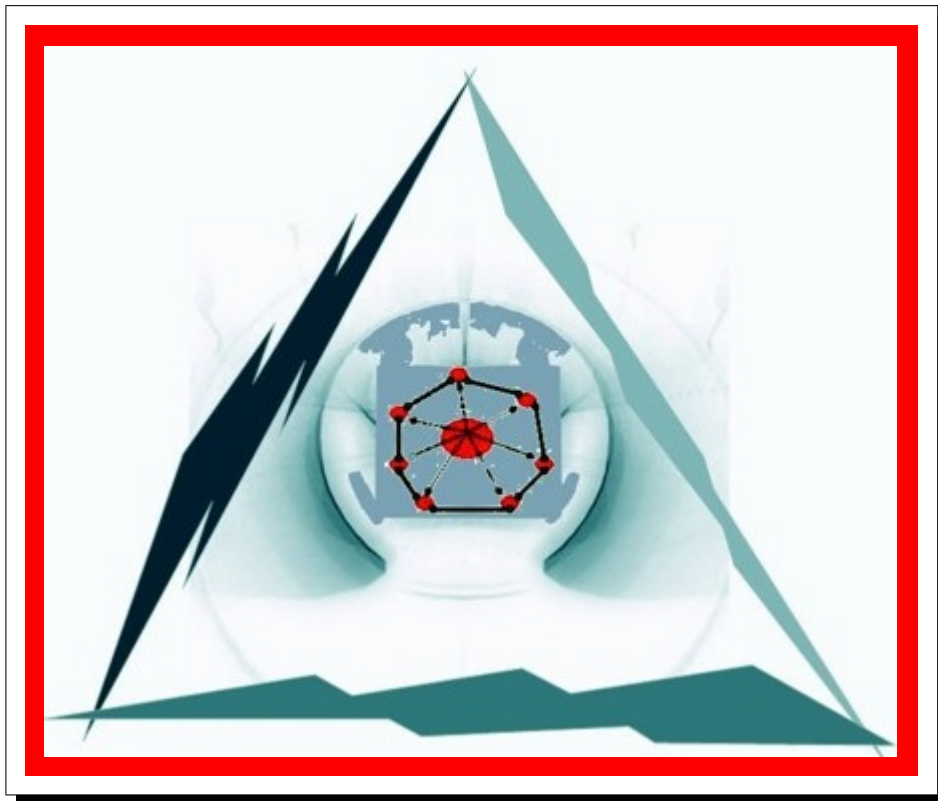


LANGUAGE in Capital Letters Unity in Nature

Eldon G. Lytle

May 6, 2009



K, L, M

Natural man, whether simpleton or scientist, knows no more of the linguistic forces that bear upon him than the savage knows of gravitational forces.
--Benjamin Whorf

$$\int_{\mathcal{M}x}^{\mathcal{K}x} @Lng: \left\{ \{ \forall \Lambda \} \uparrow^{[\approx]} \{X\} \right\} \leftrightarrow \underline{\underline{M}} \left\{ \right\}^{\ddagger}$$

SEE OR CLICK SECTION 20.5 FOR AN EXPLANATION OF THE FIGURE

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Figure 1: The Author in Pensive Mood

"A change in language can transform our appreciation of the Cosmos."



Figure 2: Benjamin Whorf

THIS BOOK IS DEDICATED
TO
THE MEMORY OF BENJAMIN WHORF

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AUTHOR'S PREFACE

One wonders, indeed, what makes the notion of 'linguistic relativity' so fascinating even to the nonspecialist. Perhaps it is the suggestion that all one's life one has been tricked, all unaware, by the structure of language into a certain way of perceiving reality, with the implication that awareness of this trickery will enable one to see the world with fresh insight.

– John B. Carroll <Whorf, 1998>

Purpose

MY PURPOSE IN WRITING THIS BOOK is to share a unique perspective on language which I have found to be invigorating and eminently helpful in understanding the manner in which we, as multi-dimensional beings interact with the world in which we live. Although my message is intended primarily for the scientist and philosopher, I invite inquiring minds of all persuasions and paradigms to read and contemplate what I have to say, for the substance of it is pertinent to everyone.

Benjamin Whorf

Linguistic Relativity

IF THE IMPACT OF IDEAS and their potential for transforming society is the gauge of mental greatness, then the greatest mind of the twentieth century may well have belonged to a man you never heard of. His name was Benjamin Lee Whorf. Benjamin was an inspector for Hartford Fire Insurance Company and 'amateur linguist,' or so his detractors would have you believe.

In reality, he was an intellectual giant whose insights elucidated the nature and role of language in the cosmic order like no other before him or since. Whorf did not write an opus trumpeting his findings to the world but, rather, a series of expository articles setting forth his views on language, their implications for mankind generally and science specifically.

