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Differential Semantics

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DIFFERENTIAL SEMANTICS

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ABSTRACT

Differential Semantics is a theoretical accounting of the semantic complexity found in natural language, particularly that of the academic and literary registers. It addresses natural language semantics in terms of its contribution to the characterization and expression of creative thought, beginning the perception and conceptualization of objective reality, followed by the metacognitive development of idiosemantic connotations in reference to those conceptualizations, and finally, the intuitive process of implication and inference that facilitates the abstraction and communication of thought.

DEDICATION

To my wife, who kept the home fires burning (literally and figuratively); my daughter, in whose eyes I have always sought to appear brilliant; my mother, probably the only person to have ever read every book in their high school library; and especially to my father, who taught me that if something does not work, then you figure it out and make it work anyway.

ACKNOWLEDGMENTS

I am truly indebted to Doctor Jerilou Moore, my counselor, cheerleader, and friend, who has been with me through every step of this process for the past five years. I am grateful to Doctor Douglas Davis who introduced me to qualitative research, Doctor Larry Hanshaw who introduced me to Elliot Eisner, and Doctor Rosemary Oliphant-Ingham who taught me that no matter what you are teaching, you are teaching language arts. And finally, I bow to the seriously smart people of the last couple millennia who were the truly great thinkers.

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PROLEGOMENA

> For a moment, he had almost grasped something alien to him, but it eluded him; and being unaware that there had been anything that had tried to break down the barriers in his mind and communicate with him, he was unaware that he had been eluded (Faulkner, 1922, p. 2).

As the expositor of reason, language is a definitive mark of humanness (Descartes, 1637, §V, trans. 1901). It is the voice of cognitive process. Within its intricate combinations of sound and sign lie the capacity for capturing, preserving, and recreating in the minds of others, the extraordinary range of nuanced complexity present in the world of human thought. It has the power to enable the inductive re-presentation of subjective reality, the ultra-dissociative introspection of metacognition (Descartes, 1641, Meditation II, trans. 1901), and the parsing of intuitive logic, creativity, and critical analysis (Pascal, 1660, §IV, 282, trans. 1910).

Critical and creative thought, whether we are developing our own or assessing that of others, is the mental process of analyzing and refining complex concepts by reducing their complexity to simpler terms. This process is also preface to converting those mental products into sensible forms (speech or writ) as implications, or back again as inference. Competence in this process (the reduction and restatement of complexity, particularly that drawn from text or lecture) is indicative of academic potential as well as confirmation of learning (Brown & Day, 1983; Farley & Elmore, 1992; Yuan, Steedle, Shavelson, Alonzo, & Oppezo, 2006), because reduction and

restatement requires comprehension (Hamilton, 1836; Irwin, 1991; Sweet & Snow, 2003; Thompkins, 2010, pp. 257-258). Unfortunately, most students lack the apperception and articulacy required for this process (Adams, 2009, p. 163; Report of the National Reading Panel, 2000), because they lack the semantic percipience required for higher-level inference (Snow & Uccelli, 2009).

Implication and inference hinge on the fluent assemblage of lesser concepts into a meaningful whole. For any linguistic *register* (level of formality), this requires a grasp of the range of meaning ascribable to a word and a sense of the implications being created as those meanings are woven into a given context—respectively coined *connotation* and *sense meaning* by John S. Mill (1843, ii. i. §3; i. ii. §5). At the word level, the meaningful whole consists of the concepts represented by the sublexical elements within the word (*conjoint context*), including flectional and derivational affixes. At the sentence level (or greater), the meaningful whole is formed of a conflux of the connotations and contextually-created senses represented by the individual words within the larger frame of reference (*proximal context*).

With common, high-frequency words—*Tier 1 vocabulary* (Beck, McKeown, & Kucan, 2002, p. 8; Beck, McKeown, & Omanson, 1987)—comprehension is an essentially thoughtless process owing to the familiarity and semantic simplicity of the lexis and the use of common-vernacular expressions. *Tier 3* words (low-frequency, discipline-specific, technical words) are also readily processed due their definitional specificity. For instance, the word *monocotyledon* from a fifth-grade science vocabulary, or *medial clavicular subluxation* from a class in orthopedic diagnostics are both precise statements for which are needed neither a melding of context nor the

discernment of semantic interplay; they are straightforward expressions with straightforward interpretations. But *Tier 2* words, the high-frequency, non discipline-specific, literate registers, present intricate semantic subtleties as they lend-to and take-from their surroundings, producing the sort of nebulous, semantic synergies found in literature, academic conversation, and figurative descriptions of difficult concepts. Simply having a dictionary definition of a word or knowledge of the morphemes within the word does not provide a definitive understanding of the meaning of the word within a particular occurrence. Rather, the specific meaning of any word is a matter of the context into which an etymologically nuanced semantic (perhaps far removed from the original) is being blended, and the innate meanings of its morphemes may contribute little or nothing toward the understanding of remote derivatives or figurative presentations.

Comprehension at this level is highly inferential. Inference is drawn from both reason and intuition, deductively and inductively, from things known and things assumed, and from things premised to things imagined. Inference is the leaven of both higher-level comprehension and expression. It is antecedent to critical thought and analysis, and prelude to the higher philosophical concepts of ideals and apologetics, critical narrative, exegesis, and even sophisticated humor. Thus, it is the elusiveness of this level of inference that confounds critical and creative thought (McPeck, 1981; Mottaghy, 2006; Norris, 1985) and holds us in bondage to an uninventive and unimpassioned status quo. Such was the case of Faulkner's adumbrant thrall (1922, pp. 1-2).

The construction of inference is a multi-task process involving a nexus of parietal and prefrontal cortical areas in the brain—the left posterior parietal and the left frontal cortices in particular (Honey, Fu, & Kim, 2002; Mottaghy, 2006). During verbal processing, these areas,

also known as *working memory* (Miller, 1956; Baddeley, 1992; Pass, Alexander, & Sweller, 2004; Sweller, 1988), perform the concurrent and transitory functions of reconciling a word, its meaning, and its immediate context while at the same time extrapolating that admixture back into the larger context in which it is being presented. Fluency in this process is essential to comprehension due to the cognitive load (limited capacity of 5-9 elements of new information, Miller, 1956) and temporality (10-15 seconds of usability) of working memory processes. Inference is also dependent on the breadth and integration (the scope and allusory interconnectedness) of one's network of conceptual knowledge, or *operational schema* (Piaget, 1953), as new information is being connected with old (Bransford, Brown, & Cocking, 2000; Daneman & Carpenter, 1980; Daneman & Merikle, 1996; Goldstein, 2010; Virtue, Haberman, Clancy, Parrish, & Beeman, 2006). If, within one's operational schema, there exists no extant referent or sense of the possible meanings a word may be attempting to weave into its immediate surroundings, there will be no meaningful "reconciliation" to extrapolate back into the larger context. The fluency of the cognitive processes (working memory) that enable one to articulate the lesser concepts to the next level and construct a comprehensive understanding of what is being presented (the meaningful whole), will cease, and with it, the possibility of critical thought and expression—the higher-level skills that are dependent on higher-levels of intuitive reasoning.

Academic words (the *literate registers*) fall essentially into two categories: one, the strict morphemic constructions, eponyms, and technical nomenclatures we find in biological and botanical appellatives, medical terminology, and other disciplines (Tier 3); the other, the more elegant and functionally diverse, abstract vocabulary of letters, such as we find in literature and in elevated discourse (Tier 2). Sophisticated presentations in prose or poetry, for instance, may

limn semantic subtleties through allusion and contextual interplay by extrapolating the concepts inherent to their wording into figurative settings governed neither by standard definitional nor grammatical protocols. Allegory, for instance, can present numerous words being used figuratively, interacting with one another figuratively, and within a context that is itself, metaphorical: figures, within figures, within figures. The same, less one layer of figure, might well be found in academic conversation or lecture. But just as a well-composed painting may carry semantic weight for which the observer possesses neither the pixels nor the palate for the depth of allusion being presented, a reader or listener might suffer likewise. In either instance, there will be a failure to comprehend due the attempt to apprehend the scope and depth of a sophisticated landscape through a simplistic lens.

The larger purpose of this study is to contribute to the ability of students to become creative, analytic thinkers. The more focused purpose is to augment the language comprehension skills necessary to that end. The prospectus is for a theory of Tier 2 semantics that might serve as a framework for the development of *pedagogical* (primary and secondary grade levels) and *andragogical* (post-secondary/adult, Reischmann, 2004) programs for language arts instruction.

II
PARADIGM: PHILOSOPHY AND DESIGN

A research paradigm is the philosophical perspective that bespeaks the underlying concept, assumptions, values, and method—collectively, the research philosophy and design—of a proposed study (Johnson & Christensen, 2005). This chapter briefly describes the nature of this study and its design, first as a generic model, and then, as it has been modified to suit the particular requirements of the project.

Approach

Theoretical studies advance conceptual thought. There is no review of literature, no methodology, and no outcomes. Empirical information is presented only when it advances a theoretical issue (VandenBos, 2013, p. 10, 1.03). What is required is internal consistency (between the various aspects of the theory) and external validity (in that it is intuitively logical when considered heuristically). The aim of this study is to formulate a theory of Tier 2 semantics —detailing the differential nature of natural language semantics—by identifying the phenomenological processes contributing to its complexity (Creswell, 2013, p. 48; Saldaña, 2013, p. 62). One premise of this theory is that a significant portion of this complexity arises from the figurative use of simple concepts. The proposed process for identifying this (and possibly other) phenomena is to construct an *etymonic paradigm*—a comprehensive list of derivative forms originating from a single etymon (an *etymonic singularity*)—by first

back-tracing the etymon to its nascent form (as a Proto-Indo-European radical) using period and modern etymologies, and then documenting the creation of new, etymonically-based lexemes (the subsequent derived forms) by their appearance in ancient literature. It is a reasonable assumption that the literary works of any period—written by the educated and for the educated—would be the most likely source for the sort of creative, figurative use of words being sought. They would also be the most likely writings to have survived the millennia.

The etymon chosen for analysis is the Latin cognate *cur/curr*, in English, "run." This cognate was chosen because of its primal simplicity and also because of the vast number of derivative forms discovered during the exploratory phase of this study. Validation of this premise will be the emergence of *nomothetic occurrences*—repeated instances demonstrating a general principle (Windelband, 1894 as cited in Mayr, 1997)—made manifest by the comparison of period and modern Indo-European etymologies and the derivative production found in the *diachronic* (historical) literature.

Research Design

One of the more unique features of qualitative research design is that there is no accepted qualitative design process (Creswell, 2013, p. 49, 51). An *approach* in a qualitative study is a design profile consisting of the particular research questions, methodology, and standards of validation that the researcher deems best suited to the nature of the inquiry. Thus, the researcher is at liberty to either create a model suitable to the study or to modify an existing model. The research design for this study is based on a composite of two generic models: Clarke, 2005 and Hennink, Hutter, and Bailey, 2011.

The oblique, prefatory phase of this composite model—a priori *Process coding* (Figure 1)—alternates between the stages of inductive and deductive reasoning (observation-pattern-hypothesis-theory and the deductive inverse) in seeking to identify a particular phenomenon (a *code*, or category for data organization) that would best capture a premiss of the proposed study (Glasser, 1992).

