Nuremberg, and wrote 22 Cells in Nuremberg (Greenberg Press, New York, 1947).

In light of the preceding paragraphs, I am confident in answering my fourth question, "Was Heinlein's
interest in GS justified?" in the affirmative.

Regardless of whether or not Heinlein correctly understood all of the theory of GS, as I mentioned above, he had
a great deal of respect for it and its founder.

Having references in fiction certainly doesn't prove this, but he certainly didn’t consider GS a ‘pseudo-science’.
Read his comments on Korzybski in his 1941 WorldCon Guest of Honor Speech [Kondo p.221] where he said of
Korzybski, [note, the phrase 'the same methods' refers to the scientific methodology].

..he's at least a great a man as Einstein, at least, because his field is broader. The same kind of
work that Einstein did, the same kind of work using the same methods, but in a much broader
field, much closer to human relationships.

Heinlein became a member of the Institute of General Semantics and attended, along with his second wife Leslyn,
at least two seminars in GS in 1939 and 1940 [Gladstone] and, at one point, wrote in his correspondence,
published in Grumbles From The Grave, that he thought seriously on writing a book on General Semantics
[Heinlein p. 12]. (He mentions in this reference having attended five seminars. Three of these were probably local
seminars not involving Korzybski himself) [Stockdale, private correspondence].

More information about Heinlein and his relation to GS can be found in Bill Patterson's forthcoming biography,

Heinlein was not alone in valuing GS. Among many prominent scientists and other professionals endorsed
Korzybski's works:
The functional or relational conception of matter, mind and, finally, of human culture, seems to be gradually crystallising from all attempts at scientific synthesis. Count Korzybski's work contributes to these efforts in no mean measure. I am perhaps biased as a countryman, but to me this Polish attempt at synthesis seems to rank as one of the most important. I am of course unable to express a competent judgment on its mathematical, scientific-in the narrow sense of the word-and philosophical side. As regards however semantics and the anthropological issues discussed by Count Korzybski, I am in complete agreement with his approach. I should like to add that the approach is so new and fundamental that it will take some time for us to become completely familiar with it. For the present I should like to say that I have not yet mastered all the intricacies of Count Korzybski's system, so my appreciation must naturally be regarded as preliminary.

E. T. BELL, Professor of Mathematics, California Institute of Technology, (who wrote science fiction under the name of John Taine).

I think it is obvious that Korzybski is working in a direction of the highest present importance for science and life. This is the more so as some sort of corrective seems to be needed for the well-meaning but ill-considered popular announcements by certain leading scientific men. A little careful consideration of the recognized fundamentals of scientific and other thinking, such as Korzybski's book aims to set forth clearly, would prevent such really futile pronouncements by prophets of science and make the public more chary in swallowing every transient guess. Korzybski, among personal contributions of his own concerning the law of identity, has succeeded incidentally in making current the fundamental revolution in mathematical and other basic thinking, which goes under the name of a non-aristotelian logic, and bringing to educated people an account of the most significant advance in abstract thought of the past millennium. The profound modifications of rational, mathematical thinking which began about thirty years ago with the work of Brouwer, have, so far as I am aware, escaped the notice of those who undertake to report science and mathematics to the general public. The reader of Korzybski's book will gain an outlook on these new fields as well as an insight into the author's contributions to the problem of identity. Brouwer challenged one of the laws of Aristotle, Korzybski challenges another.

BERTRAND RUSSELL, Noted Philosopher.

Your work is impressive and your erudition extraordinary, Have not had time for thorough reading but think well of parts read. Undoubtedly your theories demand serious consideration.

The above list represents just three of the many of those whose comments were written in response to the first edition of *Science & Sanity* and included in the second edition [Korzybski S&S pp. 783-789]. Most of these names will not be familiar to a modern audience outside, perhaps, of Bertrand Russell, (is it coincidence that Heinlein gave his fictional "greatest mathematical psychologist of our time" [Heinlein *Have Space Suit, Will Travel*, p. 271] the name of Russell?), although the science fiction community will likely recognize the pseudonymous John Taine (mathematician Eric Temple Bell). These endorsements came from people prominent in the fields of Anthropology, Biology, Botany, Education, Entomology, Genetics, Ophthalmology, Mathematics, Mathematical Foundations and Logic, Neurology, Physics, Physiology, Psychiatry and Semantics during the time Korzybski was writing and publishing his works.

The following is a list of some of the distinguished speakers in the annual Alfred Korzybski Memorial Lecture series starting in 1952 which continues to the present day under the auspices of The Institute of General
Semantics [http://time-binding.org]. These speakers, I am confident, considered GS to be a subject of serious value.

A number of these will be more recognizable by a modern audience, notably, Buckminster Fuller, inventor of the geodesic dome, James A. Van Allen discoverer of the ‘Van Allen Radiation Belt’, Jacob Bronowski who became a cultural icon in the 1970's for his *Ascent of Man* book and television series, sf writer Ben Bova, and entertainer and writer Steve Allen. People involved with computer fields will most likely recognize Lotfi Zadeh, the inventor of 'Fuzzy Logic,' an extension of the multi-value logic of Lukasiewicz which today is being applied in a number of engineering fields.


1959 SYMPOSIUM ON THE THEME: "EXTENDING THE PARABOLA". WILLIAM J. FRY, Research Professor of Physics and Director of Biophysical Research Laboratory, University of Illinois. JAMES A. VAN ALLEN, Professor and Head, Department of Physics, State University of Iowa. Revealed the existence of the "Van Allen Belts," two zones of relatively intense radioactivity surrounding the earth. CHARLES M. POMERAT, Professor of Cytology and Director of the Tissue Culture Laboratory, University of Texas, Galveston. Author of many scientific papers, contribution especially to biology, immunology, and biochemistry. Panel discussion, including the above speakers, with Wendell Johnson and Russell Meyers, MD.

1967 JACOB BRONOWSKI, Renowned lecturer and author of *Science and Human Values*, *The Identity of Man*, etc., also drama and books on literature, and on intellectual history.

1969 LANCELOT LAW WHYTE, World-renowned pioneering scientist-philosopher, lecturer and author of *The Next Development of Man*, *The Unconscious Before Freud*, *The Unitary Principle in Physics and Biology*, and many others.

1970 GREGORY BATESON, Associate Director for Research, Oceanic Institute, Waimanalo, Hawaii, author of many publications in the fields of anthropology, mental health, psychiatry, cybernetics, communication, etc.

1977 BEN BOVA, Author and Editor of *Analog Science Fiction - Science Fact Magazine*.

1992 STEVE ALLEN, author, entertainer, song-writer, etc.

1994 LOTFI A. ZADEH, Professor Emeritus and Director of the Berkeley Initiative in Soft Computing. Known for his contributions to machine intelligence, particularly "Fuzzy Logic."

In summary, I will note that Major's opinions don't fare very well compared to those of a number of scientific luminaries who have studied GS, or when considered in light of the results of experiments derived from the theory of General Semantics.

David Wright Sr.
June 17, 2006
Chatsworth, GA

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