Whorf's assessment of how things stood did not gratify the professionals of his day, for what he had to say was brutal in its frankness:

"Natural man," he wrote, "whether simpleton or scientist, knows no more of the linguistic forces that bear upon him than the savage knows of gravitational forces." <Whorf, 1998, pg. 251>

Why the pessimism? It turns out that, at a time when the world at large took comfort in the assumption that observation and perception from person to person were unified by standard biological equipment, Whorf had detected a complicating factor, namely, *linguistic relativity*:

From this fact proceeds what I have called the "linguistic relativity principle," which means, in informal terms, that users of markedly different grammars are pointed by their grammars toward different types of observations and different evaluations of externally similar acts of observation, and hence are not equivalent as observers but must arrive at somewhat different views of the world. <Whorf, 1998, pg. 221>

We are thus introduced to a new principle of relativity, which holds that all observers are not led by the same physical evidence to the same picture of the universe, unless their linguistic backgrounds are similar, or can in some way be calibrated. <Whorf, 1998, pg. v>

First it had been *temporal* relativity (Einstein), and now, given that Whorf was correct, *linguistic* relativity. According to the first, observations of time are not constant but relative to the space-time frame from whence they are made. According to the latter, observation, comprehension, perception, thinking, *and* behavior are all *relative* to the personalized language-thought frame of the observer. The formula involved was straightforward and unequivocal:

Whorf 1 (Linguistic Relativity). *LANGUAGE* \iff *THOUGHT*

For those who understood it, Whorf's relativity was enough to send chills down the spine! The implications were staggering — that *universal essence of reason uncontaminated by anything at all* (a notional relic of the ancient Greeks steeped in some 2500 years of tradition) now trembled on the brink of extinction.

TAKEN DOWN A STEP — from the level of languages and dialects to congregations and individuals — it meant that one could no longer assume that what a text says to one it says to all or, conversely, that the message of any author may be received essentially as intended by simply reading the text. It meant, in effect, that each mind, at least in part, was a world unto itself, a world differing in person-specific ways from any other.

For canon-centered religion, it meant that the 'Holy Word of God,' speaking from sacred writ, was a source of division and strife rather than unity among believers so long as they were not of 'one heart and one mind.' So far as the secular world was concerned, it meant that:

...science's long and heroic effort to be strictly factual [had] at last brought it into entanglement with the unsuspected facts of the linguistic order. These facts the older classical science had never admitted, confronted, or understood as facts. <Whorf, 1998, pg. xx>

In a word, the supposed *objectivity* of science was a myth. Whorf's *linguistic* relativity threatened establishment science for another reason as well, for what behaviorist psychology had declared off-limits, Whorf had now made the center of attention and investigation — the mind of man in its inner workings.

Could Whorf possibly be right? Students were captivated by the idea and signed up for courses in linguistics while, for the first time ever, ordinary Joe became aware of 'language.'¹ A paradigm shift loomed on the horizon. Tragically, however, at the age of forty-four, well before his work could reach fruition, Benjamin died.

Posthumous Developments

FOLLOWING WHORF'S DEATH, *linguistic relativity* became the subject of an ongoing polemic. While not a few were enthusiastic adherents of his position, equally as many were not. The truth be told, few on either side had the intellectual breadth and depth to 'get into Whorf's head' and understand the totality of his message. History witnesses that when a writing perceived to be strategic transcends the common intellect, exegetes rise to the occasion, and, true to pattern, a Talmudic literature, as it were, evolved around Whorf's writings. Most of it, regrettably, was either misleading or wide of the mark in one respect or another. Also true to pattern, with the passing of

¹"Undoubtedly Whorf had in mind to bring linguistics before the general public in a manner that had scarcely ever been attempted; in fact, he may be credited with being the first popularizer of modern linguistic science..." <Introduction Whorf, 1998, pg. 18>

time, disciples and opponents alike came to engage the literature rather than the original, finding it far less demanding to comment on commentary than to deal with Whorf himself.

Meanwhile, the *Chomskian revolution* (4.1.1), a behaviorist spin-off with a fixation on ‘syntax’ and its fanciful ‘autonomy’ vis-à-vis phonology, semantics, etc., was sweeping linguistics in America helplessly before it. Sensing in Whorf a threat to their craft, frontal attacks by Chomsky’s warriors have had as their objective the relegation of Whorf to the dumpster of ‘conventional absurdities.’ (See 15.2.3) Still, in death, unable to confront and confound his detractors in the flesh, the ghost of the man exacts retribution, as it were, by haunting classroom and laboratory. In a word, *linguistic relativity*, like other timeless truths, has but to await the advent of a brighter (and less perverse) paradigm.

The Essence of Whorf

SO WHAT IS ONE TO MAKE OF IT ALL? This much is certain - Benjamin Whorf was the David Bohm of linguistics in his day. He was indefatigable in his quest for the unity of ‘Language, Mind, and Reality,’ <Whorf’s collected works bear this title, as does his most famous article [Whorf, 1998](#)> despite the artificial boundaries and autonomies erected by contemporaries. What was the essence of his perspective and rationale? Simply this:

All that I have to say on the subject that may be new is of the PREMONITION IN LANGUAGE of the unknown, vaster world --- that world of which the physical is but a surface or skin, and yet which we ARE IN, and BELONG TO ... Speech is the best show man puts on ... But we suspect the watching Gods perceive that the order in which his amazing set of tricks builds up to a great climax has been stolen --- from the Universe! <[Whorf, 1998](#), pg. 248-249>

WHAT A WILD IDEA! That the structure of language should somehow bear an affinity with order in the material world!

Its apparent novelty, however, was an illusion begotten of Western parochialism, for the notion itself, as clearly acknowledged by Whorf himself, was ancient news in other climes. Indeed, the quest for unity with nature and mind over matter through language stemmed from time immemorial, corrupted perhaps by the ABRACADABRAS and ALACAZAMS of Merlins and genies, but preserved and revered in the cultivation practices of Eastern religions. One simply has to wonder: Had Whorf lived out his full term, what might he have put forth by way of a formal model of language to engage such unorthodox matters? The answer to this question, of course, is precisely what this book attempts to provide. Under the present cover, I pursue to their logical conclusion Whorf’s central theses, chief among them being relativity and the premise that the linguistic potential present in each of us is the key to exposing the mysteries of the cosmos.

