

GRASSMANN, SAUSSURE, AND STATIONARY LINGUISTIC SYSTEMS

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Thus in the course of our peregrination we will often traverse the most unexplored regions of Indo-European linguistics. If nonetheless we set out, though convinced in advance that our inexperience will often lead us into a maze, it is not recklessness, as is often said, that compels anyone who occupies himself with these studies to attack such questions: rather it is a necessity, it is the first school one must pass. For the question is not one of speculations of a transcendent order but of research into elementary facts without which everything drifts, everything is arbitrary and uncertainty (Saussure 1878).

Abstract

The Neohumanists of the Protestant Reformation sought to relate Humanism and Science within a policy of public education. In the battle against the fractal Idealism of Stationary Linguistic Systems, Part 4 of this five part series traverses elementary facts connecting Hermann Grassmann and Ferdinand de Saussure selected from the Notebooks of Emile Constantin taken during the Troisieme Cours de Linguistique Generale (1910-1911) and expands upon some of the elementary implications of a vector system within a renewed Neohumanist Protestant Reformation.

Decoupled from Nature and Time, the idealism of Stationary Linguistic Systems provides the rhetorical cloak of ceremonial protocol and magical efficacy (Malinowski 1978) by which institutions occupied by state elites justify a legitimating language of rationality and violence (Weber 1919; Elias 1983; Bourdieu 1991). Analysis, knowledge representation, mechanisms of control, and notions of Order and Reason disconnected and disembodied from emotional and empirical 'reality-congruence' (Elias 1983; Damasio 1994; Goleman, 1995, 1998) and the human condition lead to blind, unintended processes over intentional procedures, which, in turn, provides the mechanism prompting and provoking alienization, marginalization, and radicalization in its victims.

One state elite that has seized the legitimating language of Modern Stationary Linguistic Systems as a rhetorical cloak for their abuse, indulgences, and wrongdoing

is the Court Society of Judiciary and its legal industry. The vectorial management systems of Grassmann coupled to the Wave Mechanics of Saussure provide a safe, stable, and substantive applied alternative to Judiciary and its legal industry on the advent of the 500th anniversary of the Protestant Reformation.

Keywords

Computation, Reboot, Recursion, Redundancy, Relational Database, Repair, Resend.

1 Introduction

As the 500th celebration of the Protestant Reformation approaches, the fourth paper in this five-part set on the Stationary Linguistic System examines the connectivity between Hermann Gunter Grassmann (1809-1877) and Ferdinand de Saussure (1857-1913) against the backdrop of the Protestant Reformation. In the mode of the Humanists Petrarch (1304-1374), Lorenzo Valla (1406-1457); and Rudolph Agricola (1444-1485), the focus is upon neglected writings from the past by checking their potential relevance against the current situation. However, the primary target still remains the counter-intuitive properties of stationary systems displayed in analysis, manuscript, and text. For this, *The Fractal Nature of Geometry* (Mandelbrot 1977, 1982, 1983) remains the great masterpiece wherein he coined the term "Elusive Continent" (Page 121). The "Elusive Continent", its fractal shorelines, and the lacunar universe are the true home of Humanity.

Brief samples from the Corpus of the Rational-Legal selected from the Old World Order of the Court Society, Judiciary, and the legal industry - what Weber (1919) called legitimized violence and Moore called the Persecuting Society (1987) - provide small representations of the phenomena of disabled grammars and the dancing Dedekind Dot.

2 Historical Background

In 1517 Martin Luther (1483-1546), a professor at Wittenberg, nailed 95 theses to the church door against the sale of indulgences and the abuses of Papacy, demanding, "Why do we let them make such fools and apes out of us?" In 1520 Luther burnt the Canon law books, thirty years later labeling Canon law as 'Papal crap, stinking crap, born out of the arse of the Devil' (Witte 2002: 82). Then in 1521, when Luther refused to recant his position, the "Reformation" (anachronism) commenced with the Diet of Wurms. Fleeing to Castle Wartburg for refuge, Luther translated the Latin Bible into German, so that the population could read Scripture for themselves, and

come to conclusions based upon what they read themselves instead of what they were told by the elites. It was Martin Luther's continuing acts of courage and steadfast resistance against the formidable feudal and medieval institution of the Church that brought out a new attitude among the people and a willingness to look at the world in a different manner.

Georg Joachim Rheticus (1514-1574), assisted by Philipp Melanchthon (1497-1560), succeeded in 1536 in obtaining a teaching position in astronomy and mathematics at Wittenberg. However, Rheticus soon took leave to become Nicholas Copernicus' only disciple and not only persuaded Copernicus (1473-1543) to publish *De revolutionibus orbium coelestium* but also organized for its publication in Protestant Nuremberg, 1543.

Two role models, Martin Luther in 1521 and Nicholas Copernicus in 1543 encouraged people to look at the data for themselves and make their own conclusions. This emphasis on free choice, a combination of classical Humanism, Protestant Reformation, and the Copernican Revolution became one of the great pivot points in Europe. No longer would remote church leaders hold the right to interpret the creation from their hidden biblical foundation nor would people accept by faith alone Received Wisdom: Europe was making the genre switch to evidence-based knowledge representation.

Starting in 1517 the Protestant Reformation emerged from the Humanist movement set in motion by Petrarch, Valla, and Agricola (Mack 1993) and their correction of "Old Text" from the Greek and Roman Classical Ages. Stripped to its essentials, the Protestant Reformation advanced public education; dismantled the hegemonic mindset of the Catholic world; fore-grounded the importance of the Public Record; freed text from its captivity by the elite; gave breathing space to the secular; protested against institutional abuses of the populace (Hence Protestant); practised reform (Hence Reformation); and reacted against the Scholastic. These great reformations against the Old World Order were assisted by the spread of the printing press. Both *De revolutionibus orbium coelestium* (Copernicus 1543), which computed from data tables, and *Astronomia nova* (Kepler 1609), which combined geometry and physics, are iconic texts from this new age.

The New World Order moved focus from absolutism to accountability; from control to choice, from elite to evidence, from faith-based to knowledge-based, from geocentric to heliocentric, from minister to mercantile, from Orality to Text (Ong 1958; 1982), from preaching to the practical, from priest to parliament, from private to the public, from received to perceived, from sacred to secular, and from the next world to this world.