Figure 1. Generic Model for Grounded Theory Studies

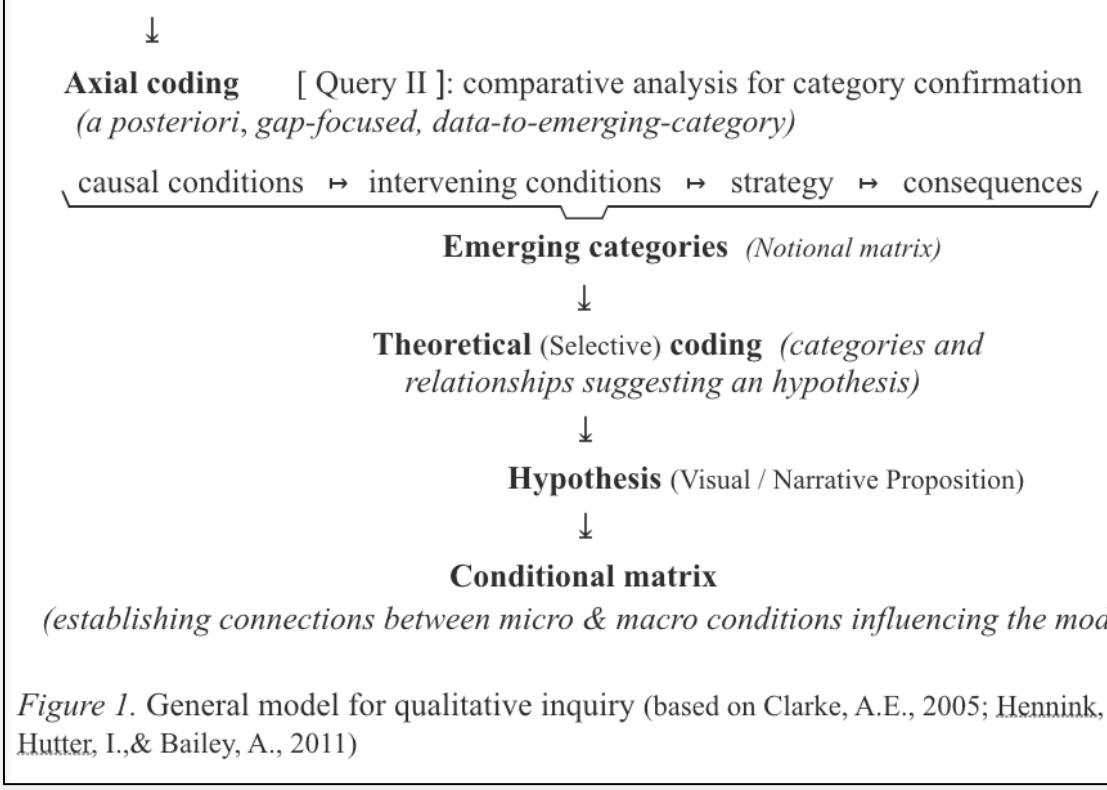


Figure 1. General model for qualitative inquiry (based on Clarke, A.E., 2005; Hennink, M., Hutter, I.,& Bailey, A., 2011)

A second round of data gathering (*Axial coding*) utilizes this code as a starting place and, as new data coalesce into new categories, advances a *Notional matrix* (the apparent categories for the inquiry, Strauss & Corbin, 1990, 1998). All categories must, of course, earn their place (Charmaz, 2006, p. 66; Richards, 2015, p. 104) and not be allowed to dictate to the matrix, that is, to demand evidential proofs for themselves rather than yielding place to more appropriate

categories (Glasser, 1992). The analysis of the data leading to the establishment of the notional matrix and the structuring of implicit meaning about those categories (Charmaz, 2006) produces a potential set of *theoretical codes* (those that will ultimately be used in establishing the hypothesis, Strauss & Corbin, 1998).

The term *constant comparative,* in qualitative research parlance, refers to the study-long process (not a series of stages as Figures 1 and 2 would suggest) of reconciling the potential set of theoretical codes with the body of dialectical adductions (Aristotle, *Rhetoric* V, §2.206, trans. 1924) being produced by the data. The categories emerging throughout this process continue to modify until they reach a point of singularity due the new data ceasing to demand any further modification. The result is a data-populated code set from which the theoretical codes (which will provide the evidence for the *visual/narrative hypothesis* and *conditional matrix*) will be drawn. At this point the preliminaries end, and the process of proposition synthesis begins.

The model as translates to this study (Figure 2) uses project-specific modifications in the development of the theoretical code set. Support for the theoretical coding is based on the heuristic (intuitively evident), diachronic data gleaned from the etymological references. The validation of the theoretical propositions implicit in the study are by dialectical argument, presented as either conditional or causal enthymemes—that is, arguments deduced or derived from the accepted opinions (*endoxa*) which, in this case, are the authoritative references and established translations of period literature—by which, conclusions may be accepted as evident (Aristotle, *Rhetoric* II, §22-26, §6, trans. 1924). The rhetorical requirement for conditional and causal enthymemes is that they manifest a logical premise-conclusion formulation (Aristotle's Rhetoric, 2010).

Figure 2. Model as Translates to this Study

Process (Open) **coding** [Query I]: *(initial semantical and etymological queries suggested figurative usage would be a significant code category)*

↓

Axial coding [Query II]: *(gap-focused research on figurative usage)*

innate meaning ↦ etymological phenomena ↦ formalization ↦ aggregation

↓

Notional matrix *(possible code set suggested by the comparative analysis of data to codes)*

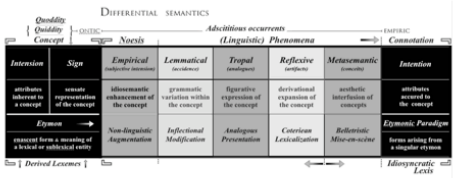
concept ⇛ (insn ↦ empr ↦ flct ↦ trop ↦ drvl ↦ msem ↦ intn) ⇛ connotation

↓

Theoretical coding *(data populated code set producing visual & theoretical propositions)*

↓

Visual proposition



↓

Theoretical proposition

(statement of interaction and implication of theorized codes)

Figure 2. Modification of a generic model. The code sets in this figure are notional. The actual theoretical code set is given in chapter III, beginning on page 24.

Validity

Validity is a measure of the quality of a conclusion. Internal validity is concerned with the accuracy of inferences regarding *causal relationships* (Trochim & Donnelly, 2006) and as such, does not apply to mind-mediated studies (other than maintaining consistency between the various aspects of the theory as previously stated). External validity, on the other hand, is relevant, and under that heading, there are three factors to consider: structural corroboration, consensual validation, and referential adequacy.

Structural corroboration (Eisner, 1991, pp. 110-112) seeks a confluence of varied evidence, i.e., different types from different sources. It is the weight and coherence of the evidence that tends to persuade, lends credibility, and ultimately validates (Aristotle, *Rhetoric* III, trans. 1924). The academic support for the premises advanced in this study is drawn from accepted research in Proto-Indo-European, Greek, Latin, and English by authoritative institutions: The University of Oxford, The British Academy, The University of Leiden, and The University of Texas (Austin) Linguistic Research Center.

Consensual validation (Eisner, 1991, pp. 112-113) is agreement among competent others. Consensual validation in this study rests on the eminence of its sources. The works and organizations sourced represent the highest standards of scholarship and are universally accepted as authoritative.

The extent to which a work avails the reader of the essence of the perception and interpretation of is its findings is its *referential adequacy* (Eisner, 1991, pp. 113-114). If a study does not illuminate the otherwise arcane, then it fails to fulfill this primary purpose (Aristotle, *Rhetoric* III, trans. 1924). The referential adequacy of this study rests upon the clarity of the presentation of its findings in visual and narrative form.

Analysis and Representation

The analysis process in qualitative theory is continuous (Miles, Huberman, & Saldaña, 2014, p. 72; Patton, 2002, p. 432; Richards, 2015, p. 104) and is built into the research design as the *constant comparative analysis* of the process codes, axial codes, and the emergent theoretical codes (Corbin & Strauss, 1990, p. 72; Strauss & Corbin, 1990, 1998)—leading to the visual and

theoretical propositions in Figure 2. Analysis begins with the identification of representative process codes. From that point, code categories are added, modified, or replaced as new data coalesce into the various categories. Relationships are established (through constant comparative analysis) between the emergent categories of the axial coding phase, the propositional codes of the notional matrix, and the theoretical codes from which the visual and narrative propositions will be constructed.

III
DIFFERENTIAL SEMANTICS

This chapter discusses the postulates of *Differential Semantics*, beginning with their positioning within the traditions of philosophy of language, followed by discussions of *Semantic Resonance*, *Semantic Differentiae*, and the illatives (inferences and conclusions) to be drawn from them.

The intent of the synopsis on philosophy of language is not to slip into the polemicals of competing semantic and foundational theories, but to summarize them as thematic categories in order to provide context for the more multifarious nature of *Differential Semantics*. The section on *Semantic Resonance* maps the connotational path of meaning (as an accrued semantic) from the explicit properties of objective reality, to the implicit, intuitive world of discourse semantics. *Semantic differentia* considers the diachronic and synchronistic (Saussure, 2015, W. Baskin, trans.) genitors of semantic complexity in the literate registers from a "heuristic viewpoint" (Einstein, A., 1905), that is, by way of extant evidency and intuitive reason (Aristotle, *Prior Analytics* III.xix.97b.8-14, trans., 1938). The goal of this chapter is the fashioning of an elegant, noetic theory in an elegant, concise form.

In the interest of clarity and concision, great care has been taken in the selection and definition of terms. The terminological path of *Differential Semantics* crosses numerous

academic fields: philosophy, philosophy of language, linguistics, logic, psychology, and etymology. As a consequence, terms relative to one field may conflict definitionally with the same term in another. Where there exists an appropriate term, the field of study, source, and definition are given in the glossary (Appendix B). For convenience, the more important terms (in italics) are also defined by inline glosses. Where appropriate terms do not exist, *terms of art* (coinages) have been carefully crafted so as to capture the essence of the newly named entity.

Philosophical positioning

"Whoso lusts for coherence, lusts for lies." (W. M. Cox, personal communication, 2016).

Philosophy, regardless of the subject, is simply a knowledgeable speculation as to the inner-workings of some aspect of reality. In Western traditions, following Aristotle's categories of moral and natural philosophy (*Organon,* Bk. I, trans. 1908), philosophical thought is divided into the practical and the theoretical. Practical philosophy deals with morals, ethics, and values (axiology) and their relevance to fundamental human behavior. *Theoretical philosophy* aligns more with what we normally think of as "being philosophical:" the nature of reality (*metaphysics*), our knowledge of that reality (*epistemology*), and what we are able to make of it all (*logic*). All language studies are inherently philosophical, because they all deal with reality, our understanding of reality (both epistemologically and logically), and the representation of our thoughts (concerning our understanding) by some means perceptible to others.

The study of language falls to two further traditions (philosophy of language and philosophy of linguistics), both of which subsume to the broader heading of *Theoretical linguistics*. *Philosophy of linguistics* deals exclusively with syntactics—the relational arrangement of

linguistic signs (words or parts of words) absent any reference to their meaning (Wittgenstein, 1961, 3.33). *Philosophy of language* concerns the linguistic representation of reality, thought, and meaning—respectively, the metaphysic, cognitive, and semantic aspects of *natural language*, or "language as it is used" (Morris, 1937, p. 4).

Among the more controversial issues surrounding natural language are the vagueness of the meaning of words (particularly with reference to context), what exactly "universals" are, and whether it is even possible to discuss the vagueness and imprecision of natural language using a language that is fraught with vagueness and imprecision. There is also the question of the level of formality appropriate to such studies: whether linguistic meaning can be explained *elenctically* (indirectly, by intuition), whether it requires the deictic formality of lambda calculi, or perhaps something in between. The philosophical import is that natural language semantics are integral to all philosophical pursuits, because all philosophy is analytic, analysis is the process of the parsing and pondering aspects of reality, and language is the medium for communicating those thoughts.

Though the range of speculation surrounding these issues is formidable, the theories concerning them can be grouped into general categories: *Language use theories,* that suggest that meaning lies in the way a particular linguistic community uses language; *Pragmatic theories,* in which the meaning of a sentence is determined by what happens when someone hears it; *Reference theories*, that purport the meaning of a word to be the same as whatever we happen to think the word is referring to; *Idea theories,* which hold that meaning resides in the mind and is merely prompted by *signs* (words); *Truth-conditional theories,* in which meaning is determined by the conditions under which a sentence may be true or false; *Verificationist theories,* where the

meaning of a sentence depends the hearer's ability to recognize the truth or falsity of a sentence; and *Constructivist theories* that suggest that speech only passively describes reality and thus, can be used to affect social change simply by manipulating the meaning of words.

Differential Semantics is a noetic, integrate model (a composite of noumena and phenomena that account for the larger patterns of semantic complexity in natural language) that addresses semantics from two interrelated perspectives: (a) *Semantic Differentiae*—the sources of semantic complexity—and (b) *Semantic Resonance*—the correspondence of connotation between individuals).

Differential Semantics sources, defines, and orders the genitors of the semantic complexity found in the literate registers. It frames the quisquous proposition of *connotation* (associated meaning and attitude in addition to a primary denotation) as an eclectic blend of convention, conception, and discourse semantics. It postulates meaning as accruing from multiple, distinct sources (*differentiae*), figurative usage (*analogues*) as the dominant feature in lexical complexity and expansion, and *idiosemantic reference*—connotation unique to the individual—as both an enabler of and a barrier to comprehension.