LANGUAGE in Capital Letters

Setting Hearsay Aside

IN PURSUING MY QUEST for the real Whorf, confronted by a vortex of circularity and confusion in the literature, it eventually became necessary to set hearsay aside and concentrate on what he himself had written. Only then, as noted above, did it become clear that integral to his worldview was a premise of even wider import, which, reduced to its essence, is simply that:

- Nature at large as we observe it is patterned by structural primitives which pervade the cosmos. *Rational mind*, being part and parcel of the same, traffics in precisely the same universals, and, when properly disposed, is fully capable of organizing and administering them directly.

Dressed in semi-formal attire, the principle in question may be written as follows:

Whorf 2 (Mind Over Matter). $THOUGHT \iff REALITY$

So far as I could tell, the exegesis had never gotten this far. Having debated and re-debated the [LANGUAGE \iff THOUGHT] proposition (*Whorf 1*) — in particular, the question of whether and to what extent different languages translated into *distinctively different* systems of thought — and, being unable to come to terms with even that, the polemicists had faltered, neglecting to stride forward with Whorf in that final, crucial step to his full conceptual model (given formulaically in **Whorf 3** and depicted graphically in Figure 1).

Whorf 3 (Mind Over All). $REALITY \iff THOUGHT \iff VERBAL\ LANGUAGE$

Despite the fact that a three-way relationship was clearly the substance and emphasis of his famous exposition on ‘Language, Thought, *and* Reality,’ the [THOUGHT \iff REALITY] aspect of the formulation so boldly set forth in his writing simply hadn’t registered with his readers.

Here, then, was a conceptual blind-spot which had prevented a full appraisal of Whorf’s perspective, one which, it turns out, was fully in accord with the more recent assessment of that ‘the universe is more like a giant thought than a giant machine.’²

Relativity Exemplified

WHY HAD $REALITY \iff THOUGHT$ fallen through the cracks? Precisely because of *linguistic relativity* — the perfect irony. The understanding of the commentators was relative to English, and English lacked crucial contrasts of meaning implicit in Whorf’s formulation. In conventional English, the term ‘language’ has reference to external symbolism, i.e. to the words we say and write. Whorf, however, redefined ‘language’ to encompass what he characterized as the *linguistic order*, a concept which circumscribed all forms of symbolism, including logic, reference, *and* the patterned relations of the material domain. Therefore, ‘language,’ in Whorf’s scheme of things, was more than an instrumentality of tongue and pen. On the one hand it was the medium which encapsulated and mapped the structures of mind into speech and writing (THOUGHT \iff SPEECH) and, on the other, it was a medium fully capable, given the appropriate mindset, of mapping structure directly from mind to reality (THOUGHT \iff REALITY).

The Full Model

LEST THE FULL IMPORT of Whorf’s conceptual model again escape notice, we present it once more in paraphrase and invite the reader to contemplate it carefully:

- **If speech and writing are structured by ‘language,’ he tells us, then, by the same token, the material world at large is structured and managed by ‘language.’**

We therefore have a disposition of assets such that MIND LANGUAGE (aka MIND) functions as the center from which both structured speech and structured reality spring into being:

Figure 3: Whorf’s Conceptual Model of the ‘Linguistic Order’



Language, as redefined by Whorf (his LINGUISTIC ORDER), circumscribes in its diverse manifestations both the visible and invisible operation of structure in the material world as well as in thinking and communication.

² Michael Talbot <Talbot, 1993, pg. 82> quoting Jeans <1938>.

TO EMPHASIZE the ubiquity of *language* in and through all, we retain the term itself but raise it to upper case -- hence, *LANGUAGE* in *Capital Letters* (*LANGUAGE* for short).

The bi-directional arrows between components signify the two-way flow of linguistic traffic to and from MIND vis-à-vis physical reality as well as to and from MIND vis-à-vis the domain of public expression.

In subsequent chapters, as we characterize the flow of linguistic forms associated with the arrows in the diagram, the outline of *Whorf's Conceptual Model* will morph step-wise into the META-Model denoted by *LANGUAGE* in *Capital Letters*. So far as formal aspects of the book are concerned:

- Chapters 10 and 12 establish the ‘presence NATURE in MIND’ and the ‘presence of MIND’ in NATURE (20.1.1).
- Chapters 16 and 17 justify and present a synopsis of *MINDMATH*, the system of notation developed by the author for the *LANGUAGE* model.
- Appendix A (19) summarizes the definitional base of the model.
- Appendix B (20) summarizes its axiomatic base.

Formal Synopsis of the Model

How many forces are there? We don't know. No one would have thought up magnetism and electricity if their effects had never been detected; they are not a consequence of Newton's laws. So it's worth keeping an open mind regarding the existence of as-yet-undiscovered forces.