3 The New Curriculums

The Protestant princes and the growth of the mercantile elite in the Baltic States required accountants, administrators, bureaucrats, engineers, managers, and strategists. Thus, pioneered by Erasmus (1466-1536), Philipp Melanchthon, and Petrus Ramus (1515-1572), public policies on education in the Reformed Towns spread popular education by Commonplace books, Commonplace Learning, and civil gymnasiums focusing on the practical and useful. Curriculum reform targeted methodologies that efficiently moved the educational process through the trivium and quadrivium. Therefore, in the Protestant Reformation, a revolution in learning occurred that was based upon a new notion of Truth: Truth was to be accountable, evidential, practical, public, natural (From Nature), transparent, and verifiable in this world.

Petrus Ramus, in particular, invented radical new methodological systems for the mass packaging of information and boldly advanced the implementation of mathematics, science, and technology in his curriculums (Hotson 2007). Killed during the St. Bartholomew's Day Massacre, a precursor for the Night of Broken Glass in Nazi Germany and the Rwandan Tutsi massacres, Ramus personified the martyrs of this new need to know, to renew, and to be scientific and secular in outlook and practice.

4 Two Nineteenth century Neohumanists

During the Nineteenth century the Neohumanists of the Protestant Reformation continued to expand the public basis of education. One great Neohumanist from this age is Hermann Günter Grassmann (1809-1877). Born in the Lutheran heartlands, son of a Lutheran minister, a linguist, polymath, publisher, and second language teacher, Grassmann spent his teaching career in the gymnasiums. Independently, he made great advances in developing new algebra; graph theory; the first geometry beyond Euclid; and vector sets. Honoured by two laws, the Grassmann Colour Law on mixing colours and the Grassmann Sound Law for the Indo-European languages, he also wrote books on German grammar, became a leading Sanskrit scholar, and translated the Rig Veda. This paper examines his connections with Ferdinand de Saussure and the little known notion of Saussurean Wave Mechanics. The coupling of vector spaces to Saussurean Wave Mechanics provides a dynamic multi-dimensional model in opposition to Stationary Linguistic Systems.

5 Background to the Stationary Linguistic System Set

Grassmann, Saussure, and Stationary Linguistic Systems (2010) is the fourth and penultimate in the series starting from Einstein, Hertz, and Dedekind and ending with

Poincaré. Each in the series is concerned with detaching the methodology of second language learning from stationary linguistic systems, which were an artifact invented by Saussure to explore the stationary concept. In the Einstein paper, Spacetime is transferred to the text. The Hertz paper distinguishes between the mechanics of disabling and enabling grammars. And in the Dedekind paper we learn about the Nineteenth century's ambition to coral the calculus by arithmetization and encounter the Dedekind Dot dancing across the gaps of lacunarity.

The great mystery of stationary linguistic systems is that they do not close upon bounded elements and perfect primitive units, as predicted by the geostationary mindset, but actually open upon the fractal world of Cantor Dusts, Koch snowflakes, and the Menger Sponge. This pathological phenomena, a recursion upon island coastlines all displaying complicated curves upon the plane, demolishes the notion of perfection in exactly the same manner as de Revolutionibus replaced the earth with the sun; the *Astronomia nova* (Kepler 1609) replaced perfect circles with ellipses for planetary trajectories; and the *Sidereus Nuncius* (Galileo 1610) not only replaced the perfect moon with the earthlike mountainous moon but also revealed four moon - Io, Europa, Ganymede, and Callisto - moving backwards around Jupiter and backwards against the heavenly spheres.

In the Lacunar Space of the "Elusive Continent", it is Einstein's Spacetime that provides the boundaries of limitation, not the elements of perfection. Thus, instead of Hertzian disabled grammars providing the stationary point of the Dedekind Dot upon the linear baseline of reason, it is the superimposed Spacetime Frame of the Text providing the limitation. Second, Hertzian enabled grammars assist in delimiting the dancing landscape phenomena of indeterminacy displayed by the mobile Dedekind Dot (The Corpus of the Rational-Legal provides illustrations of this indeterminacy phenomenon).

In advancing the pathological over the perfect, discontinuity, intermittency, and irregularity become the medium, the message and the mix. In retrospect, Geocentricity, Idealism, Paradise, Perfection, Reason, and Stationary Linguistic Systems are a utopian Garden of Eden from which Humanity has been expelled. It is, therefore, not Augustine's City of God but Humanity and the planet with which policy makers have to interact. Interaction with the discontinuous, intermittent pathological rather than the perfect places emphasis on agents, education, skills sets, and social systems, i.e., the dynamics of Vector Spaces and Wave Mechanics. In the reference frame of the Protestant Reformation, the Two Kingdom's Theory, the disjunction between visible reality and the Platonic pure invisible Church, explains the selection of visible reality.

6 Focusing Upon the Elusive Continent

The geocentric mindset, which predates the Protestant Reformation, survives in the syntactocentrics of stationary linguistic systems and in the Court Society. However, while the Lacunar Universe may be plastered over with boards and bricks and navigated by straight streets and traffic signals, beneath the flaking paint and torn wallpaper of certainty lurk Alogon and Chaos, crisis in the concept of the sign (Eco 1984). There are no pebbles, platforms, and points in the paradise and perfection promise of stationary linguistic systems, only the gaps and the disjoint mechanics of Nonlinear Two.

The beautiful symmetry of the Pythagorean World with its elegant regular solids, the cube, octahedron, tetrahedron, icosahedrons, and dodecahedron, was broken by the discovery of the irrational numbers. Hippasus of Metapontum was thrown overboard from a Pythagorean ship for exposing the discovery of the irrational. However, just as the atom is mostly empty and space is mostly empty, the number set is mostly irrational.

The Scholastic dream to discover the universal language in Latin, the Nineteenth Century's ambition to coral the calculus by arithmetization, and the failures of analytical set theory and syntactocentrics represent close encounters with the Elusive Continent (EC). The wavelength dimensions of .6309; 1.2618; 1.8928; and 2.7268, i.e., recursion of Cantor Dusts, can identify the EC. Thus, lacunarity, not linearity, is the home of Humanity and Dancing Dust, not Stationary Dot, forms the curve upon the plane.

The Age of Reason is dead and extinct, having been replaced by the Age of Computation and Information. Reboot, Recursion, Redundancy, Repair, and Resend (The 5 Rs) are the systematic non-linearity behind binary Computation and Information Age, not the Dedekind Dot, analytical set theory (Hilbert's Hotel of Broken Dreams), and the syntactocentrics of stationary linguistic systems. A quantum leap beyond the Age of Reason, the 5 Rs are a vector methodology, a navigational toolbar operating in the lacunarity. This methodology, which can be exported from machine systems to the human mindset, also provides a natural methodology for the second language classroom.