Semantic Resonance

The purpose of language is to create in the mind of one person, the thoughts residing in the mind of another. That language is successful in characterizing and expressing thought is evidenced by the fact that we hear what is spoken and read what is written and thereby comprehend what was formerly the purview of synapses. *Semantic Resonance* premisses thought and the representation of thought as an eclectic blend of convention, subjectivity, and

intent which may be conceived as supervening layers (or orders) of semantic refinement. This section describes these orders in terms of their semantic contributions to the characterization and expression of thought, beginning with the objects of thought (the first order), followed by the formation of subjective connotations in reference to those objects (the second order), and finally, the intuitive reasoning of implication and inference in the characterization and expression of thought.

First Order Semantic: Based on Innate Properties (Intension)

> …if a man…does away with ideas of things and will not admit that every individual thing has its own determinate idea which is always one and the same, he will have nothing on which his mind can rest; and so he will utterly destroy the power of reasoning… (Plato, *Parmenides*, 135b-c, trans. 1871).

All of human communication and the sum total of its meaning derives from the nature of reality (ontology), our understanding of that nature (epistemology), and our musings in regard to our understanding (logic). These are the objects of all human query, reason, and conversation**.**

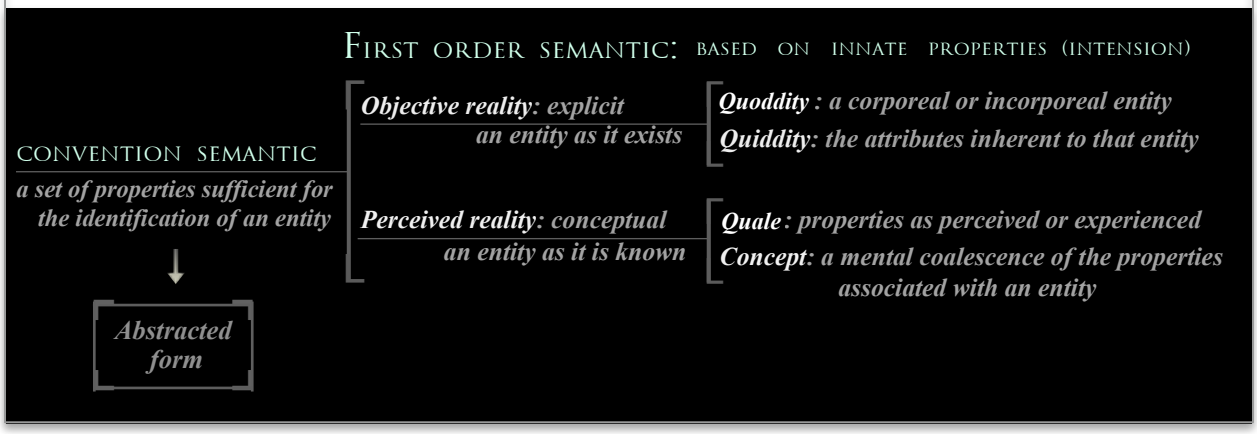
Ontologically, the universe consists of corporeal, incorporeal, and rational entities (*noema* or *quoddities*, in philosophical terms), each characterized by a distinct set of properties (*intension or quiddity,* also philosophical terms)—referred to by Descartes (1641, Meditation I) as "the elements out of which we make all our mental images of things, the true and also the false ones." A *quiddative set* of properties constitutes an ontological, objective, and comprehensive definition; that is, it includes all of the properties (or attributes) innate to an entity and thus, it represents the entity in its entirety, as it actually exists. If the entity were a dog—as generically, "a dog"—the quiddative set of properties would include everything both concrete and abstract about "a dog," down to the nucleotide bases in the canine genome sequence. This would include

any unknown properties as well. Thus, any reference to "a dog," regardless of who makes it or what it is about, is a reference to the entire quiddative set of properties that are innate to dogs, because in English, every possible aspect of objective dogdom has been abstracted to the representative sign "dog."

Of course, we have none of this in mind when we use the word. What we mean when we say "dog" is defined by an abbreviated set of properties—a *qualitive subset* of the *quiddative set*, composed of *qualia* (properties as they are perceived)—that have emerged as a *Convention Semantic*. That is, they are accepted by society at large as the properties that characterize a dog as being "a dog."

There are as many possible qualitive subsets as there are possible combinations of the properties innate to an entity. *Semantic Resonance* posits two classes of qualitive subsets, both belonging to the First Order Semantic. The first class of qualitive subset is the *haecceic*—an adjectival derivative of the Medieval term *haecceity*, coined by Duns Scotus in reference to the property of "thisness." *Haecceic subsets* are a combination of the *Convention Semantic* plus the discrete properties that make a thing describable as "individual" or as "this" thing, such as "that dog," "my dog," or "Morgan."

Figure 3. The Semantic Import of Intension



The second class of qualitive subset, *Applied subsets*, combines the *Convention Semantic* with one or more properties of lesser prominence. Applied subsets have practical, functional, and epistemological value and can consist of any number of the properties belonging to an entity. A veterinarian, for instance, would possess an extensive knowledge of the anatomical and physiological properties of dogs which would go well beyond the *Convention Semantic*. This augmented set of properties would constitute the veterinarian's *concept*—mental coalescence of the properties associated with the entity "dog,"—which, though being objective and intension-based (as are all first order subsets), demonstrates the inevitable inequity in meaning (even with subsets of the same class) between individuals. Thus, any reference to "dog" will reference a different subset of properties (a different concept of the word "dog") for every individual, but, the ever-present *Convention Semantic* will bring them close enough to indicate a generic "dog" for everyone.

Figure 4. The First Order Semantic (Intension) in Matrix Form.

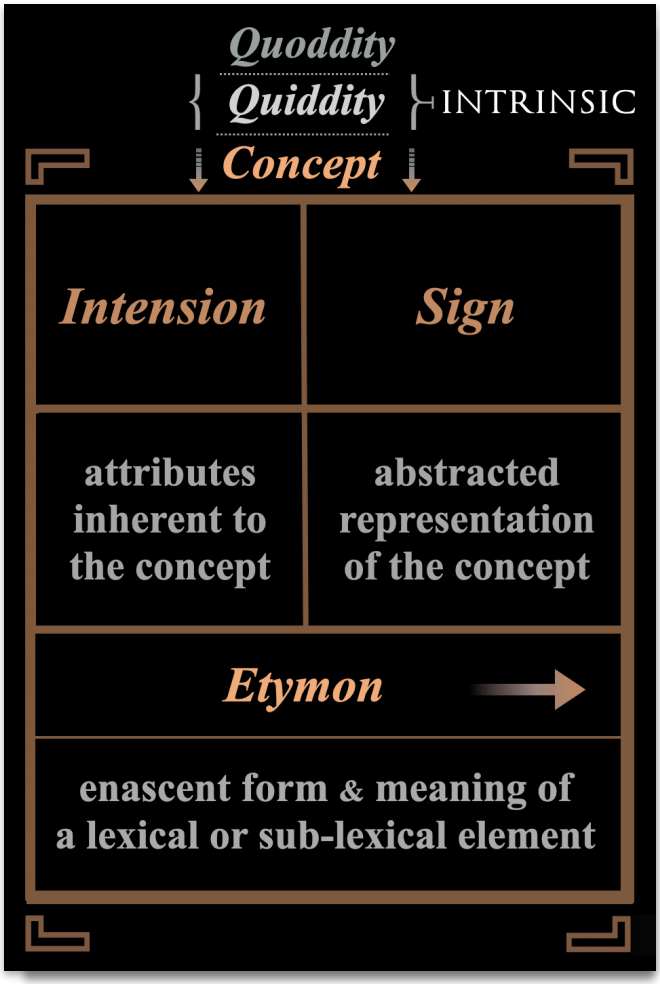


Figure 4. The abstraction of intrinsic meaning. The First Order Semantic defines ontological entities by their intrinsic properties. We form *concepts* (intellectual apprehensions) based on our perception of those properties. *Etyma* (the sensible, abstract reduction the intension associated with a concept) represent the antecedent forms words. In order to show the interrelationship of *Semantic Resonance* and *Semantic Differentiae*—as the second and third semantic orders are presented, and the differentia are sourced and defined—the *First Order Semantic* has been incorporated into the theoretical model (the *visual proposition*, Figure 2).

Second Order Semantic: Based on Apperception

> Who so seeks the deep ground of truth in his thoughts and would not be deceived by false propositions that go amiss from the truth, let him well examine and collect within himself the nature and properties of the thing.
> (Boethius, *De consolatione philosophiæ*, 523, Bk. III, metrum xi, trans., c1374).

We think in terms of concepts (*noême*), and our thoughts beget further concepts. *Concepts* are rational entities, intellectual apprehensions, mental images of the properties associated with an entity. The existence of a concept is not dependent on whether it is true, false, or fictional. Theories exist, for instance, though by their very definition they are inconclusive, and thus, neither true, false, nor fictional. Yet, despite being nothing more than inconclusive thought, they provide the existential assertions that prompt the investigation of such vexing pursuits as neurodivergence, stellar nucleosynthesis, music, and even the meaning of words.

The *Second Order Semantic* is a product of the appercipient nature of the human mind and is the source of personal conjecture, opinion, and belief. *Apperception* is a psychic-cognitive function (an activity of the mind that processes physical and mental perceptions) that continuously modifies existing concepts in consequence of their *psychological contiguity* (perceived associations by virtue of physical or temporal proximity) to other concepts or experiences (Aristotle, *De Memoria,* trans. 1906, p. 111; Guthrie, 1952; Hergenhahn & Olson, 1982, p. 35; Sorabji, 2006). An example of the physical would be the *connotation* (associated meaning and attitude in addition to a primary denotation or *convention semantic*) of the word "dog" after witnessing a person being viciously attacked by a dog. The coincidence of the preexisting concept (represented by "dog") and the newly introduced concept of "a violent attack by a dog" are apperceived as an *idiosemantic enhancement* of the entity "dog."

This enhancement (a subjective subset) stands as an addendum to the *Convention Semantic* for "dog," and consequently, this new, subjectively-enhanced concept becomes the person's new conception of "dog."

Apperception also functions to create bridges between "fact" and comprehension as it continually clarifies and re-evaluates newly formed perspectives (connotations) and synthesizes those perspectives to form conclusions. These intuitive reflections (a metacognitive blending of impressions) unite and assimilate newly formed connotations into broader and broader organizational *schema* (networks of knowledge, Nevid, 2007), ultimately, augmenting the basis of conjecture, opinion, and belief. This reflects an highly analogical thought process, that is, we see things in terms of their likeness to other things. We mentally analogize relationships between things as a means of organizing our minds and the world around us—like the familiar Linnaeian hierarchies (Linnaeus, 1964) used in the classification of organisms (kingdom, phylum, class, order, family, genus, species). These analogical relationships create frameworks that organize and guide our thoughts and ultimately, the way we describe our thoughts (Third Order Semantic). Thus, the import of the *Second Order Semantic* extends to the higher cognitive processes of critical thought and analysis.

Figure 5. The Semantic Import of Apperception

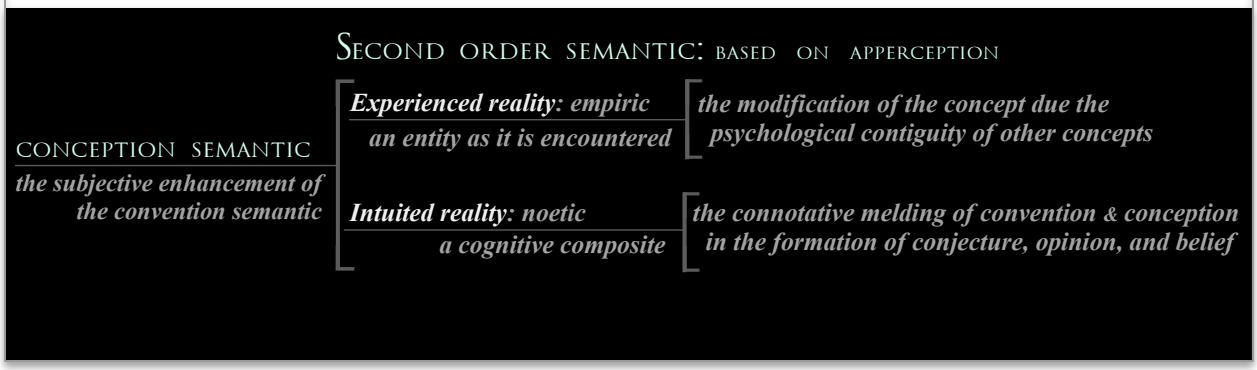


Figure 6. The Second Order Semantic (Apperception) in Matrix Form.