– Brian Silver

VIEWED FROM A PURELY FORMAL PERSPECTIVE,³ the operation of *LANGUAGE* entails the interaction of one PRIMAL FORCE and two PRIMAL FACTORS, namely:

1. The \mathcal{K} FORCE – The KONSCIENT⁴
2. The \mathcal{L} FACTOR – The LINGUISTIC ORDER
3. The \mathcal{M} FACTOR – The MATERIAL DOMAIN

Therefore, analogous to the two-term set-theoretical affirmation

$$x \in X \text{ ‘}x \text{ is an element of } X\text{’}$$

given $\mathcal{K}x$, $\mathcal{L}x$ and $\mathcal{M}x$ as instances of \mathcal{K} , \mathcal{L} , and \mathcal{M} in a *LANGUAGE* event, we have the three-term relation

$$((\mathcal{L}x \times \mathcal{K}x) \uparrow \mathcal{M}x) \text{ (‘}\mathcal{L}x \text{ is a script of } \mathcal{K}x \text{ in } \mathcal{M}x\text{’)}$$

By the same token, while calculus establishes the linkage between integrals and derivatives

$$\int_a^b f(x)dx = F(b) - F(a)$$

LANGUAGE schematizes the linkage between MIND, LANGUAGE, and REALITY during the creation and maintenance of *mental models* ($x\underline{\mathcal{M}}$):

³Formal detail is developed step-wise beginning in Chapter 10.

⁴Otherwise referred to as THE PRINCIPLE OF INTELLIGENCE. See 12.12.3.2.

$$\int_{\mathcal{M}x}^{\mathcal{K}x} @Lng: \left\{ \left\{ \forall \Lambda \right\} \left\{ \overset{[x]}{X} \right\} \leftrightarrow \left\{ \underline{M} \right\} \right\}^{\ddagger}$$

The point is that *LANGUAGE* theory engenders a formalism uniquely its own or, in other words, ‘has its own math’ (8.3).⁵ More importantly, granted the correctness of the author’s argument that the notation in question is a plausible candidate for *META-Language* (Chapter 16), circumscribing in its sweep all other forms of language, then its fundamental equations capture the highest order of ‘governing dynamics.’⁶ Meanwhile, let us examine \mathcal{K} , \mathcal{L} and \mathcal{M} more closely.

The Konscient

THE TERM *konscient* (*kon-see-ent*) is a morpho-semantic iteration intended to suggest ‘an entity that knows (-ken-) that it knows (-sc-).’ The role attributed to the *konscient* stems from the observation that structured matter does not stand forth independently in, of, and for itself but, rather, exists in a subordinate capacity vis-à-vis *aktive* agencies in great variety which are separately *primal* and exercise dominion over matter by means of *language* (in the *Whorfian sense*). While the properties of matter are weight, shape, size, color, etc., the *konscient* evinces self-awareness, intention, intelligence, kreativty and, depending upon *order* (17.7) — *conscience*.

IMPORTANT NOTE: We will henceforth refer to the collective manifestation of *konscients* as *KONSCIENCE* (*kon-see-ence*) — not to be confused with *conscience* in the conventional sense.

Symbolism

The PRINCIPLE OF INTELLIGENCE associated with \mathcal{K} onscience is denoted by the symbol ‘ Υ ,’ which will be seen in formulas (12.12.3.4) representing key *aktivities* and/or gradations (*orders* [17.7]) of \mathcal{K} onscience as it wields \mathcal{L} in \mathcal{M} .

JUSTIFICATION for incorporating the *konscient* as a prime is provided by the fact that all attempts to ‘define’ or explain away what it denotes in terms of other phenomena have proven futile. In the author’s estimation, the reason that something so obviously *primal* was not acknowledged and dealt with as such long ago lies not in ‘reason’ per se but in ‘religio-phobia’ and its political effluvia. We speak of the virtually *frantic* determination of the scientific community at large to distance itself from issues having religious overtones. However, given the recent momentum to bring about a reconciliation of former epistemological adversaries (see Chapter 1.6), we feel justified in breaking with convention.

THE KONSCIENT FORCE is therefore advanced, in effect, as THE PRIME par excellence -- the ‘PRIME of Primes.’ Correspondingly, we incorporate *KONSCIENCE* into our model in this foundational capacity and, as the reader may well have observed -- owing to the individual primacy of KONSCIENT AGENCY --- build RELATIVITY into the model from the ground up.

⁵The circularity of endeavoring to describe natural language in a general way with forms of mathematics or other notation systems designed with specific domains in mind is discussed in Chapter 16.3.4.1.

⁶‘Governing dynamics’ is an expression associated with the struggles of US mathematician John Nash in his quest for *equivalence* in non-cooperative (conflict) scenarios. The structural management cycles described informally in 2.3 and formalized in 17.11 contend for this distinction.

Clarification

Having intruded upon *forbidden ground*, as it were, we feel it necessary to offer the following as further clarification:

- The ‘konscient’ as herein identified in connection with *LANGUAGE* is NOT equivalent to what some dualist belief-systems refer to as the ‘spirit’ or ‘soul,’ nor is it a proposal for a ‘homunculus’ or anything of the kind. Nor do we hazard to draw parallels with such philosophical constructs as Heidegger’s *Dasein* (see *References* below), nor with such time-worn concepts as ‘vitalism’, ‘entelechy’, etc.

- *LANGUAGE* portrays *konscience* strictly as a formal, *ontological*⁷ PRIME which \Leftarrow holds sway in the realm of scripted (structured) matter generally.

- By virtue of its primacy, \mathcal{K} has the formal property of being neither definable nor explicable, except in relation to its companion primes (\mathcal{L} and \mathcal{M}) and their joint manifestations as a system. Its success or failure, therefore, becomes purely a function of the utility and explanatory power which it brings to the resulting *system*.

The author emphasizes that in adopting this perspective, we depart from the long-standing dichotomy between ‘monist’ and ‘dualist’ traditions by erecting the *LANGUAGE* model upon a TRIAD of meta-physical primes.