7 Introducing Grassmann and Saussure

Modern European certainty has been built on the lexicon of the Enlightenment and the underlying methodology of Reason stemming from the synchronic and

syntactocentric codifications of stationary linguistic systems. However, the internal realism of this Discourse of Modernism is deconstructed by two impossibilities, exhaustion by reduction and recovery by extension.

Hermann Grassmann (1809-1877), after completing his studies in Berlin, developed linear algebra, the theory of extension, and vector calculus based on the notions of collections of units, dimensions, exterior product, projections, and subspaces. Grassmann published *Die Lineale Ausdehnungslehre, ein neuer Zweig der Mathematik* (1844), *Neue Theorie der Elektrodynamik* (1845), and *Die Ausdehnungslehre: Vollständig und in strenger Form bearbeitet* (1862), all of which remained neglected writings during his lifetime. Disappointed at the minimal response to his mathematics, Grassmann turned to Indo-European Studies where he became a leading scholar. Well known for Grassmann's Sound Law in Indo-European, he also translated the *Rig Veda* and was elected to the American Oriental Society.

By his study of Sanskrit and Gothic, Grassmann had showed that German was "older" in one phonological pattern than Sanskrit. This demonstration, therefore, not only had undermined the position of Sanskrit as the language that was the earliest attainable in Indo-European linguistics but it had also undermined the notion that language developed from an analytic to a synthetic structure through combining simple words without changing their form to make new words (Wikipedia).

Saussure arrived in Leipzig in the fall of 1876, the year Karl Verner (1846-96) discovered the hidden "regularity" of "exceptions" to Grimm's Law which became one of the most potent arguments in favor of exceptionlessness, and August Leskien (1840-1916), "guru of the Neogrammarians", published in *Die Declination im Slavischlitauischen und Germanischen* the central axiom of the Neogrammarians that sound laws have no exceptions, (1876). 13 January 1878 Saussure's "Essai d'une distinction des différents indo-européens" was read at the meeting of the Paris Linguistic Society.

In 1878 the young linguists at Leipzig (Osthoff and Brugmann) founded a journal promoting the most important principles of the Neogrammarians: (1) Exceptionlessness in sound mechanics; (2) Analogy; (3) Associations; (4) Living Sound. And in December of that year Saussure's *Mémoire sur le système primitif des voyelles dans les langues indo-européennes* (Paris: Vieweg, 1887), ?authorized reprint of the 1879 edition), applied the method of internal reconstruction to Proto-Indo-European, where he proposed the hypothesis that the long vowels had developed from short vowel plus sonant coefficients (Lehmann 1967). His doctorate *De l'emploi du genitif absolu en sanscrit* (1881), 'A propos de L'accentuation lituanienne (MSLP 8: 425-46), 'Accentuation lituanienne (IFAnz 6: 157-66), and Saussure's Sound Law in Lithuanian all indicate that Saussure

must have been familiar with the linguistic work of Hermann Grassmann.

In March 1880 Ferdinand de Saussure departed Leipzig, having undertaken Indo-European Studies and completing his doctorate 'summa cum laude', and in September 1880 he arrived in Paris to take a position offered to him by Michel Bréal, Professor of Comparative Grammar at the College of France (1866-1905). Between March and in September 1880 there is some evidence that Saussure accompanied August Leskien and Paul Brugmann (1849-1919) on a fieldtrip to Lithuania. Grassmann, a renowned Indo-European Linguist and author of Grassmann's law, had recently died, and Leskien had to jointly prepare an article with Moritz Cantor, the mathematician, for publication on Grassmann. It is likely Leskien, Brugmann, and Saussure discussed Grassmann during the Lithuanian fieldtrip (Cantor & Leskien 1879; De Mauro 1968: 298-299; Koerner 1973: 26-27; Murpurgo Davies 1998: 187, 350). The question is whether Saussure was familiar with the mathematical work of Hermann Grassmann.

Herman Grassmann made major advances in vectorial mathematics, and Saussure's General Linguistics, as recorded in the Constantin Notes, displays many similarities with Grassmann's work in vector spaces. In addition, their two great linguistic papers "Concerning the Aspirates and Their Simultaneous Presence in the Initial and Final of Roots" (Grassmann 1863) and "Memoire on the Primitive System of Vowels in the Indo-European Language " (Saussure 1878) both display (1) unitary vision; (2) research into empirical facts; (3) data-driven by Proto-Indo-European; (4) law-driven; (5) sound law driven; (6) root based; (7) reconstruction of systems by Internality; and (8) the impossibility of incorporating linearity (Lehmann). Once this Grassmann Saussure connection is made - a connection made possible by Pergamon Press, Eisuke Komatsu & Roy Harris, and the survival of the notebooks of Emile Constantin - Saussurean Linguistic Study breaks free of the Newtonian State strait jacket imposed on it by his posthumous Editors Bally and Secheyaye, to whom much is owed, and enters four-dimensional vectorial hypercube systems incorporating wave mechanics.

7.1 Hermann Grassmann

Cartesian geometry brought algebraic methods into geometry, and by the middle of the 19th Century there was a search for direct methods, i.e. methods of synthetic geometry that were coordinate free. This is the beginning of the necessary abstraction for the concept of a linear space to arise (Wikipedia).

Hermann Grassmann came from a long line of Protestant pastors, he graduated in Theology, and, as a Prussian Neohumanist, he was dedicated to the need to integrate the sciences and humanities. Officially a language teacher of French, German, and

Latin, Grassmann actually published mainly on language teaching, these publications being his most successful. This aspect of Grassmann's life has seldom been researched (Schubring 1995: xxii). One pioneering work in this direction is "Hermann Grassmann's Contribution to the Construction of a German "Kulturnation Scientific School Grammar between Latin Tradition and French Conceptions" by Erika Hültenschmidt (1995: 87-113). Grassmann studied with Schleiermacher in Berlin between 1827-30, and the idea that thought is "Interior Speech" and Speech is Exterior Thought" radiates back through Humboldt and Herder to Plato. Thus, in total, Grassmann's Protestant background consisted of philosophers, scientists, and scholars, and his system of methodology is structured on symmetry of oppositions or contradictions.