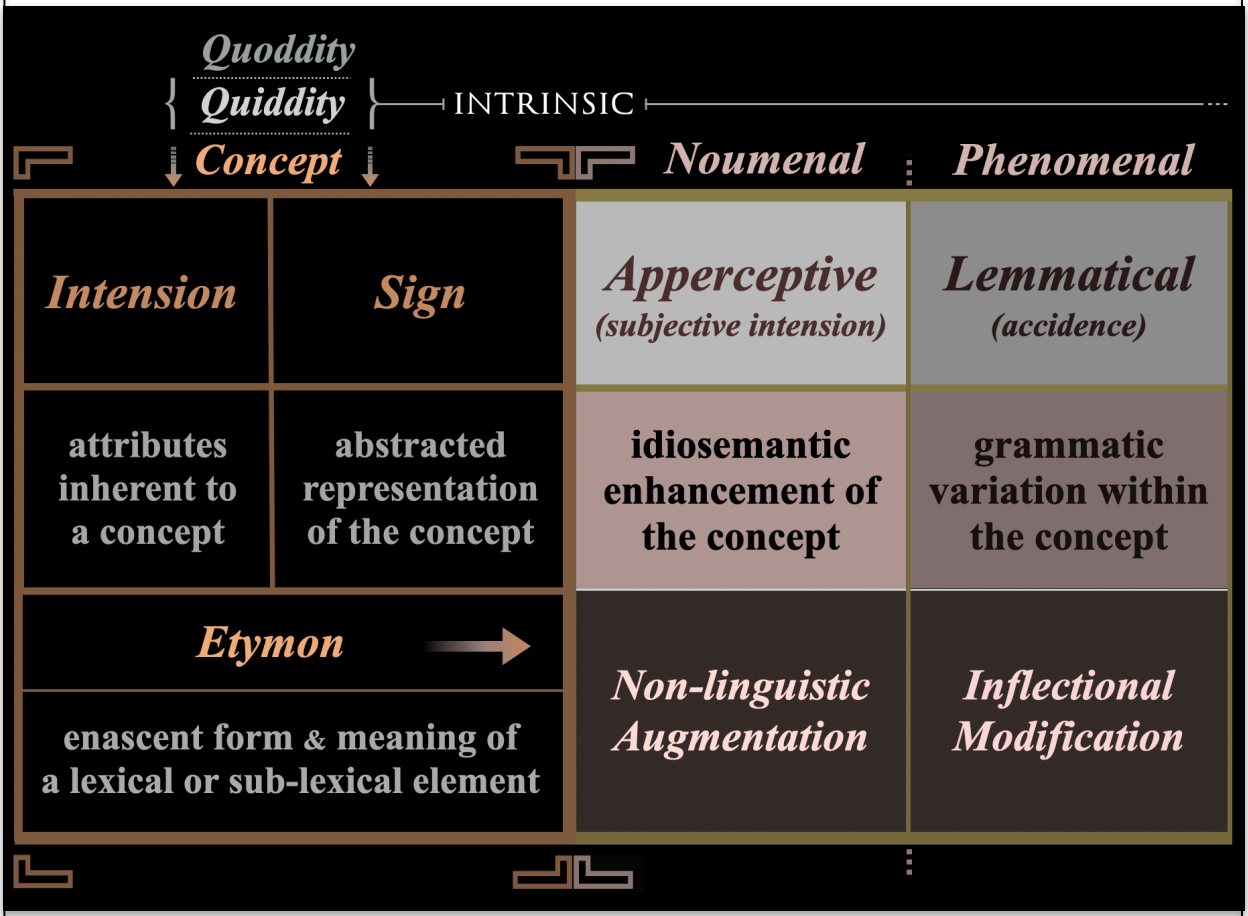


Figure 6. Apperception of intrinsic meaning. The *First Order Semantic* is characterized by the ontological objectivity of innate properties. The purely subjective *Second Order Semantic* is the product of intuitive reflection. This *noumenal* process—intellectual intuition (Plato, *Republic VI*, 508c, trans. 1894; Kant, *Critique of pure reason*, A254, trans. 1988; Coleridge, 1895, p. 755)—is a melding of subjective impression with objective reason in reference to a concept, creating a *subjective intension* (a "personal" meaning, which in turn, amends any associated concepts as well as any larger concept of which it may be a part). The change is to *the characterization* (the personal, non-linguistic augmentation) of the etymon, not to its enascent form and meaning. The *phenomenal differentia* (inflectional modifications, for instance) represent changes to both.

Semantic Differentiae

"Signs are small measurable things, but interpretations are illimitable…"
(G. Elliot, 1874, Vol. 3, Ch III, p. 34).

Differential Semantics is a theoretical accounting of the semantic complexity in the Tier 2 lexis and, by extension, that of natural language. The *differentiae* (Figure 7) are etymologically significant occurrents—*noumena,* as products of the mind, and *phenomena,* as products of event—that contribute to the semantic development of an etymon as it progresses from its intrinsic, conceptual meaning (*intension*), to an extrinsical, connotative aggregate (*intention*). This *adscititious* process (the assumption of meaning from outside sources) contributes, to one extent or another, to the semantic content of all categorematic substantives and attributives (nouns, pronouns, adjectives, verbs, and adverbs.).

The first semantic occurrent encountered by any etymon is *Apperception*. As discussed in the previous section, apperceived meaning (the *Second Order Semantic*) is the analytic and synthetic melding of objective and subjective meaning. This noumenal product is created by the psychological association of appositive concepts, whereafter, one subconsciously recalls the other.

Lemmatical variations (the first phenomenal event) are the morphological changes that reflect the re-characterization of *lemma* (the canonical form of a word together with its inflected forms) as it "morphs" to accommodate the case, voice, gender, number, and person of the substantives, and the tense and mood of the attributives in a particular presentation. While flectional changes do result in semantic gain, the gain is not in the meaning of the lemma—which would result in a change of class or part of speech—but as the reconciliation of its canonical form with its context.

Figure 7. Semantic Matrix.

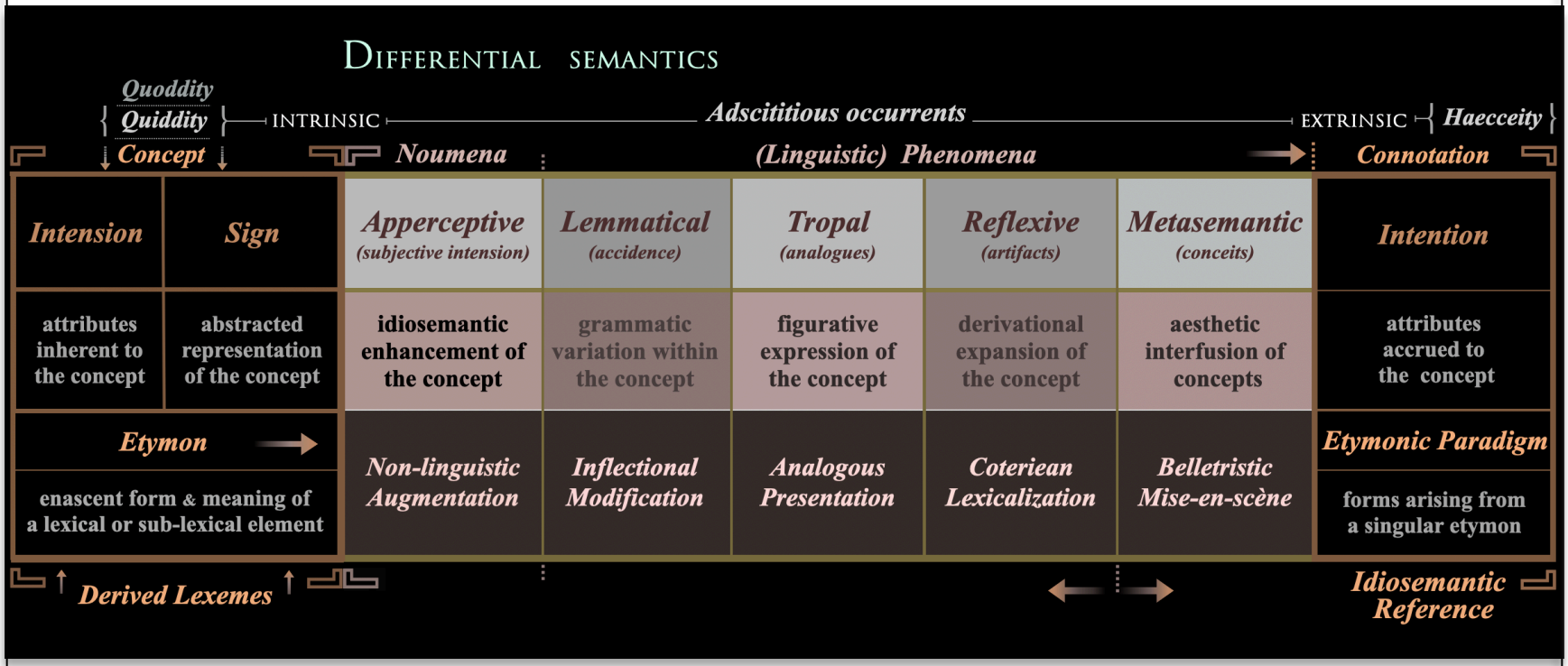


Figure 7. Visual representation of the combined semantic production of resonance and differentiae. Note that subjective intension, analogues, and conceits (the Apperceptive, Tropal, and Metasemantic) are creative products and that accidence and artifacts (the Lemmatical and Reflexive) are processes, thus, the distinction in their shading.

Thus, while the word “ran” still means “run” and is still a verb, it has assumed a different meaning because it now indicates “when it happened” in addition to the meaning of the canonical form, which only signified the concept of running. These grammatical accommodations are standardized in the grammar of a language and are thus, the most mechanical of the adscititious categories.

The assumption of additional meaning will always follow the event order shown in the matrix in Figure 7, but etyma do not necessarily draw meaning from every occurrent. For instance, an etymon—one known to an individual—will always have an apperceived meaning, and may have inflectional forms, but may not be a candidate for figurative use. In that case, the semantic gain of the word—its acquired meaning beyond that of the first order, convention semantic—would be limited to *apperception* and *accidence*. Thus, all categorematic words progress from intrinsic to extrinsic, from concept to connotation, from intension to intention, but all do not assume meaning, adscititiously, from every occurrent.

Analogues

Language, from its immemorial beginnings, has been an exercise in analogy, because every word of every utterance is a part of a figurative description of a thought. An even more creative use of descriptive figure is the importation of the meaning resident to a word into an unrelated context. The result is an analogical extension of the meaning of the word that creates either a new sense of the meaning the word, or an entirely new word as a derivative of the original. The figurative “repurposing” of the meaning of a word is a spontaneous, cognitive event for the purpose of illustration, explanation, or argument. This is a common mode of speaking used in

everything from everyday conversation to the most sophisticated descriptions in science and academia. Most of these analogical presentations are short-lived because they are a specific creation for a present concern. Others, through repeated use or possibly because of the prominence of their authors, become new lexemes (or *derivatives*) when they are *coterieanized* —formally accessed into the lexis of a language community—by virtue of common acceptance. The newly accepted lexeme then recycles to the place (Figure 7) of the original etymon and begins the assumptive journey anew, with *Apperception* as its first semantic occurrent.

Lexeme creation (in the expansion of the lexical corpus of a language) is accomplished mainly by this "figural repurposing" of etyma and lexemes (the *paradigmatic forms*) and their subsequent "recycling" as new lexemes. This recursive process can continue for as long as there are new lexemes (derivatives) being created.

A near exhaustive example of this process is shown in Appendix A. Appendix A chronicles the iterative cycling of the Latin cognate *cur/curr* (and its derivatives) by their first appearance in Roman literature. Appendix A documents the appearance of 70 derivatives (*reflexes, derived by development from earlier forms*) in 288 different senses during the period beginning 205 BC (roughly, the inception of Roman literature) and ending 200 AD (roughly, its dissolution). Of those 288 senses, 227 do not appear until after 87 BC—118 years into the subject period—suggesting that these are not carryovers from Old Latin or Greek, but rather, an example of the increasing complexity of the lexis due to the figurative repurposing of simpler forms (analogy).

These 70 lexemes are the product of successive recursions of previous, simpler forms (based on a single etymon), and each one represents a figurative departure from the innate meaning of both their derivational predecessors and the original etymon.