Konscientiously Speaking

Theoretically, every self-aware, intelligent, designing, life-form is such by virtue of *konscience* of one kind or another. In discussions of the model and its illustrations, MIND identifies the seat of *konscience* vis-à-vis other components. MIND in this exclusive context, as illustrated in Figure 3, is the *laboratory* where \mathcal{K} -Forces ‘encode’ and ‘decode’ their scripts and is also regarded in the abstract as the ultimate repository for *knowledge* (see 1.2.10). As to the disposition of *konscience* vis-à-vis the space occupied by its material operation, we join forces with Whorf and Sheldrake<Sheldrake, 1995> in positing a hyper-spatial, background dimension.⁸

BE ADVISED that in order to emphasize the primal role of \mathcal{K} ONSCIENCE with its attendant \mathcal{K} -Forces in the *LANGUAGE* model and their integral role in the operation of \mathcal{L} in \mathcal{M} (see *Formal Synopsis* above), we intermittently make use of an assortment of terms ‘inflected’ with ‘k’ which normally employ ‘c.’ Thus, for example, in some contexts, ‘k’-initial (or even ‘k’-medial) variants such as *kreature*, *fokus/fokal*, *cykle*, *kode*, *ko-efficient*, *kommand*, *ko-option*, *kognition*, *kontem-plate*, etc. will be used --- sometimes without supplementary explanation or ‘komment.’ This morphological ‘slight-of-hand’ is intended to have the psycho-linguistic effect of en \underline{k} oding the concept of *konscience* as a *visible* --- though not *audible* --- component of words which utilize it.

⁷In the sense of relating to *essence*, i.e. the source and nature, of *being*. See also 1.2.10 and 1.2.11.

⁸For additional comment, see 1.4.3 and 7.7.

THE AUTHOR has a second motivation for 'kreative' spelling of this ilk, namely, to remind the reader of LINGUISTIC RELATIVITY and the **warning** of the author regarding it. If such spellings have the effect of forestalling inadvertent slippage into readings which 'uniplex' the author (14.6.2), then it has served its purpose. The author suggests that the reader pause for a brief moment of reflection to consider how the infusion of \mathcal{K} into such terms impacts one's conceptualization of them. This exercise will hopefully moderate the annoyance which may otherwise occur.

Meta-physical Implications

While it is a received truth that element is subject to change of form but ontologically *eternal*, our characterization of \mathcal{K} , \mathcal{L} , and \mathcal{M} embodies the concept that \mathcal{M} (element) supervenes in its eternity upon that of \mathcal{K} onscience and \mathcal{L} anguage — all three being subject to change but none annihilable.

Scripts and Scripting

THE TERM 'SCRIPT' DENOTES ANY CONSTRUCT of the *linguistic order* in the LANGUAGE system. Inflections of the term are used to characterize different modes of *scripting*, of which there are three fundamental modes, these being, (1) PRESCRIPTION, (2) INSCRIPTION, and (3) DESCRIPTION. Informal definitions for these terms (see also 1.2.10) are as follows:

- *Prescriptions* are the blueprints, recipes, patterns, models⁹... in short, the generic formulas or schemata which prescribe how material resources are to be scripted (organized) or actions performed.
- *Inscriptions* are the incarnations, the instantiations or *embodiments*, the realizations of prescription. Inscription is to prescription as the cake is to its recipe.
- *Descriptions* are the accounts given of other scripting.

These distinct but interconnected modes of scripting are likewise best regarded as *indefinables*, inasmuch and they acquire meaning only with reference to each other.

Matter

MATTER PROFFERS THE MATERIAL WHEREWITHAL — setting aside, for the moment, the mutual exploitation of konscients by konscients — from which (or in which) konscients fashion (inscribe) what they 'think up' (prescribe) for their private purposes. In exploring new territory, the naturalist is able to discern the presence of otherwise hidden life forms by observing the diverse ways in which matter is being sculpted and exploited there. Theologists, of course, have always contended that the same principle is applicable to cosmos at large.

While the constituents which comprise structure within scripts as well as the labels classifying them differ from one *materium* (material medium) to another — each reflecting the essential nature of its respective material makeup¹⁰ — the *grammars* (the sets

⁹ A *model* is a functional *prescription* constructed in an attempt to explain and/or predict the behavior of some phenomenon or phenomena. Thus, the LANGUAGE model presented in this book is a prescription for explaining how the *linguistic order* figures in the overall scheme of things.

¹⁰ Compare, for example, the constituents entering into notation for organic chemistry versus those of subatomic structure versus those of natural language, etc.

production rules and associated linguistic paraphernalia) which impose order on scripting within them evince a distinct symmetry among all ‘orders of \mathcal{M} ’ (17.7.4). A principle objective of this writing is to expose the essence of the unity which pervades *language* in all domains of the *linguistic order*.

Scope of the Model

THE METAPHYSICAL SYSTEM¹¹ which emerges in conjunction with *LANGUAGE* necessarily impinges upon everyone’s turf. While it is clearly beyond the scope of a single writing to examine its ramifications across the board (or, for that matter, to cite the vast sea of literature pertaining to it), specific chapters are devoted to *LANGUAGE* as it makes contact with such diverse subjects as scientific method and practice, education, religion, perception, and mental modeling.