Grassmann realized that when geometry is put into a vector algebraic form the apparent restrictions of 3-dimensional space vanish. He wrote in his *Ausdehnungslehre* of 1844: If two different rules of change are applied, then the collection of elements produced... forms a system of the second step.... If still a third independent rule is added, then a system of the third step is attained, and so forth. Space theory may serve here as an example.... The plane is the system of the second step.... If one adds a third independent direction, then the whole infinite space (system of the third step) is produced.... One cannot here go further than up to three independent directions (rules of change), while in the pure theory of extension their quantity can increase up to infinity. He also obtained the formula for change of coordinates under change of basis, defines elementary transformations of bases, and shows that every change of basis (equivalently, in modern terms, every invertible linear transformation) is a product of elementaries (Wikipedia).

The calculi of Newton and Leibniz were geometric but during the Nineteenth Century, first led by Cauchy and then by Cantor, Dedekind, and Weierstrauss a discretization program took place leading to the arithmeticization of the calculus (Everdell 1997; Lakoff and Numez 2000). Grassmann, however, developed geometric algebra, which abandoned the usual separation between analytical and synthetic and examined the linkage between projective geometry and invariant theory on the one side and the investigation of n-dimensional space and general complex numbers on the other (Tobies 1996). The Saussure of the Constantin Cahiers also discusses projective geometry, invariant theory, and the investigation of n-dimensional space.

Rene Descartes, who, by labeling line segments with letters to represent their numerical length, was able to apply basic arithmetic operations to geometric operations, and thus invented modern analytical geometry. This fusion makes modern physics possible (Hestenes 1999: 6-7). But it was Grassmann, two hundred years later in 1844, who

extended the Cartesian notion to directed number, scalar, or vectors, thereby moving beyond the x and y axes of the Cartesian Coordinates. Hestenes (1999: 14) considers Grassmann may be the first person to clearly understand that the significance of a number resides not in itself but in its relationship to other numbers. Similarly Saussure may be the first linguist to realize that the significance of a sound or word resides not in itself but in its systemic relationship to other sounds and words.

Vector addition and scalar multiplication succeed in some functions but fail in others. Thus, Grassmann introduced his Inner and Outer Products to clearly differentiate between scalars and vector. His Inner Product greatly increased the use of vectors in relation to correspondences and projections, e.g., the triangle can simply be written as the vector equation $a+b=c$. Hence, theorems of geometry and trigonometry become replaced by algebra and natural language excluded (Hestenes (1999: 14). But, like Vector addition and scalar multiplication, the Inner Product also failed to go far enough, for the Inner Product fails to express planar surfaces. This is achieved by Grassmann's Outer Product, which introduces the bivector or 2-vector to characterize direct plane segments. Vectors are one-dimensional, bivectors are two-dimensional, and the Outer Product enables the construction of multidimensional spaces, simply by increasing the vector number; "Thus the idea of numbers with different geometric dimension begins to take place", and "mathematical meanings to 'line' and 'plane' are determined solely by specifying relationships between them (Hestenes (1999: 21-22, 28).

First, "Grassmann was the first person to arrive at the modern conception of algebra as a system of rules relating otherwise defined entities"; and second, his "inner and outer products complement one another by describing independent geometric relations". This latter fact led Grassmann late in life to add unlike things in a consistent manner, with surprising consistent results; all that is required is that the indicated relations and operations be well-defined and consistently used (Hestenes (1999: 29-31).

Modern vector systems were developed and popularized in the 1880s by Josiah Willard Gibbs (1839-1903) and Oliver Heaviside (1850-1925), and during the 1890s a struggle for existence between the competing systems took place, with one of the aims being to replace the Cartesian coordinate system. Between 1890 and 1894, for instance, 38 articles appeared in eight leading scientific journals, including twenty in *Nature*. In the period 1894-1910 vectorial analysis became widely accepted, especially in the field of Electrical theory. Crowe (1967: 240-241) provides a list of major publications. The Collected Works of Grassmann were published between 1894-1911.

7.2 Coordination of Grassmann and Saussure

Ten points of correlation exist between Grassmann and Saussure: (1) System as top-down and not bottom-up system; (2) System as relationship; (3) Inner product; (4) Outer product; (5) General form; (6) Oppositions; (7) Linear Algebra; (8) Projection; (9) Extension; and (10) Dimensions.

Grassmann's main objective was to establish a uniform formal construction of mathematics, and, in detaching his reasoning from concrete individual objects, he defined mathematics to be a formal science that examined objects established by pure thought, such as the theory of forms (Schlote 1995: 165). Replace 'Grassmann' and 'mathematics' with 'Saussure' and 'linguistics' and no one could detect substitution.

It is not difficult to establish that Saussure's General Linguistics was based on Grassmann's algebraic vehicle of directed vectors. This can be done from two directions.

First, from the Notebooks of Emile Constantin, Saussure's lecture of 29 November 1910 contains a four-dimensional cube and a four dimensional cylinder, the four-dimensional cube is actually a hypercube while the four dimensional cylinder contains waves. In the four-dimensional hypercube there is a linguistic vector "medio" which bifurcates in spacetime into "medzo" and "mezzo". Here Saussure has represented the Babel Effect by a vector within a four-dimensional hypercube incorporating spacetime.

Second, from Saussure's most gifted and dedicated disciple, Sergej Karcevskij (who migrated to Geneva in 1907 and studied with Saussure; who in 1917 traveled to Moscow and persuaded Jakobson and Trubetzkoy of the importance of Saussurean linguistics; who in 1926 was one of the founding members of the Prague school; who in 1929 was one of the organizers of the First International Congress of Slavonic Philologist in Prague; who in 1930 attended the First International Congress at the Hague; and who in 1940 created the Société genevoise de linguistique (1940-1956) which led to the Cahiers Ferdinand de Saussure) who wrote in 1929:

Thus, the nature of a linguistic sign must be both static and dynamic at the same time....What is really new here is the relationship, the intersection of coordinates and not the coordinates themselves....schematic product of an integration....displacement of coordinates. Even at the moment of its 'invention,' a coordinate is necessarily general (Karcevskij 1929, 1982: 50).

In the graphic representations of the lecture of 29 November 1910 and in "The

Asymmetrical Dualism of the Linguistic Sign" (Karcevskij 1929), it is self-evident that Saussure is referring to a vectorial system in his General Linguistics. Saussure's 29 November 1910 lecture may be derived from a specific Grassmann textbook, e.g., *Projektive Geometrie der Ebene unter Benutzung der Punktrechnung dargestellt* (1909).