For example (supporting a major premise of this study), at some point in the development of this etymon, the innate meaning of *cur* (run) was extended into an unrelated context—that of water, which was, by analogical description, "running"—producing the derivative (in English) "*curr*-ent" as a figure of what the water was doing. The derivative was further extended (in secondary sense) to the movement of air, and even more figuratively, to that of time. At some later point, the concept of "the water is running" was figuratively extended to the fact that it was "running from here to there," thus creating the new lexeme, *Cour*-se, which was (at some point) extended (again, in secondary sense), to include anything else that ran "from here to there," from an obstacle course, to a course of study, to the course of one's life. This process continued with the creation of *cur*sor, pre*cur*sor, *cur*sive, dis*cur*sive, re*cur*sive, *cur*sory, *curr*ency, *cur*t, con*cur*, con*curr*ent, oc*curr*ent, *cour*ser, *cour*ier, con*cour*se, dis*cour*se, re*cour*se, *cur*riculum, and so on, each word having multiple sense meanings, and each an analogy created by the injection of the concept "run" into some context having nothing to do with running. Other than that, these words have nothing in common.

Conceits

Conceits are imaginative, distant, and unlikely comparisons that must be intellectually discerned. The better examples are allusive, illusory, and highly equivocal stylistic affections used as artistic devices. At their most sophisticated, they are an amalgam of setting (*mise-en-scene*), imagery, and the aesthetic commingling of concepts in which the words themselves may not be contributing in a definitional way or in keeping with their conventional grammatical function. Rather, there is a subtle nuancing that provides a "coloration" of meaning—like adding a hint of nutmeg to a spinach dish—a flavoring of meaning, not particularly analogical,

allegorical, or metaphorical. In such refined conceits, the "essence" of words "bleeds" into the surrounding context (as colors in an impressionistic painting would), while its surroundings (its context) suggests that it is the wholistic meaning (perhaps paragraphs or pages in length) that actually carries its semantic value. Few words reach this level of figure.

Intention

After a word has traversed its allotment of differentiae, it reaches a synchronistic (Sausseur, 1956, W. Baskin, trans. 2015) point of *semantic stasis* (a cessation of semantic gain for the moment). At this point, the word's *Intention* consists of its intrinsic (convention) and extrinsic (accrued) meaning, which, when coterieanized, becomes part of the etymonic paradigm of the base etymon. An *etymonic paradigm* is the total semantic import of all lexical forms deriving from an a single etymon. For the individual, the etymonic paradigm also includes apperceived meaning. This connotational aggregate constitutes the reservoir of *idiosemantic referents* (words and their meaning) accessible to the individual for the intuitive processes of implication and inference. Since all connotations are unique to the individual (*idiosemantic*), this will obviously impact how much of a thought can actually be communicated between given individuals.

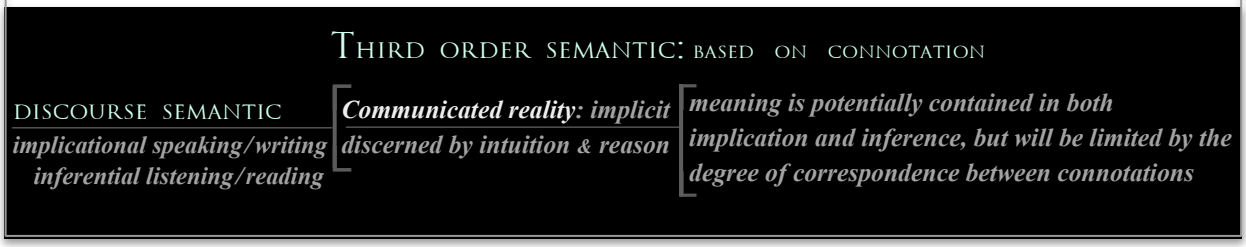
Third Order Semantic: Based on Connotation

In *Paradise Lost,* there is an exchange between Adam and an archangel named Raphael, in which the angel comments that the difficulty in talking to Adam about things of empyrean significance is his reasoning on the meaning of words: "…both life and sense, fancy and understanding whence the soul, reason receives (and reason is her being, discursive or intuitive); discourse is oftest yours, the latter most is ours…." (Milton, 1842, V, 488). His implication is

that the comprehension of "expressions of the mind" (thoughts) is intuitive, not ratiocinative—*ratiocinant* being *meaning deduced by the formulaic reduction of its contents to a series of definitions and syntactical relationships*. This is the same as the Chapter I analogy (p. 5) of the loss of the "semantic weight" of a painting because of the "simplistic lens" of the observer. Just as the painting could not be understood by the reduction of its contents to a series of hues, values, and chroma, neither can an utterance be more than superficially understood if interpreted likewise. All linguistic expression is intuitive because all linguistic expression is the abstracted analogy of apperceived intensions used in the description of thought.

Natural language is highly concomitant, that is, that in a typical presentation, the meaning of a word (or even a part a word) will be subject to numerous contextual influences, most notable, the influence imposed by the concepts represented by every other word in the presentation. The *process of thought* (*noêsis*)—in the synthesis of implication or inference— is the "weighing" of those concepts, one with another, in the creation of a *blended-concept analogy*—not unlike a painting in that it manifests meaning through the contextual presentation of depth, highlights, tone, texture, and shadings. But, given that it is not possible to know all of the properties that constitute an entity (per the *First Order Semantic*) and that there is little chance of a 1:1 correlation of the connotations of those entities between individuals (the *Second Order Semantic*), it is inevitable that any attempt at "concept blending" would be rife with ambiguity and imprecision by the time it reached the point of expression (the *Third Order, Discourse Semantic*). The incongruity of meaning and reference between individuals suggests that language, insofar as the precise meaning of words and expressions, is, unfortunately, peculiar to the individual (*idiosemantic reference*) and accessible to others only in general terms (Figure 8).

Figure 8. The Semantic Import of Connotation



Consider, for example, if I were to use the word "fishing," what would that represent? To one it congers a farm pond, the smell of mud, cow manure, and earth worms, the stillness of the humid summer air, and the rapid, pulsating vibration of a bream fighting against a cane pole. But to another come images sixty miles out to sea with a constant brace of wind and salt spray as he struggles against the unrelenting pressure of something big enough to eat him. These are vastly different images, both represented by the sign "fishing," and each with a legitimate connotation. Nonetheless, the implication of the one is in no way equaled by the inference of the other. Thus, they communicate only in part, only in the most general terms, and each is ignorant of just how general those terms were. Signs may begin life representing a specific concept (a *Convention Semantic*), but they assume an ever-evolving, personal meaning (an *Idiosemantic*) through their association with the events in one's life (*psychological contiguity*).

When concepts are abstracted to a sensible form of representation (a *sign*), a series of such abstractions can be arranged so as to capture, preserve, and present a thought in its entirety. To the extent that the recipient attaches like-meaning to those abstractions (i.e., the idiosemantics are a close match, thereby producing a high level of semantic resonance), the thought can be reproduced. Ill matched idiosemantics produce the reverse, particularly when presented in series (in context) where each word in the presentation bears its own idiosemantic.

Consider the earlier statement (that abstracted thought is a concatenated series of mutually nuancing concepts) in light of Gödel's incompleteness theorems—that axiomatic mathematical systems (those dependent on definitionally self-evident propositions) are inherently limited because there will always be something more to be known about any individual entity, that is, they are definitionally incomplete—(Gödel, 1962). As applied to formal logic (Lonergan, 1968, pp. xxv, xxvi), this suggests that in a propositional set (*P, Q, R, S*...), any assumed definition of *"P"* would immediately require relational assumptions concerning the nature of *"Q,"* which would further require relational assumptions concerning the meaning of *"R,"* and so forth, for as many elements as remain. "Every definition presupposes another term" (p. 11). If applied to the definitional correspondence in connotation between individuals, in the active process of forming an implication or inference there would necessarily be assumptions concerning the properties of *"Concept P,"* which would then influence (and be influenced by) the assumptive relational properties of *"Concept Q,"* and so forth, until the end of the statement. The balancing act would be the continual adjustment of the meaning of each subsequent concept (*P, Q, R*...) so as to keep to the path of the "supposed" emerging inference (discernment by intuition and reason). Thus, we are dealing not only with a series of concepts (the *noêma*)—which are going to be, to some degree, incomplete— but also with the noêtic process of metacognition (*noêsis,* or the necessary awareness, analysis, and regulation of the thinking process) as the implication or inference is being formed.

This would seem to make the communication of even the simplest of ideas a highly speculative business; yet, we routinely express complex thoughts and with a great deal of success. In fact, high resonance exchanges (involving closely matched idiosemantics) can result

in the rapid transfer of large chunks of information through obscure allusions, philosophical statements, or abrupt leaps to conclusions in which the sentences presenting the flow of thought may even be fragmented or skipped altogether.

Figure 9. The Third Order Semantic (Connotation) in Matrix Form.

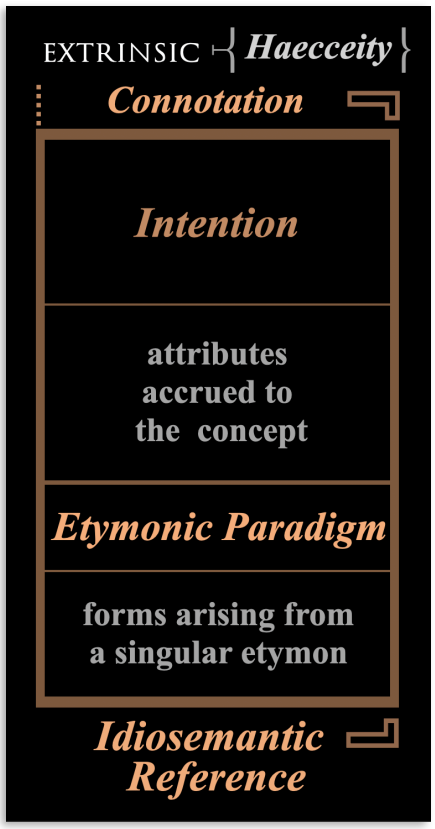


Figure 9. The *Discourse Semantic*. The semantic end-state of intension (perceived essence) is intention (the way it is to be understood). *Intention* represents the total of attributes accrued to a concept (its primary denotation) absent *connotation* (implicational meaning). An etymon with all of its derivative forms constitutes an *Etymonic Paradigm*. When *Intention* and *Connotation* are combined, the result is an *Idiosemantic Reference* (the total meaning associated with a word by an individual). The *Idio-* in *Idiosemantic* refers to connotational meaning formed in the *Second Order Semantic*. The Idiosemantic is the (mental) reference used by the individual as the *Discourse Semantic* when constructing implication or inference. Thus, the intended meaning will potentially be present in both implication and inference, but will be limited to the degree of correspondence between individual connotations.

Figure 10. Semantic Resonance.