References

LINGUISTIC, PHILOSOPHICAL, AND SCIENTIFIC WRITINGS which the author considers pivotal to his formulations are referenced in the text. However, it should be clear from the outset that the *LANGUAGE* model emerges almost exclusively from the author’s personal intuition relative to the role of language as the basis of order and functionality in the universe. A host of pertinent comparisons of *LANGUAGE* with other models could certainly be made — far too many to include in this writing. The author deems it more productive at this juncture to undertake the task of applying the *LANGUAGE* model to ‘dissolve’ apparent paradoxes and dichotomous formulations (empiricism/rationalism, idealism/materialism, phenomenologic/analytical, etc.). Hence, for the time being, at least, cross-comparisons are left for adherents of other approaches to make for themselves (should they feel inclined to do so).

Lessons Learned

OF THE LESSONS LEARNED in the course of plumbing the depths of Whorf, two merit special mention in advance. The first has to do with the prosecution of science itself, while the second has to do with the agency of man. Let’s take them in that order.

The Nature of Nature

ADMITTEDLY, NO ONE FULLY COMPREHENDS the workings of Mother Nature. She is at once so simple in what we *truly* know about her and yet so seemingly complex in her composite form as to confound our understanding of what she is actually like. This leads to frustration, as evinced by Pugh <1978, pg. 154> when he mused that “*If the human brain were so simple that we could understand it, we would be so simple that we couldn’t.*” Still, those who devoutly seek to comprehend her mysteries, from the little that they have been able to understand, are reasonably convinced that the details can be sorted out if the as-yet-hidden variables can be teased out.

¹¹In this writing, the term *metaphysics* and its derivatives denote the branch of philosophy which examines the nature of reality, including the relationship between mind and matter, substance and attribute, fact and value.

THIS CONVICTION is not grounded in the expectation that man's capacity to fathom complexity can somehow be exponentially multiplied, but rather in the impression that the complexities to be dealt with are largely an illusion created by man's inability to perceive the unifying structural principles upon which the whole is erected. Variety in nature, it seems, does not spring from unbridled enumeration of unlike entities but, rather, from combinatory prowess grounded in a small set of primitives. Once these are properly identified and understood, the order in what formerly seemed chaotic becomes evident. We speak of these primitives at some length in the book ([Chapters 4 and 8](#)).

A Hypothesis Neither Astonishing nor Exotic

THE SECOND LESSON has to do with the intrinsic powers of man himself — **with getting dependencies right**. Post-renaissance savants would have us believe that each of us is 'only a machine,' a machine which can be explained in every particular by taking an inventory of its parts and describing their interaction. According to this perspective, consciousness (including self-awareness) is simply a byproduct of mechanism and personal agency a myth. Beginning with Charles Darwin, the priests of scientism have embellished and carried word of this gospel to 'every kindred, nation, tongue, and people.' *LANGUAGE* turns this dogma on its head — mechanism is made subservient to conscience. We cite the pertinent *LANGUAGE* axiom:

ONE'S SENSE of self-conscious being, agency, and rationality is primal and not supervenient upon an material mechanism known or unknown to science but, conversely, mechanism (material order) flows from and supervenes upon it.

We thus seek to contravene the monism of [Crick <1995>](#), [Jaynes <1990>](#) and others of like mind by proposing a hypothesis neither *astonishing* nor *exotic* in the least, namely, the obvious — the FORCE OF INTELLIGENCE and the instrumentality of *LANGUAGE* in the organization and superintendency of *MATTER* in the cosmos ([12.12.3.2](#)).

Junction Grammar

I am convinced that when the valid elements of the currently competing models finally come into focus, they will be found to coincide with the essentials of Junction Grammar.

—Eldon Lytle¹²

For a treatment of universal structuring, I turn to *Junction Grammar* (*JG*), a theory of language dating back to the late 1960's.¹³ The founding premise of *JG* is, in a nutshell, that *MIND LANGUAGE* (as per [Figure 3](#)) exists, **that its fundamental structures are those of nature at large**, and that all forms of outward symbolism (speech, writing, sign language, mathematics, etc.) supervene upon it.

An effort has been under way over a period of many years in *JG* to expose the *MIND LANGUAGE* utilized, for example, by deaf-mutes as the basis for signing as well as by normal individuals for both decoding and encoding verbal strings in their native languages.

¹²For context, read the cover article at <http://www.junction-grammar.com>.

¹³For background and detail, peruse the articles online at <http://www.junction-grammar.com>

The product of this ongoing effort is a *linguistic algebra* expressive of the types, values, and computations that are seemingly carried out at MIND level when tongues wag, pens scribble, and hands sign. Given its involvement with computing unknowns, it may perhaps be helpful to conceptualize this system of notation as *MindMath*. However, for the sake of clarity in context, we alternately refer to this unique algebra as *Junction Grammar Mind Language (JGML for short)* --- not to be confused with *JGPL (Junction Grammar Programming Language [10.19.1])*.

JGML (aka *MindMath*) not only demonstrates the ability to *describe* the conceptual structures which underlie natural language texts, but is *explanatorily adequate* as well — in addition to proffering structural descriptions for many constructs formerly observed but not properly understood, its formulas have been instrumental in the discovery of structures not formerly observed at all. Predictive power of this kind is the hallmark of notation that makes direct contact with nature’s secrets.^a Last (and the key to its incorporation as the annotative medium of Whorf’s full model), the structures of *JGML* evince a direct linkage with material structuring in the ‘real world.’

^aCf. the *Periodic Table* in chemistry.