8 Implications for the Saussurean Second Language Teacher

By binary opposition the Domain Next Door (19 May 1911, Constantin Notebook VIII), places the praxis of the pedagogic world firmly and securely outside General Linguistics in the domain of Hertzian Enabling Grammars. It is this epistemic break from performance-based grammars by domain formation, based on Grassmann Oppositions and Hertzian principles of mechanics (1894), that is the prime mover in the construction of the Order of Stationary Linguistic Systems and its discourses. Thus any attempt to reconnect the dynamic classroom to stationary General Linguistics is not only a chimera doomed to failure but an act of self-destruction which deconstructs and disqualifies the Dassin, Discourse, Order, and Warrant of General Linguistics.

Vector Management Systems are multi-dimensional algebraic vehicles that can carry unlike loads in combination. As directed number and directed magnitude, vector management systems have no need to explain concatenation, nor generation, nor systematics, for concatenation, generation, and systematics are carried by the momentum of the directed dynamic and not by the load. All Twentieth Century Linguistic Systems have sought concatenation, generation, and systematics in the load, which is stationary, and thus has neither attractors, closure, nor end. Transfer of order to the momentum of the Speech Circuit is highly reductive through simplification and speed.

Waves may be catalogued into two types, moving and standing (stationary). This primary bifurcation enables Stationary Wave Mechanics to replace Stationary Linguistic Systems. Mechanical waves are measured by amplitude (Height) and length (Distance between wave tops). The "Natural" Speaker is embedded in the momentum of the Standing Wave, which consistently conveys combinations of coherent semantics, syntaxes, and utterances towards the Speaker. On the other hand, in the Standing Wave the Second Language Learner, perceives only detritus of broken, discordant flickering of amplitudes and wavelengths. To turn this ephemeral and external oscillation into coherence requires recursion, repair, and reboot strategies to manage the data stream, i.e., an enabling Hertzian grammar (See Part Two). The Standing Wave -which is External - primes, pulses, and pumps. Thus in this carnival and "genuine polyphony of fully valid voices" (Bakhtin) order emerges from the matrix provided by emotions, experiences, genres, involvement, narratives, storylines, strategy, and text.

A Human Dynamic of causation, as opposed to a syntactic system of causation, places the individual, its emotions, its community, and its world at the nexus of action, thus the individual is an agent, an actor, an amplifier, the capacitor, the reducer, the transformer.

In "The Lost Tools of Learning", first presented at Oxford in 1947, Miss Dorothy Sayers discusses the combined folly of a civilization, which, having forgotten its own roots is forcing those roots to shore up the tottering weight of an educational structure built upon sand. No greater notion of sand in civilization exists than the disconnected homunculus ratiocinative syntax of General Linguistics with its roots of mathematical certainty based on the masonry and mortar of the Mesopotamian mason. The solution Sayers advocates is a type of progressive retrogression to the Trivium - a modern Trivium "with modifications - arguing that we should not let our young men and women go out unarmed, in a day when armor was never so necessary, for, by teaching them all to read, we have left them at the mercy of the printed word, massed propaganda", and the hypnotizing arts of the spell binder.

The infrastructure of a Post-Modern Trivium self-organizing on the edge of chaos a functional mix of the Dialectic, Enabling Grammar, and Rhetoric to the requirements of the contemporary world is an infrastructure responding to the dynamics of Cantor Dust. Such an responsive infrastructure, combining the vectors of Recursion, Repair, and Reboot - for Reason is not enough - might be the only survival trajectory for Humanity.

Second Language Teachers teach English, for example, without teaching defence against the use of language as a weapon, i.e., linguistic abuse. It is time for Second Language Teachers to provide armor and systems of resistance to the hypnotizing arts of the spellbinder, e.g., against lawyers, their geocentric mindset, their sense of entitlement, and their belief that supposes that they are exceptions to the methodology of Modernism.

9 Comparison with the Court Society

The European Court Society, a projection of Papal power against the secular state commenced with the Gregorian Papal Reforms of 1073. So, following Luther we can ask, "Why do we still let them make such fools and apes out of us?" For we can recall that Luther, like Petrarch, Valla, and so many others, had a deep abiding detestation and distrust for law faculties, lawyers, and the law as it is practised (Mullet 2004: 35).

The key word for the Court Society Privilegium of power, prestige, and privilege is Rational-Legal or the Ratiocinative-Legal. However, it is plain from the two impossibilities of Stationary Linguistic Systems, exhaustion by reduction and recovery by extension that the Ratiocinative-Legal is a fable, a fantasy, a fiction, a fossil, and a fraud left over from the geocentric mindset of certainty and perfection. In brief, the entire foundations of judicial methodology are the Eye of God methodology and, in both the Catholic and Protestant systems, Judges were God's agents, eyes, and mouth on Earth with God being the supreme rational in tune with nature.

The Ratiocinative-Legal is an obsolete and worn-out genre, actually the Scholastic methodology of Disputatio, where idealism, infinity, ingenuity, invention, and invective provide the pentangle of persuasion. Following Plato's Cave analogy, the Ratiocinative-Legal rejects the empirical in favour of a priori first principles of rationalism that work outwards to perfection from any random dot, or point. This explains why, in exception to the modern methodologies of knowledge representation, Judges regularly exclude data, evidence, exhibits, facts, forensics, laws, testimony, and witnesses, for such external proofs contaminate and invalidate the first principles of rationalism, which are a priori.

The evidence-based linguistic approach demonstrates the Ratiocinative-Legal of the Court, Judiciary, and legal industry to be abusive linguistic behavior. In performance reality, the rationalism of the Court Society consists of: "belittlement, bedazzlement, bewilderment, blather, blind-eye, blowing up out of all proportion, bluster, bluff, bombast, brush-off, bull-dozing; cabal, concealment, conniving, cover-up; deaf ear, deceit, delay, denigration, derision, discrediting, dissembling, distortion, diversions, downplay, downsizing, dust in the eyes; exception and exclusion; fact-forcing, fiction, fraud; guile; ignoring, inaction, ingenuity, immunity, intimidation, invective, invention; garden pathing, goading; misconstruing, misrepresentation, mixed messaging, mockery; pretext; procrustean bed-making; red herrings, rattling the cage, run around; scorn, shock and awe, sidetracking, slight-of-hand, spin-doctoring, stage managing, formation of high stress situations, and suppression. These tactics - abusive linguistic behaviors designed to brainwash, coerce, mind control, and persuade victims into victimage (acceptance of abuse) - were first developed in Modern Europe by the Court Society during the Twelfth Century, and are well documented in *The Formation of the Persecuting Society* (Moore 1987) and *The First European Revolution* (Moore 2000: 112-198). Now, these abusive linguistic behaviors are the global footprint and signature of the Court Society.