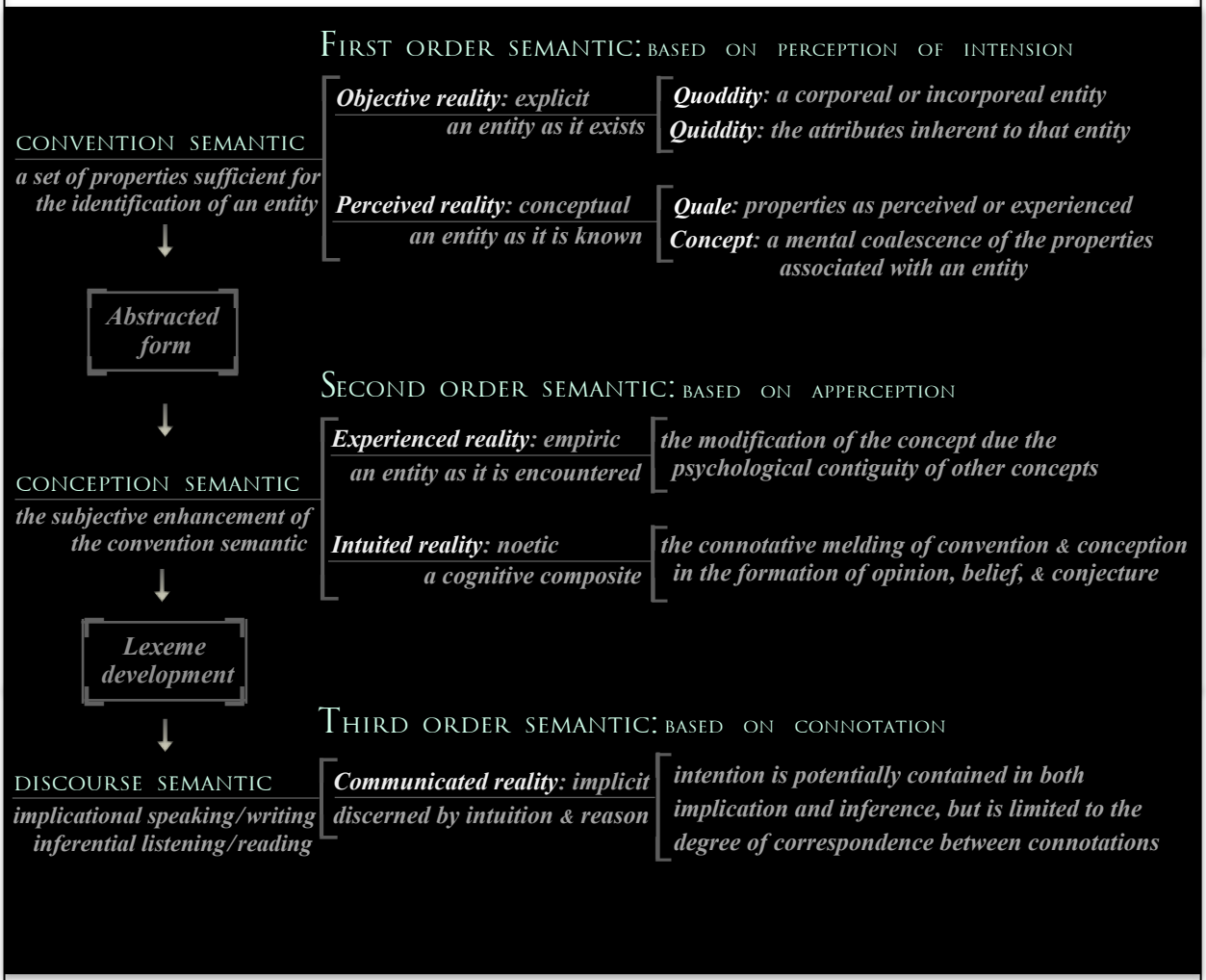


Figure 10. Full presentation of the semantic orders. *Semantic Resonance* and the lexeme development taking place in consequence of the *Semantic Differentiae* are concurrent and parallel processes which ultimately determine the semantic content (the *Idiosemantic reference*) of an implication or an inference being made by an individual.

Illatives

> God, that all-powerful Creator of nature and architect of the world, has impressed man with no character so proper to distinguish him from other animals, as by the faculty of speech. (Quintilianus, 95 AD, *Institutio Oratoria*, II.4., trans. 1921.)

What should be drawn from all of this can be stated as a series of postulates that describe the concepts purported by this theory.

(a) Objective reality consists of the corporeal, incorporeal, and rational entities in the universe;

(b) All objective realities bear quiddity, that is, they have an innate nature or intension;

(c) Certain aspects of quiddity are assessable to sensory or rational perception;

(d) Our mental conception (concept) of an entity is based on our perception of its quiddity;

(e) Lexical and sublexical elements are sensate reductions of the intension innate to, or associated with, a concept;

(f) At the sublexical, lexical, or sentential level, implicational and inferential meaning is a melding of objective and subjective intension;

(g) Thought is the parsing and pondering (analysis) of concepts;

(h) Analysis is the reduction and restatement (in a simpler, organized form) of complexity;

(i) Our conceptions are modified by their physical/temporal/mental proximity to other concepts;

(j) When concepts are abstracted to a sensible form, they can be ordered so as to capture and preserve thought; thus,

(k) A sentence is simply a concatenated series of concepts, con-*figured* to describe a thought;

(l) Discourse Semantics are the meanings used in the construction of implication or inference;

(m) Discourse is the analysis of a series of concepts in the process of constructing implication or inference;

(n) Context is anything that accompanies a etymon (affixes, other words, other sentences);

(o) Sense meaning is the product of the mutual influence of concepts presented in context;

(p) Analogy is a natural means of description;

(q) Analogies are creative representations used in describing thought;

(r) Analogues are the natural instrument for conveying complex concepts;

(s) Derivatives are figurative re-presentations of more primitive forms;

(t) Analogues are the dominant feature of natural language semantics;

(u) Natural language semantics accrue from multiple sources;

(v) Analogy is the principle source of lexical expansion (the growth of the lexis);

(w) Apperception is the chief determinant of *idiosemantic reference*; thus,

(x) Idiosemantic reference (between individuals) will either be an enabler or a barrier to comprehension because;

(y) All linguistic expression is intuitive because all linguistic expression is the abstracted analogy of apperceived intensions used in the description of thought; and finally,

(z) The nature of language is no more conducive to the rigid, syllogistic treatment of the hard sciences than a painting or a piece of music would be.

IV
PRECIS

There is much more to be said about the Second and Third Order Semantic, and there exist a Fourth and a Fifth. The next quantitative step in this study (and there are not many) would be to further shore the purport of illatives *s, t,* and *v*—from the list on pages 35 and 36— by tracing the analogical development of the Latin cognate *cur* to its Proto-Indo-European origin and to create a table of derivative forms and senses, progressing through the Indo-European languages in the Latin lineage (including the Classical Greek contributions), to Classical Latin, then forward through Medieval Latin, Middle English, Early Modern English, and Modern English. This was originally planned to be included in this study, but such a massive undertaking would have been time prohibitive, and it is probably better suited as a stand-alone study of the lexical complexity and expansion discussed in this dissertation.

On the qualitative side, a deeper look should be taken of the second order cognitive process of *Apperception* in the creation of connotations (illatives *d, i, w, x,* and *y*). I believe this to be fertile ground for research into understanding the semantic disconnects arising from culturally-based attitudes toward language use and its impact on the classroom as well as society at large.

Theories should be predictive. If they are not, then they are not very good theories. To theory in general, we could say that if what is purported theoretically bears out heuristically, then we have something to work with. As to the interface of this particular theory with curriculum

research and design, each of the 26 illatives—all heuristically based—and any of them in combination, represents a research area with potential implications for language arts instruction. For instance, one of the more intriguing aspects of Differential Semantics concerns the mind's natural use of figures in both common and creative expression (illatives *p* and *r*). Is it not interesting that all thought is analogical (illatives *g*, *h*, and the Second Order Semantic, p. 22), all implication and inference is analogical (illatives *j*, *k*, and the Third Semantic Order, Figure 10), analogues are the dominant feature of natural language semantics (illatives *s, t, v,* and figures A2 and A3), and that this evidently *natural propensity* in the use of figures is prerequisite to comprehension (Hamilton, 1836; Irwin, 1991; Sweet & Snow, 2003; Thompkins, 2010, pp. 257-258)? I am not aware of any research that has connected this particular series of dots. I think it is going to be significant, and it will be my next tack in pursuing the clinical application of Differential Semantics to the language arts classroom.

Differential Semantics has reached a fork in the road. The philosophical path continues with the *Fourth* and *Fifth Order Semantic*, while the educational path begins exploring practical application. I have already begun preliminary work on the Fourth and Fifth Orders. The *Fourth Order Semantic* is *Synthesized reality.* It concerns the semantic import of the fine arts. Dance would be the most easily relatable, because it is physical, it has movement, and a dancer is person. Painting is much less accessible, though, I think impressionistic paintings are a good analogy of the thought processes described in this paper.

Music, however, is the most elusive (regardless of genera), partly because of it's transience, but mostly because of its complexity. Even the Bach, Two-part Inventions (standard fare for any piano student) are still complex three hundred years later. Understanding one movement of a

Brahms symphony would be the equivalent of writing another dissertation. Much easier to study, and more analogous to language, would be musical product of a jazz trio (piano, bass, and drums).

The uniqueness of jazz musicians lies in the sophistication of their "vocabulary," and the fact that they are engaged in a continuous "conversation," even if only one person is actually playing. The conversation is a "high resonance," spontaneous, "contextualized" interaction of the rhythmic and harmonic contributions of its members. The *Harmonic Vocabulary,* however, will be the focus of the study (after all, *Differential Semantics* is about semantics).

The jazz vocabulary is exceedingly figurative—In the Figure 7 matrix, it would lie beyond the Metasemantic category of linguistic phenomena. The study will involve harmonic relationships within a harmonic series (mathematically calculable, but nonetheless pleasing to the ear), which, in various combinations, can suggest the presence of certain other pitches (that are in some way related), even though they are not being played—somewhat like the psychological contiguity in the *Second Order Semantic*. An important element of the study involves what (as a harmonic presentation) can be left "unspoken," but yet subtly "fragrance" and "nudge" the conversation. That this level of communication actually exists is evidenced by the fact that each musician recognizes the subtleties in the "conversation" and responds to the "nudges."

Conclusion

> "Son, everything you want to know is written down somewhere." (W. C. Cox, personal communication, c. 1964).

The human mind is the repository of acquired knowledge (the *First Order Semantic*). Within its functions are the ability schematize logical and conceptual relations by the reduction and

restatement of complexity (the *Second Order Semantic*), and then to abstract that complexity to sensate, analogical representations (the *Third order semantic*). All of human communication and the sum total of its meaning derives from the nature of reality, our understanding of that nature, and our thoughts in regard to our understanding. In the affairs of mankind, nothing has been more consequential to the human condition than the ability to communicate thought. Therein lies the means to preserve the accumulated knowledge, understanding, and wisdom of the greatest minds in human history for the generations yet born.

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LIST OF APPENDICES

Appendix A
Derivatives of the Latin Cognate *cur/curr* from 205 BC - 200 AD

The data in this appendix were compiled using the *Etymological dictionary of Latin and the other Italic languages (EDL),* the *Oxford Latin dictionary (OLD),* and the University of Texas Linguistics Research Center. Figure A1 (p. 51) is an explanation of the organization of Figure A2. Figure A2 (pp. 52-54) documents the earliest extant instances of the reflexes (derivatives) and senses of the Latin cognate *cur/curr* by their appearance in Roman literature. Figure A3 (pp. 55-56) is a summary of Figure A2, by author and literary period.

The purpose of these figures is to demonstrate (as discussed on page 26) the etymological mechanism that is the source of the semantic complexity found in the literate registers. Figure A2 documents the diachronic formation of an etymonic paradigm—based on the cognate *curr*—as the product of the figurative use of more primitive forms.

FIGURE A1: KEY FOR FIGURE A2.

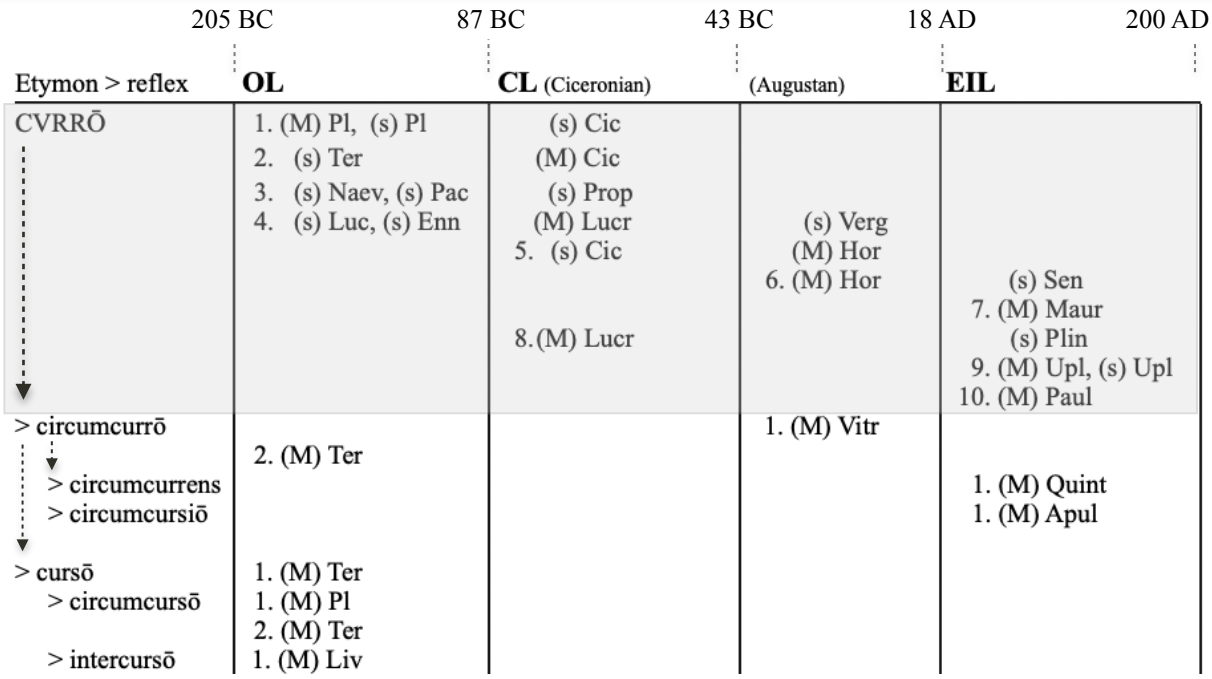

Figure A1. Symbols and organization of Figure A2.