The reader may be relieved to hear that *JGML*, by virtue of its direct linkage with natural language constructs and what they talk about, is more ‘learner-friendly’ than conventional algebra. Also to the learner’s advantage is that fact that the generic bonds, or *junctions*, defined in *JGML* as structural primitives are largely familiar to one and all under the headings of co-ordination (conjunction), sub-ordination (subjunction), and ad-ordination (adjunction). These apply to distinct material media according to the peculiarities of the particular medium and, correspondingly, evince specializations within them.

Serendipity deserves credit for pairing up the modules of Whorf’s conceptual scheme with those of *JG*, a circumstance which facilitates the incorporation into the former of the descriptive assets of the latter as plug-and-play modules. The resulting merger equips *LANGUAGE* with the algebra required to graph the universal scripting operations identified above as well as with coding rules for the verbalization of *JGML* (see 12.14, *The Verbot*). Chapters 4 and 8 develop background and detail on *Junction Grammar* and *JGML*.

On Reading This Book

There are times when further development of the intellect is no longer possible without a **suspension of disbelief**, thus allowing strategic issues to be considered from a fresh perspective.

-- Author Unknown

LINGUISTIC RELATIVITY likely stands between you and the intended message of this book. To solve this problem, you will have to ‘join minds’ with the author in the intellectual exercise ahead and extend the courtesy of resisting the temptation to reject out of hand constructs and concepts at odds with what you ‘already know.’ In short, be prepared for both language and territory which the maps (*models*, if you prefer) presently in your head chart differently or do not document at all.

Given that the task of understanding what one reads is a central theme of this book, I draw attention to it intermittently in the course of developing the *LANGUAGE* model

and characterize it pointedly under the header of *Reading Stance* (Chapter 14.6.1). The classic example of shorting an author in this regard is the abject failure of epistemology at large to fathom Benjamin Whorf. Chapter 15 (*Resistance to Whorf*) discusses at length the type of self-centered reading which is not only a complete waste of time for the reader but inimical to the advance of knowledge as well.

On Burning Books

FOR THE POWERS THAT BE — regardless of what they presume to *protect* — there is a targeted lesson implicit in *LANGUAGE* worthy of serious consideration. It has to do precisely with the inclination to burn or shred (or, in the case of moldy scientific paradigms, SUPPRESS) what doesn't please. *LANGUAGE* says to them: If after 'reading' this book, you should feel inclined to burn it, so be it. Bear in mind, however — as the smoke rises and the ashes settle — that only one script in three has felt the heat. The *prescriptions* for it repose securely in the recesses of my mind and tremble impatiently upon my lips, anxious to crowd new pages with their detail. Burn ME then too, if you will, but the *inscriptions* for it will yet abide in nature, awaiting re-description and re-publication by my heirs. As Grandma Great in her incomparable wisdom would likely have put it: "*Burning books is like pounding sand in a rat hole.*"

Eldon Lytle
 Rose Valley, NV
 May 6, 2009



Figure 4: THE AUTHOR AT HIS NEVADA HIDE-AWAY.

INTRODUCTION

The average reader proceeds from page to page with the guiding assumption that what a text says to one, it says to all and, moreover, that the message of the author may be received essentially as intended by simply reading the text. This impression prevails because what transpires mentally during the process of reading is, in its scope, so expansive and complex that its enormity effectively overwhelms one's ability to keep tabs on it all. The fact that what is conscious about our readings flows freely leaves the impression that the whole affair is straightforward. Not so --- just as we remain unaware of what transpires beneath the visible surface of great waters, we remain largely oblivious to the undercurrents of language and how they impact our thinking and perception, our reading of texts, our behavior ... and the world in which we live.

-- Kailem Wehn^a

^aResearch Note, Oct. 2003.

Language in Perspective

Whorf's Warning

Perceiving widespread ignorance of mankind's primary asset to be a decidedly nontrivial threat to the general welfare, Benjamin Whorf placed his professional reputation at risk by equating the deficit in question to ignorance among primitive peoples of the operation of physical forces. As previously noted, he went so far as to allege in print that the average individual:

... whether simpleton or scientist, knows no more of the linguistic forces that bear upon him than the savage knows of gravitational forces. <Whorf, 1998, pg. 251>

No one was more aware, certainly, of either the merits of ongoing work by such men as Sapir to decipher the workings of the world's languages or the depth of their knowledge than Whorf, given that he himself was mentored by them and involved in their undertaking. By placing this remark in the context of its time, it becomes clear that the complaint registered was directed at the methodological constraints of the prevailing paradigm, which limited linguistic studies to a consideration of outwardly observable phenomena — for placing, in effect, the operation of language “below the surface” beyond the boundaries of legitimate scientific investigation.

Disregarding Convention

Study of the linguistic forces to which Whorf refers was therefore exclusive to the rebellious few who refused to observe convention. It was what they discovered about the operation of language in this forbidden territory that caused them great concern for the welfare of the race and prompted the remark in question. (We shall have more to say about the brand of scientism responsible for this exclusion as the discussion proceeds.)

In sum, setting the procedural directives of his day aside, Whorf straightway stepped over the barrier into the psycholinguistic domain that underlies the outer workings of *language*, extending in doing so its reach to encompass all forms of symbolism. Included here were the electromagnetic signatures and patterning that breathe life into outward forms of language, serve as the basis for

expression between deaf-mutes, preverbal children, animals, etc. It was in this sub-verbal domain where Whorf detected a divisive potential, where:

... the world is presented in a kaleidoscopic flux of impressions which has to be organized ... by the linguistic systems in our minds [where] we cut nature up, organize it into concepts, and ascribe significances as we do, largely because we are parties to an agreement to organize it in this way --- an agreement that holds throughout our speech community and is codified in the patterns of our language. <Quoted from Pinker, 1994, pg. 59-60>

Here it was, then, that Whorf discerned strategically important linguistic forces at work of which simpleton and scientist alike were ignorant.