The evidence-based linguistic approach demonstrates that for most of its history during the past thousand years, the Court Society has been burning humans alive,

tearing them apart, torturing, starting wars, protecting slavery, and incarcerating anyone they perceive to be a threat to their Privilegium. As Ken Livingston, the former Mayor of London, wrote in "If Voting Changed Anything, They would Abolish It (1987 - 0002177706).

Being evidence-based, this continuing connection between Twelfth and Twenty First century torture is easily demonstrated by the Bush presidency (2000-2009). The 1 August 2002 Torture Memo written by OLC lawyer John Yoo and signed by Assistant Attorney General Jay Bybee of the USA Justice Department to John Rizzo, then acting legal counsel to the CIA can be seen on the web. Reul Marc Gerecht, member of the FOUNDATION FOR THE DEFENCE OF THE DEMOCRACIES, recommends legalized torture by the West in order to constrain and restrain the Islamic Holy Warriors. Columbia Law Professor Philip Bobbit (*Terror and Consent: The wars for the 21st Century*) argues that "Extreme Measures of Coercion" can be combined with "Global Preclusive Interventions and a legitimized "Total Information System". This law professor's position on torture being that it requires a warrant from the Court that cites "Necessity", i.e., "raison état". And Harvard Law Professor Alan Dershowwitz also advocates Torture Warrants" from the Court. His website states that international legal prohibitions against torture can be over-ruled by Supreme Court Judges.

Plato in the *Phaedrus*, where Socrates is speaking of Corax, Tisias, Thrasymachus, Theodorus, Evenus of Paros, and Gorgias, writes of the False Word Wizards "They, who by the power of their language, make small things appear great and great things small" for the express purpose of manufacturing people into finance-generating slaves.

The vectors of this system of abusive linguistic behavior can be tracked back beyond Plato's review of the Counterfeit to the first Greek legal textbook - the *Rhetorike Techne* - written by the first teacher of lawyers, Corax the Crow - a text long thought to be lost, but perhaps rediscovered by the Law Faculty of Bologna University during the rebirth of classical Humanism - and in Indo-European to the pre-Buddhist Logician Sanjaya and CATSUKOTI or the Principle of Four-Corned Negation (Horn 2001: 79-80), which is a mechanical methodology that can reach any conclusion from any premise.

Tracking the vectors of this abusive linguistic behavior back beyond classical and ancient Greece takes us to René Girard, the Scapegoat mechanism of the Collective Hunt and the Human Sacrifice. In this reinterpretation of the operations of the Court Society, the Judgment is, of course, the receipt of Revealed Truth from the summit of Mount Sinai and its words are infallible because they are the words of a God. Now

we can recognize the Court to be what it really is, the ancient place of Human Sacrifice. The Judicial Bench is the altar of Human Sacrifice; the judicial anvil is the knife of Human Sacrifice; the Judge is the High Priest of the War God Yahweh Saboeth; and the lawyers and Police are the Collective Hunters in search of the scape-goats selected from among the plebian.

10 Corpus of the Rational-Legal

The common law world today seems to be in a state of uncertainty (Goff, in Grantham & Rickett 2000: vii).

The law of restitution is an extraordinary subject...its novelty and still more its extraordinary difficulty....There is moreover much about the subject which is still open to debate (Goff, in Grantham & Rickett 2000: viii).

...the bilateral division of the private law of obligations obscured the existence of obligations that could not, without much dishonesty and fiction, be explained in terms of either the parties consent or a wrong-doing Grantham & Rickett 2000: ix).

As the common law is so rich and varied in its approach to legal issues, it is always the case that a novel set of facts can be approached from several different angles, so that in truth, it is almost impossible to say that there is a definitely correct final answer to a particular question (Oughton, Harvey, & Marston 2006: vii).

Some writers take the view that the juridical distinctions between the law of torts and other areas of common law civil liability have become so blurred that it might be better to speak of a law of obligations (Oughton, Harvey, & Marston 2006: 8).

Moreover, the application of the *Donoghue v Stevenson* principles appears to have become capricious (Oughton, Harvey, & Marston 2006: 50).

...what may seem to one judge as an obvious consequence may be regarded by another as quite improbable (Oughton, Harvey, & Marston 2006: 99).

The law of negligence is a relatively recent invention, being at the beginning of the nineteenth century, in the words of PH Winfield, little more than 'a bundle of frayed ends' (Beever 2007: 1).

But it is impossible to define the content of these terms exactly, because people disagree on what constitute the rules and doctrines of the law. Accordingly, there is no

'theory-neutral' way of defining the content of principle and of policy. And, for reasons discussed below, the distinction between them is crumbling. For some modern commentators, the distinction is incoherent (Beever 2007: 3).

Over the years, this something else has grown from a small suburb outlying the town of legal principle into a metropolis that now dwarfs and encroaches upon the town (Beever 2007: 3).

In fact, the potential lists seem endless (Beever 2007: 4).

For instance, in *White v Jones*, one of the most famous recent cases, a majority of the House of Lords agreed that the claimants should be able to recover from the defendant, but their Lordships gave quite different reasons for that conclusion....there appears to be no consensus on why the case was rightly decided....The above has also led to the existence of curious answers that appear to lead nowhere (Beever 2007: 5).

In summary, the law is awash with conflicting policy arguments that can be utilized to support any conceivable position....We have become so familiar with this situation that it is unlikely to raise any eyebrows (Beever 2007: 5).

A browse through today's law reviews will reveal the broad range of current analysis of the law. It is now accepted practice to explore and analyze the law from a plethora of viewpoints (Beever 2007: 11).

Simply, there is always a gap between principles and decisions....In fact, it would be futile to attempt to fill the gap....it is no failure on the part of judges when their judgments contain these gaps (Beever 2007: 49).

In this book, I make much use of the distinction between policy and principle. The distinction is problematic, hard to define, and often inconsistently used (Beever 2007: 50).

Again, this is because of the slipperiness of the terms (Beever 2007: 51).

10.2 Review Of The Corpus of the Rational-Legal

The dancing Dedekind Dot, the Elusive Continent, and the Lacunarity of Stationary Linguistic Systems predict the linguistic chaos and confusions of the Court Society. This brief corpus displays uncertainty, novelty, debate, variation, contradictory answers, blurring, expansion (not convergence), crumbling, incoherence, roads that lead

nowhere, gaps, and slipperiness. The perfection promised by the Agent, Eye, and Mouth of God methodology put in place by the 1073 Papal Reform, the 1215 Lateran Council, and Melanchthon's Christian magistrate governing with divine authority as Father of the Community (Landesvater) (Witte 2002: 76) does not exist. Judges and their legal industry demonstrate the failed feudal states of geocentricity.