Column one lists derived lexemes. Indentions show lineage of derivatives—(>) derived from. Numbered items are main sense (M) entries. Secondary senses are indicated as (s). For example, the etymon Curr (shaded area) has 10 Main senses and 13 secondary. Note that there is no example of the main sense of entry 3. The first derivative (circumcurro) has two main senses. Two more reflexes (indented and preceded by >) derive from circumcurro. This is an example of the recursion discussed on p. 27. Literary periods are (OL) Old Latin, (CL) Classical Latin, and (EIL) Early Imperial Latin. Figure 13 is a key to the author abbreviations and a summary of Figure 12.

FIGURE A2. EARLIEST EXTANT INSTANCE OF DERIVATIVES AND SENSES OF THE LATIN COGNATE *CUR/CURR* IN ROMAN LITERATURE.

Etymon > reflex	**OL**	**CL** (Ciceronian)	(Augustan)	**EIL**
CVRRŌ	1. (M) Pl, (s) Pl	(s) Cic		
	2. (s) Ter	(M) Cic		
	3. (s) Naev, (s) Pac	(s) Prop		
	4. (s) Luc, (s) Enn	(M) Lucr	(s) Verg	
		5. (s) Cic	(M) Hor	
			6. (M) Hor	(s) Sen
				7. (M) Maur
		8. (M) Lucr		(s) Plin
				9. (M) Upl, (s) Upl
				10. (M) Paul
> circumcurrō			1. (M) Vitr	
	2. (M) Ter			
> circumcurrens				1. (M) Quint
> circumcursiō				1. (M) Apul
> cursō	1. (M) Ter			
> circumcursō	1. (M) Pl			
	2. (M) Ter			
> intercursō	1. (M) Liv			
				2. (M) Plin
> cursitō	1. (M) Ter			
> currus	1. (M) Naev, (s) Acc	(s) Cic		
	(s) Enn, (s) Enn			
		2. (M) Catul		
		3. (M) Cic		
> curruliūs				1. (M) Paul
> cursus	1. (M) Pl		(s) Verg	
	2. (M) Luc	(s) Cic, (s) Cic		
	3. (s) Pl	(M) Cic,		
		(s) Cic, (s) Cic		
	4. (M) Enn	(s) Cic		
	5. (s) Acc	(M) Cic		
		6. (M) Cic, (s) Lucr		
	7. (M) Acc	(s) Cic, (s) Cic		
		8. (M) Cic, (s) Cic		
		9. (M) Cic		
		10. (M) Cic		
> cursim	1. (M) Pl, (s) Pl			
> cursiō		1. (M) Var		
> cursor	1. (M) Pl, (s) Pl	(s) Nep	(s) Petr	
> cursūra	1. (M) Pl			
> curax				1. (M) Gaius
> curriculum	1. (M) Pl	(s) Cic.		
		2. (M) Cic		
	3. (M) Pl	(s) Var		(s) Apul
		4. (M) Cic, (s) Cic		
		5. (M) Var		
> accurrō	1. (M) Ter,			
	(s) Pl, (s) Pl			
				2. (M) Tac
				3. (M) Stat
> accursus				1. (M) V. Max
				2. (M) Plin.
> antecurrō				1. (M) Apul
> antecursor		1. (M) Caes		
> dēcurrō		1. (M) Caes	(s) Vitr	(s) Sen
		2. (M) Lucr		(s) V Fl
	3. (M) Man			
		4. (M) Cic, (s) Cic		(s) Tac, (s) Curt
		(s) Petr	5. (M) Ov	(s) Mela

Etymon > reflex	**OL**	**CL** (Ciceronian)	(Augustan)	**EIL**
> decurro (cont)	7. (M) Liv 8. (s) Pl	(M) Cic, (s) Cic 9. (M) Cic	6. (M) Ov	
> dēcursiō			1. (M) D. Brut	2. (M) Suet
>decursus		1. (s) Cic 2. (M) Catul 3. (M) Lucr,	(M) Petr (s) *B. Hisp.*	(s) Sen 4. (M) Plin
> discurrō	1. (M) Caes		(s) Ov 2. (M) Ver, (s) Ov	
> discursus	1. (M) Liv		(s) Liv	2. (M) Sen, (s) Plin 3. (M) Sen
> discursō				1. (M) Quint
> discursātiō				1. (M) Fron
> excurrō		1. (s) Var	(M) Liv	
(s) Curt	2. (M) Pl (s) Scaur	(s) Cic	3. (M) Vitr	4. (M) Quint 5. (M) Sen
> excursiō		1. (M) Cic		(s) Quint 2. (M) Plin, (s) Quint
> excursor		1. (M) Cic		(s) Apul
>excursus		1. (M) Caes 2. (M) Ver		(s) Sen, (s) Quint 3. (M) Quint 4. (M) Plin
> excursō				1. (M) Stat
> incurrō	1. (M) Liv	(s) D Brut 2. (M) Cic 3. (M) Cic, (s) Cic, (s) Cic 4. (M) Cic 5. (M) Cic, (s) Cic		(s) Sen, (s) Mart
> incursim	1. (M) Caecil			
> incursiō		1. (s) Caes, (M) Cic 2. (M) Cic		
> incursus		1. (M) Cic	(s) Ov 3. (M) Ov	(s) Plin 2. (M) Mela
> incursō	1. (M) Pl, (s) Liv		3. (M) Ov	2. (M) Stat, (s) Plin (s) Quint
> incursitō				1. (M) Sen 2. (M) Sen
> intercurrō	1. (M) Liv	2. (M) Lucr		(s) Plin
> intercursus	1. (M) Liv			
> introcurrō	1. (M) Naev			
> occurrō	2. (M) Liv	(s) Cic 3. (M) Cic, (s) Cic	1. (M) Brut	
	5. (s) Luc	4. (s) Cic (M) Galba		(M) Mela, (s) Plin, (s) Sen
	7. (M) Pl,	6. (M) Cic, (s) Cic (s) Caes	8. (M) Ver	(s) Phaed

Etymon > reflex	OL	CL (Ciceronian)	(Augustan)	EIL
> occurrō (cont)		9. (M) Cic		
		10. (M) Cic		
> occursus			1. (s) Balb, (M) Vell	(s) Curt, (s) Sen
			2. (M) Ov	(s) Plin
			3. (M) Ov	
> occursōrius				1. (M) Apul
> occursō	1. (M) Pl, (s) Liv			(s) Plin
				2. (M) Tac, (s) Plin
				3. (M) Plin, (s) Plin
				4. (M) Plin
> occursātiō		1. (M) Cic		
> occursaculum				1. (M) Apul
> percurrō	1. (M) Ter			(s) Aetna
		2. (M) Lucr		(s) Apul
	(s) Liv	3. (M) Lent		(s) Plin
		4. (M) Lucr		
		5. (M) Cic, (s) Cic		
> percursiō		1. (M) Cic		
> persursō				1. (M) Tac
> percursatiō		1. (M) Cic		
> praecurrō	1. (M) Pl			(s) Sen
				2. (M) Sen
		3. (s) Lucr		(s) Col, (s) Col
		4. (M) Cic		(s) V Max
> praecursiō		1. (M) Cic, (s) Cic		
> praecursor				1. (M) Plin
> praecursōrius				1. (M) Plin
> praecursus				1. (M) Plin
> prōcurrō		1. (s) Caes, (s) Catul	(M) Ver	
				2. (M) V Max
			3. (M) Ver	
> prōcursiō				1. (M) Quint,
				2. (M) Quint
> prōcursus			1. (M) Ver, (s) Ver	(s) V Max
				2. Plin
> prōcursō	1. (M) Liv			
> prōcursatiō	1. (M) Liv			
> prōcursātor	1. (M) Liv			
> recurrō	1. (M) Pl		(s) Ver, (s) Ov	(s) Sen
			2. (M) Hor	
			3. (M) Hor	(s) Plin
		4. (M) Cic		
				5. (M) Quint
				6. (M) Col
> recursō	1. (M) Pl	(s) Lucr		
			2. (M) Ver	
> recursus			1. (M) Ver, (s) Ver	(s) Plin
			2. (M) Ov	
				3. (M) V Max
> succurrō		1. (M) Lucr		
		2. (M) Cic		
		3. (M) Cic, (s) Cic	(s) Prop	(s) Gaius
				4. (M) Cels, (s) Plin
		5. (M) Cic	(s) Vitr	
> succursor				1. (M) Col
> transcurrō	1. (M) Pl		(s) Hor	
		2. (M) Caes, (s) Lucr		(s) Plin
				3. (M) Sen
				4. (M) Apul, (s) Sen
				5. (M) Sen
		6. (s) Cic		(M) Sen
> transcursus	1. (M) Liv			
			2. (M) Vell	

FIGURE A3. AUTHOR LIST AND SUMMARY OF DERIVATIVE PRODUCTION BY AUTHOR AND LITERARY PERIOD.

Author			Figurative senses	Period
Old Latin		205 BC		118 years
Liv	Livius Andronicus	(c. 285 — c. 205)	10/4 (M/s)	
Naev	Cn. Naevius	(c. 270 — after 206)	2/1	
Pl	Plautus	(before 250 — 184)	16/8	
Enn	Ennius	(239 — 169)	1/2	
Caecil	Caecilius Statius	(— 168)	1/0	
Pac	Pacuvius	(c. 220 — 130)	0/1	
Ter	Terence	(195/194 — 159)	5/1	
Luc	Lucilius	(c. 180 — 103/102)	1/1	
Acc	Accius	(170 — c. 80)	1/3	
Scaur	Aemilius Saurus	(c. 163 — 89)	1/1	38/22
Classical Latin		87 BC		105 years
Var	Varro	(c. 116 — c. 27)	2/2	
Nep	Cornelius Nepos	(c. 110 — after 27)	0/1	
Cic	M. Tullius Cicero	(106 — 43)	36/28	
Caes	Julius Caesar	(102 or 100 — 44)	4/3	
Lucr	Lucretius	(c. 100 — c. 55)	8/4	
Catul	Catullus	(c. 84 — c. 54)	2/1	
Vitr	Vitruvius	(c. 75 — c. 10)	1/1	
Verg	Vergillius	(70 — 19)	7/4	
Hor	Horace	(65 — 8)	4/0	
Liv	Livy	(c. 59 BC — 17 AD)	3/0	
Prop	Propertius	(c. 50 - 47 BC — c. 16 BC)	0/2	
Ov	Ovid	(43 BC — 17/18 AD)	6/4	73/50

(FIGURE A3 CONTINUED)

Author			Figurative senses	Period
Early Imperial Latin		18 AD		113 years
Curt	Curtius Rufus	(early first century)	0/2	
Cels	Celsus	(c. 25 BC — 50 AD)	1/0	
Vell	Velleius Paterculus	(c. 17 BC — after 30 AD)	1/0	
V Max	Valerius Maximus	(c. 31 — 32 AD)	3/2	
Sen	Seneca the Younger	(c. 1 BC — 65)	9/10	
Petr	Petronius	(c. 5 AD — 66)	1/1	
Quin	Quintiliannus	(35 — c. 96)	7/4	
Col	Columella	(c. 40 —)	2/2	
Mart	Martial	(c. 40 — c. 104)	0/1	
Stat	Statius	(c. 45 — after 96)	3/0	
Tac	Tacitus	(c. 55 — after 117)	3/1	
Plin	Pliny the Younger	(61/62 — c. 113)	11/15	
Aetna	(Unknown)	(before 63)	0/1	
Seut	Suetonius	(c. 70 — after 130)	1/0	
Balb	Balbus	(Trajanic era)	0/1	
Gaius	Gaius	(110 — c. 179)	1/1	
Apul	Apuleius	(c. 124 — C. 170)	4/3	
____	Obscure	(Period)	9/5	56/49

Figure A3. Summary. Figure 12 documents 70 reflexes (derived from earlier forms) in 288 (figurative) senses based on the Latin cognate *cur/curr.* Of these 288 senses, 227 do not appear in extant sources prior to 87 BC, suggesting that these are not carryovers from Old Latin or Greek, but rather, represent new lexemes (or derivative forms). Note the dramatic rise occurring during the so named *Golden Age of Roman Literature* (the Ciceronian and Augustan periods, also referred to as Classical Latin) with new lexemes more than doubling (from 60 during the 118 year period of Old Latin to 123 during the Classical). The increasing sophistication of Roman literature was accompanied by an increasing sophistication in the use of figurative language, thus adding to both the size and the semantic complexity of the lexis.