The “Chomsky Revolution”

Tragically, Whorf succumbed to a lingering illness in 1944 – while still in his prime – leaving his work undone. In 1957 came the Chomskian revolution <Chomsky, 1957b>, which, harking back to Humboldt, championed the thesis that language is not acquired in the manner intimated by Skinner, being, rather, an innate system which “makes infinite use of finite means”, to generate an infinite number of sentences. Coupled with this concept came the introduction of production/rewrite rules coupled with transformational operations able to synthesize sentences, thereby ushering linguistic notation into the realm of formal systems. Not included, lamentably, was either the expanded definition of language which incorporated the phenomena of concern to Whorf or an algebraic production rule format employing both operands and operators. The new formulations were still firmly focused on the manipulation of verbal forms and the taboo against analysis requiring introspection remained in place — a stipulation which disqualified semantics (the study of meaning) as a legitimate subject of valid scientific inquiry.

Still Warming Up

Although the ban on semantics was short-lived, a multiplicity of views relative to how best to integrate considerations that surround meaning had the effect of fragmenting the field. Thus, some fifty-plus years hence, this effect (taken together with additional competing models advancing their own innovations), we are confronted by an entire array of competing paradigms. To wit: Transformational Grammar, Structural Grammar, Tagmemics, Stratificational Grammar, Relational Grammar, Word Grammar, Autolexical Grammar, Construction Grammar, Functional Grammar, Categorical Grammar, Head-Driven Phrase Structure Grammar, Lexical Functional Grammar, Systemic Functional Grammar, and so on. Each ‘grammar’ presents its own perspective and rationale for how to best account for linguistic phenomena. Owing to this lack of unity, it has been suggested that linguistic science yet labors in a ‘warm-up’ state, akin perhaps to ‘*an orchestra expectantly tuning up, each player absorbed in his own instrument only, deaf to the caterwaulings of the others.*’

Classroom Deficit

Predictably, the lack of a working consensus among language theorists (not to mention the absence of classroom-friendly linguistic models), has had an adverse influence in the educational community, there being little that language professionals currently agree on as standard fare worthy of the classroom. Notwithstanding the favorable press accorded to Chomsky’s work, what it all adds up to is the fact that *linguistics* as a science is not as yet held by educators to offer sufficient substance to be included in the curriculum.

Meanwhile, classroom instruction in language has plunged to all-time lows. There can be little doubt that a substantial component of *Nation at Risk* was rooted in the dearth of meaningful language instruction in the public school system. Disregard for what is new and meritorious in the field, plus widespread abandonment of traditional language curricula (e.g. sentence diagramming) has now produced generations of students largely unaware of even the rudimentary workings of language. Not surprisingly (as emphasized by the more recent Bush *Education Initiative*) the

quality of English writing and language skills evinced by the average student has deteriorated alarmingly over the past 50 years.

Working a Synthesis

In the author's view, the solution to the language-linguistics deficit described in the foregoing commentary is to exploit Whorf's unfettered vision and extended definition of *language* by constructing the *formal model* that it implies. The expression *formal model*, of course, asserts our intent to equip it with whatever post-Whorfian formal paraphernalia may be required to both provide for language generation *and* to formalize the operation of linguistic forces of concern to him. In this manner, a synthesis of Whorf and the best of what has transpired since can hopefully be achieved.

REALITY \iff [LANGUAGE-THOUGHT] \iff SPEECH

The Informal Model To Be Expanded Upon

In what follows, therefore, we will negotiate stepwise the posthumous return of our exile (Whorf) by complementing Whorf's informal model with formal fixtures and filling in detail. In so doing, we endeavor to fashion a conceptual workspace and medium of description having sufficient breadth and power to relieve the fragmentation that currently divides linguistic science. Beyond that, of course, we wish to construct a model of language having sufficient pragmatic value to effect a change in attitude vis-à-vis the study of man's primary asset (linguistic science) and secure for it a seat on the curriculum panels of our primary and secondary educational institutions.

Expanding the Definition of Language

As an entry to the central concern of this work, we again — in accord with Whorf — assert the centrality of language, not only in all that we do, say, and think, but also in all that is or has been.

OUR CENTRAL THESIS is that *language* is not a uniquely social asset, but the reflection of an instrumentality which shapes and unifies the universe. *LANGUAGE*, in the extended Whorfian sense, is as ubiquitous as structuring, whether ensconced within the genes that give form to life, in the disposition of patterning among atoms and molecules, or in the protocols that order rational thinking.

Whorf articulated this concept as follows:

All that I have to say on the subject that may be new is of the PREMONITION IN LANGUAGE of the unknown, vaster world --- that world of which the physical is but a surface or skin, and yet which we ARE IN, and BELONG TO ...

Speech is the best show man puts on ... But we suspect the watching Gods perceive that the order in which his amazing set of tricks builds up to a great climax has been stolen -- from the Universe! <Whorf, 1998, pg. 248-249>

A premonition in language of an unknown world? Tricks stolen from the Universe? To understand what it was that Whorf was talking about, we must start at the beginning and tell the whole story. It is indeed a story that has everything to do with everything.

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