11 Where To From Here?

The Protestant Reformation has stalled and the protest leading to reform has fallen asleep. The 500th year commemoration provides an opportunity for protest against abusive linguistic systems. And, as we know now, it is the momentum which carries the load and not the load which produces momentum. Thus, we can genre switch from stalled static linguistics to dynamic linguistics where the momentum of the moment carries us over the yawning labyrinths of analysis and reason.

In the binary system of computation, the 0 represents "NO" and the 1 represents "YES". "No" is an underutilized word in the Second Language Learning repertoire. "NO" is the most important unary operator in programming languages for the positive unary operator is defined by the absence of the unary negative. The unary negative is a vector, just as Reboot, Recursion, Redundancy, Repair, and Resend (The 5 Rs) are vectors.

The power brokers embedded in the infrastructure of the modern legislative state, i.e., the stealth state of judges and lawyers, - in the absence of the unary negative - automatically run on the positive unary operator. Martin Luther's speeches, tracts, and writings saying NO to the abuses of the monasteries and priesthood of the Sixteenth century apply equally today to the failed regime of Judges and lawyers installed into the modern Legislative State by the 1073 Papal Reforms and the 1215 Lateran Council.

The Monastery system disappeared after 1000 years of existence. It is time for the 1000-year-old Court Society to be disappeared by the public unary negative vector. For the Junta of Judges constitutes Luther's drones and the Privilegium of the Courts is nothing more but an indulgence and a relic left over from a theological anachronism. It remains for Parliaments, People, and the Protestants of all religions to recover the lost momentum of Luther, Erasmus, Melanchthon, Ramus, and Zwingli (1485-1531) by deleting the abusive linguistic practices of the persecuting society in the trashcan of history.

In the Montesquieu separations of powers, there can be no exceptions to the method of science, secularity, statistics, and technology. Replacement of the persecuting

society, i.e., high priests, dulocratic junta and stealth state, can be first computational, second sociological. Barcodes and toolbars can completely replace the Court Society, for if it is not computational, it is not lawful. Legislation becomes anti-litigation rather than litigation-drive. This is a genre switch by reversing the polarity. The rest is educational where the sociological is directed towards preservation of the planet and its peoples of all species, not towards pursuit of lost paradises and impossible perfections.

11.1 The One Thousand Year Recursion

On 1 June 989 at Charroux, Aquitaine, France, as social disorder from the collapse of the Carolingian Kingdom spread, the people of central France gathered around the great tower of Charlemagne in a Peace of God Council at the great Benedictine Monastery to demand the restoration of Law and Order in preparation for the millennial return of Christ. One month later Halley's comet appeared in the sky and eighty-four years later Hildebrand, under the title Pope Gregory VII, incorporated the Peace Council demands of Charroux into Canon Law with his Papal Reforms of 1073. These Peace Council demands became institutionalized in Europe with the 1215 Lateran Council.

Centered first on the law schools of Bologna and Paris, the *novi homines* of *advocati*, *causidici*, *clerici*, *magistri*, *ministri*, and *officiales* penetrated the communities by feeding off the fat of Jews, lepers, women, heretics, and local people of standing and wealth with a penetrating fiscality (Moore 2000: 166, 172, 180). Termed by Moore, the *Persecuting Society* (1987), this new regime of legitimized violence (Weber 1919) shared a common culture of advancement, outlook, and purpose. And, harnessed together, the tribe of lawyers with their genre of legalese based on credentials of emerging scholastic methodology and rational inquiry, developed alienating procedures effective for imposing their will on all sections of society, a junta which is now a global dulocracy.

In the Thirteenth century, a great outburst of writing erupted against the abusive linguistic practices of Court Society. The Goliard writers considered the existence of Judges, and lawyers to constitute proof that the Kingdom of the Anti-Christ had been established on Earth. This birth of modern European satire by the Goliard writers documents the avarice, betrayals, corruptions, deceptions, frauds, and enticements of the Court Society.

The *Carmina Burana* (1230 AD), Adam of Perseigne, the *Apocalypse of Goliath*, the Goliard genre, Arnold of Brescia, Bernard of Clairvaux, John Bromyard; John of Salisbury, Nigel Wireker, Odo of Cluny, Peter of Blois, Peter of Damiani, Peter the

Venerable, Stephen Langston, Tanchelm of Antwerp, Walter of Chatillon, Walter Mapp, and the unknown Archpoet all considered the introduction of a professional class of adjudicators dislocated nature, introduced chaos, and put time out of joint. To them, this "Unholy band" of Judges and their lawyer colleagues "raking in finances" and profit after profit was substantive evidence of diabolical triumph. The Lineage of Lady Meed (Yunck 1963); The Discovery of the Individual (Morris 1972); Law and Revolution (Berman 1983); The Formation of the Persecuting Society (Moore 1987); The First European Revolution (Moore 2000); the Medieval Origins of the Legal Profession (Brundage 2008); and The Psychology Of Tyranny, A. Haslam & S. Reicher, 2005, Scientific American MIND, Volume 16, Number 3, ISSN 1555-2284; Blackwell Handbook Of Social Psychology: Intergroup Processes, R. Brown & S. Gaertner (2003), Oxford: Blackwell; Blackwell Handbook Of Social Psychology: group processes, M. Hogg & S. Tindale, Oxford: Blackwell; and Multidisciplinary Handbook Of Social Exclusion Research, D. Abrams, J. Christian, and D. Gordon (2007), Chichester: John Wiley & Sons document and explain the abusive linguistic practices of the Court Society.

11.2 The Five Hundred Year Recursion

The rapidly approaching 500th commemoration of the Protestant Reformation provides an opportunity for Protestants and the secular scientific revolution to begin renewal to the basic parameters of the people's revolution, i.e., the unary negative vector. For without the momentum of the public protest, the established elites will continue doing exactly what they have always done, which is legitimized violence in defence of their exceptions.

11.3 A Millennium Model Forward

The current constitutions of the Western democracies are actually not democratic but Lacedaemonian (Spartan), which is a combination of Oligarchy (Judges), Aristocracy (Lawyers), and Democracy (Public). The Solon Constitution for Athens from the Sixth Century BCE put in place this trinity of Aristocracy, Democracy, and Oligarchy, which was an advance over the Oligarchic priesthood. Montesquieu followed Solon in this balance of power by social class. This ill mingling in the constitution (Aristotle in Politics) explains the crisis in the Western legal system (Berman 1983). Alleged to be balanced and equal, the Lacedaemonian Constitution stops democracy at the ballot box where governance is then taken over by the Junta, with elite judges and lawyers (Making & Interpreting Law) and the Supreme Court ruling Godlike over the Legislative State.