Appendix B
Glossary

accidence - *Grammar*. With reference to *Lemma*: The grammatical properties of a word (such as number, case, mood, tense, etc.); something that does not constitute an essential component; an attribute (p. 24; Figure 7, Semantic Matrix, p. 25).

adscititious occurrents - *Coinage.* With reference to *Semantic Differentiae*: Meaning added or derived from external sources through etymologically significant events (p. 24; Figure 7, Semantic Matrix, p. 25).

aesthetic interfusion - *Coinage.* With reference to *Semantic Differentiae*: The creative melding of imageries (p. 28).

analogous presentation - With reference to *Semantic Differentiae*: The use of figurative equivalence for purposes of illustration, interpretation, reasoning, or argument; the source of sense meaning (p. 26; Figure 7, Semantic Matrix, p. 25).

analogue - *Philosophy.* With reference to *Semantic Differentiae*: A thing which is analogous to another being used as a basis for reasoning or argumentation (p. 26; Figure 7, Semantic Matrix, p. 25).

apperception - *Psychology.* With reference to the *Second Order Semantic*: A psychic-cognitive function (an activity of the mind that processes physical and mental perceptions) that continuously modifies existing concepts in consequence of their *psychological contiguity* (perceived associations by virtue of physical or temporal proximity) to other concepts or experiences (p. 21; Figure 7, Semantic Matrix, p. 25).

applied subset - *Coinage.* With reference to the *First Order Semantic*: A *Convention Semantic* in combination with one or more less prominent properties, usually associated with professional knowledge (physiological or psychological properties, for instance) (p. 19).

artifacts - *Linguistics*. With reference to *Semantic Differentiae*: A word derived by development from an earlier form (p. 27; Figure 7, Semantic Matrix, p. 25).

belletristic mise-en-scène - *Coinage.* With reference to *Semantic Differentiae*: The creative (artistic) use of words in highly figurative contexts (p. 28; Figure 7, Semantic Matrix, p. 25).

categorematic - *Logic.* With reference to *Lemma*: Words the are significant by themselves, as opposed to *syncatogorematic* (articles, conjunctions, prepositions, etc.): words whose significance depends on other words.

categorematic attributives - *Grammar.* With reference to *Lemma*: Words representing attributes of substances (verbs, verbals, & adjectives) and attributes of attributes (adverbs).

categorematic substantives - *Grammar.* With reference to *Lemma*: Words representing substance (nouns and pronouns).

conceits - *Literary*: With reference to *Semantic Differentiae*: Words used in a *Metasemantic* sense (p. 28; Figure 7, Semantic Matrix, p. 25).

concept - *General.* With reference to the *First Order Semantic*: An intellectual apprehension of of a concept based on its perceived essence (p. 2).

conjoint context - *Coinage.* With reference to *Semantic Differentiae*: The immediate context represented by the sublexical elements comprising the word, including flectional and derivational affixes (p. 2; Figure 7, Semantic Matrix, p. 25); *Cf. proximal context.*

connotation - *Philosophy & Logic.* With reference to *Differential Semantics*: The intrinsic, extrinsic, and implicational meaning of a word; Meaning derived from the analytic and synthetic melding of objective and subjective meaning (p. 24, Figure 7, Semantic Matrix, p. 25).

convention semantic - *Coinage.* With reference to the *First order semantic*: A subset of properties accepted by a language community for the identification of an entity (p. 17; Figure 10, Semantic Resonance, p. 34).

coteriean lexicalization - *Coinage.* With reference to *Reflexes*: the accession of a new analogical form (lexeme) to the lexis of a language community (p. 27; Figure 7, Semantic Matrix, p. 25).

derivational expansion - The growth of language by the production of derivative forms.

derived lexemes - Word forms arising from earlier, more primitive forms.

differential semantics - *Coinage*. A noetic, integrate model (a composite of noumena and phenomena that account for the larger patterns of semantic complexity in natural language) that addresses natural language semantics from two interrelated perspectives: (a) *Semantic Differentiae*—the sources of semantic complexity—and (b) *Semantic Resonance*—the correspondence of connotation between individuals) (p. 16, Figure 7, Semantic Matrix, p. 25).

etymon - *Linguistics*. With reference to the *First Order Semantic*: The enascent form and meaning of a lexical or sublexical entity; a sensible, abstract reduction of the intension associated with a concept (Figure 7, Semantic Matrix, p. 25)

etymonic paradigm - *Coinage.* With reference to *Intention*: The total semantic import of all lexical forms deriving from an a single etymon (pp. 6, 29; Figure 7, Semantic Matrix, p. 25).

etymonic singularity - *Coinage.* With reference to *Intension*: The base form of an *etymonic paradigm* (p. 6).

extrinsic - With reference to the *Differential Semantics*: Meaning accrued from external sources (*semantic differentiae*) (p. 24, Figure 7, Semantic Matrix, p. 25).

first order semantic - *Coinage.* With reference to *Semantic Resonance*: Meaning derived from the innate properties (*Intension*) of corporeal, incorporeal entities in the formation of concepts (p. 17; Figure 10, Semantic Resonance, p. 34).

haecceic subset - *Coinage.* With reference to *Intension*: A combination of the *Convention Semantic* plus the discrete properties that make a thing describable as "individual" (p. 18; Figure 10, Semantic Resonance, p. 34).

haecceity - The discrete properties that make an entity a particular entity.

idiosemantic enhancement - *Coinage.* With reference to *Apperception*: The subconscious melding of objective and subjective meaning taking place within the *Second Order Semantic* (p. 21, Figure 7, Semantic Matrix, p. 25).

idiosemantic reference - *Coinage.* With reference to the *Third Order Semantic:* Connotations unique to the individual (Figure 7, Semantic Matrix, p. 25).

illative - *General.* Conclusions logically arising from inference.

implication - *Linguistics & Philosophy.* With reference to the *Third Order Semantic:* The description of a thought through a complex mix of analogue, connotation, and context (p. 30; Figure 7, Semantic Matrix, p. 25).

inference - *Linguistics & Philosophy.* With reference to the *Third Order Semantic*: The recreation of a thought through a complex mix of analogue, connotation, and context (p. 30; Figure 7, Semantic Matrix, p. 25).

intension - *Logic.* With reference to the *First Order Semantic*: Intrinsic meaning; the properties innate to an entity (p. 24; Figure 7, Semantic Matrix, p. 25).

intention - *Linguistics.* With reference to the *Third Order Semantic*: Intrinsic and extrinsic meaning absent implication (p. 24; Figure 7, Semantic Matrix, p. 25).

intrinsic - With reference to the *Differential Semantics*: Innate meaning (p. 24, Figure 7, Semantic Matrix, p. 25).

lemma - *Linguistics.* With reference to a word: The canonical (citation) form together with all of its inflected forms.

lemmatical - *Linguistics*. With reference to a *Semantic Differentiae*: Pertaining to the grammatical variation of inflected forms (accidence); Grammatical variations in *Categorematic Substantives* (nouns and pronouns) and *Attributives* (primary: attributes of substances—verbs, verbals, & adjectives; secondary: attributes of attributes—adverbs) reflecting number, gender, person, case, voice, mood, and tense in order to accommodate the context of a presentation (p. 24, Figure 7, Semantic Matrix, p. 25).

lemmatiscence - Coinage. With reference to a word: The semantic gain brought about by inflection form in addition to that of the canonical form.

metasemantic - *Coinage.* With reference to *Semantic Differentiae*: Meaning resulting from the aesthetic interfusion of a concept into an artistic setting; an amalgam of setting, imagery, and an aesthetic commingling of concepts (p. 28; Figure 7, Semantic Matrix, p. 25).

noesis - *Philosophy.* the subjective aspect of an intentional experience.

noetic - *Philosophy.* Intellectually intuitive.

non-linguistic augmentation - With reference to Apperception: The melding of objective and subjective meaning (Figure 7, Semantic Matrix, p. 25).

noumena - *Philosophy.* With reference to *Semantic Differentriae*: A cognitive event that alters the semantic import of a concept. (p. 24; Figure 7, Semantic Matrix, p. 25); *Cf. phenomena.*

phenomena - *Philosophy.* With reference to *Semantic Differentiae*: An empirical event that alters the semantic import of a concept (p. 24; Figure 7, Semantic Matrix, p. 25); *Cf. noumena.*

pragmatic consequents (*n*) - *Coinage*. With reference to *Differential Semantics*: Word forms and semantics that emerge as a matter of practicality.

proximal context - *Coinage*. With reference to the *Third Order Semantic*: The larger frame of contextual reference (accompanying words, sentences, paragraphs) (p. 2; Figure 10, Semantic Resonance, p. 34); *Cf. conjoint context.*

psychological contiguity - *Psychology.* With reference to the *Second Order Semantic*: The perceived association of appositive concepts (by physical or temporal proximity) whereafter, one subconsciously recalls the other (p. 21; Figure 10, Semantic Resonance, p. 34).

qualitive subset - *Coinage.* With reference to the *First Order Semantic*: An abbreviated set of properties—*subset* of the *quiddative set*, composed of *qualia* (properties as they are perceived)—that have emerged as a *Convention Semantic.* There are two types of qualitive subset: *haecceic* and *applied* (p. 17; Figure 10, Semantic Resonance, p. 34).

quiddative set - *Coinage.* With reference to the *First Order Semantic*: A comprehensive set of the properties that constitute are innate to an entity (p. 17; Figure 10, Semantic Resonance, p. 34).

reflex - *Linguistics*. With reference to *Semantic Differentiae*: A word derived by development from an earlier form.

reflexive - *Coinage.* In reference to *Semantic Differentiae:* The adjectival form of *reflex* (p. 27; Figure 7, Semantic Matrix, p. 25).

s**econd order semantic** - *Coinage.* With reference to *Semantic Resonance*: Meaning derived from the analytic and synthetic melding of objective and subjective meaning (connotation) in the formation of opinion and belief; the product of intuitive reflection (p. 21; Figure 10, Semantic Resonance, p. 34)

semantic differentae - *Coinage.* With reference to *Differential Semantics*: A description of the accrual of meaning to a concept as the consequence of outside events (p. 24; Figure 7, Semantic Matrix, p. 25).

semantic resonance - *Coinage.* With reference to *Differential Semantics*: A description of the formation of *idiosemantic reference* (p. 16; Figure 10, Semantic Resonance, p. 34).

semantic stasis - *Coinage.* With reference to *Reflexes*: The theoretical, synchronistic point in the life of a new lexeme (derivative) at which the meaning of the word is assumed (by lexicographers) to have a fixed meaning and is admitted, as such, into the lexicon (p. 29).

sensate representation - a sign that is perceptible or perceived by the senses.

sign - *Linguistics.* Anything sensible that can be construed as conveying meaning; (in *Differential Semantics*), an abstracted representation of the properties of a concept.

subjective intension - *Coinage.* With reference to the *Second Order Semantic*: The connotative melding of convention and conception semantics (Figure 10, p. 34).

subjective subset - *Coinage.* With reference to *Apperception*: Any of the qualitive subsets (haecceic or applied) of the quiddative set of properties innate to an entity. Note that all subsets are subjective (p. 22).

synchronic - *Linguistics.* (F. de Saussure *a*1913, in *Cours de linguistique générale* [1916] iii. 117). Pertaining to a method of linguistic study concerned with the state of a language at one time, past or present; descriptive, as opposed to historical or diachronic (p. 29).

t**hird order semantic** - *Coinage.* With reference to *Semantic Resonance*: Meaning derived from analogical relationships in the formation of an implication or an inference (p. 16; Figure 10, Semantic Resonance, p. 34).

trope - *Rhetoric*. With reference to *Semantic Differentiae*: A figure of speech in which there is a figurative "repurposing" of the meaning of a word for purposes of illustration or explanation; (in *Differential Semantics*), the importation of the meaning resident in a word into an unrelated context; the semantic differential that is the source of the growth and complexity of natural language (p. 26; Figure 7, Semantic Matrix, p. 25).

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National Defense Service Medal (3rd award)
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