Solon and the early Constitutionals were concerned not to permit power to become concentrated, yet Modern Judiciary, its Legal Industry, and its Police represent an extreme concentration of power beyond the reach of Citizenry and Legislature save by Constitutional Revolution. The Vector System of Grassmann coupled to Wave Mechanics can easily replace the Judiciary, its Legal Industry, and its Police, create stability in society, provide national identity and pride, and transcend the Human species.

It is the momentum of Wave Mechanics that can, paradoxically, produce stability through Standing Wave, Standing waves are commonly observed in rivers, in perturbed flows, and in the vicinity of massive compact objects. Running a kitchen tap will produce a standing wave into the sink. We see Standing Wave already with elementary school, high school, universities, the work force, retirement age. The flowing population can be harnessed into the democratic management of law.

Reason and rhetoric are superseded genres. Vector management systems can greatly simplify all legal process by eliminating reason and rhetoric - abusive linguistic practices - from procedure. All case management can be reduced to vectors and geometric notions within Relational Databases. Modern Graph Theory (Bollobás 1998) can manage legal process through Connectivity, Flows in Directed Graphs, Hall's Marriage Theorem, Stable Matchings, and the Tutte Polynomial. Such systems can replace the Court Society with impartial online, self-serve, shopping mall-like law management systems and, in time, this barcode toolbar methodology will maintain its own momentum.

Recursion of the goals of the Peace of God Movement (1000 AD), i.e., Civil Peace based on protection from the plundering Elites, and recursion the goals of the Protestant Reformation (1500 AD), i.e., "NO" to the linguistic abuses and indulgences of the plundering Elites, can be handled by the vector space of Wave Mechanics. The first prong of the recursive pitchfork removes the major source of the abuses, deceits, indulgences and lies of the powerful elites, i.e., the Court Society put in place first by the Sixth Century BCE Solon Constitution, second by the Papal Reforms of 1073, and third by the 1215 Lateran Council, by unary negative vector. The second prong of the recursive pitchfork reaffirms the major sources of public honesty to be Computation, Education, the Natural World, the Public Record, and Scientific methodology.

The vector space of Wave Mechanics can build standing waves in society, standing waves maintained by the 5 Rs, i.e., Reboot, Recursion, Redundancy, Repair, and Resend, with the phase dynamics of Standing Wave Mechanics each year bringing a new pulse of population into Standing Wave, thereby providing power without

accumulation and concentration. An Institution, for example, the Academy of Civil Peace, would guide, prepare, and train pulses approaching the age of law management, e.g., 47, 65, but exercise no influence over events within the Standing Wave. As each year passes, the constituents of the Standing Wave disintegrate and fade but the wave remains.

Marsilius of Padua in 1324 in his tract *Defensor pacis* detailed the abusive linguistic practices of the Catholic Church and advanced boldly the evolution of the secular state. A direct clone, copy, and spinoff of the medieval Catholic Church the modern Court Society displays exactly the abusive linguistic practices and structures of its original.

Between 1538 and 1541 during the English Reformation King Henry VIII dissolved the Monasteries and confiscated their properties. Henry used the wealth to clear the country's debts-especially as the church had an income three times greater than that of the state (Wikipedia). In 1535 Thomas Cromwell had the *Defensor pacis* translated into English to support the royal actions. It is time to confiscate the assets, capital, and property of the Court Society and to use this great wealth to fund projects repairing one thousand years of mismanagement in the Western legal tradition.

12 Conclusion

In our peregrinations traversing the unexplored connectivity between Hermann Grassmann and Ferdinand de Saussure against the backdrop of the Humanist, Protestant, Renaissance, and Scientific Reformations and Revolutions, we have focused on neglected writings and the lost tools of learning, with a particular emphasis on the momentum of the Public NO to abusive linguistic practices.

It becomes apparent that no need exists for a New World Order. The new World Order already has its momentum from (1) *De revolutionibus orbium coelestium* (Copernicus) with its methodology of computation through multiple tables of statistical data taken from the Natural World verifiable by public observation; *Astronomia nova* (Kepler (1609) with its methodology of geometry and physics; and (3) and *Sidereus Nuncius* (Galileo 1610), where Galileo reported on our moon not being perfect and that four moons were moving backwards around Jupiter: all three books being published in the Protestant Europe made possible by Luther standing and saying NO to abusive linguistic practices.

To complete the mission task of the Protestant Reformation, it remains to bifurcate the Old World Orders tagging along in the slipstream from the New World Order and

to direct these Old World Orders into the trashcan of history where they can be deleted with a click of the constitutional button. Ripping out the embedded relic old world orders with their elites, indulgences, and Privilegium provides sweeping changes to Governance. And, not only do we know where to start ripping, i.e., the 1073 Papal Reforms and the 1215 Lateran Council, we also know how to proceed, i.e., first, by *Defensor pacis* (Marsilius of Padua) and the Dissolution of Monasteries (Henry VIII), and second by the vectors of Wave Mechanics.

Modernity and the new World Order commenced with the Protestant Reformation and its unary negative, NO to abuses, elites, frauds, and Privilegium. The broad decade surrounding 2010 and 2020 contains a number of important centennial anniversaries including the 900th year birth of Aliénor of Aquitaine in 2022; 800th year of the Magna Carta and the Fourth Lateran Council in 2015; 500th year of the birth of Petrus Ramus in 1515 and the Protestant Reformation in 1517; the 400th year start of the Scientific Revolution and the publications of *Astronomia nova* (Kepler (1609) and *Sidereus Nuncius* Galileo 1610). It is also 100 years since Saussure delivered his 1910-1911 seminars on General Linguistics and ninety years since New Zealanders Marsden and Rutherford led the world into the interior of the atom in 1919. Also during this long decade are a number of ESA and NASA missions to asteroids, comets, moons, and planets coupled with a number of new space telescopes. Thus, the long decade surrounding 2010 and 2020 already provides substantive proof to the power of the sustainable global renewal and renaissance set in motion by the Protestant Reformation.

Old World Order consists of disabling grammars, rational-legal grammars that maintain elites through linguistic abuse of democrats, parliaments, and presidents. From the wrong side of history, the Ratiocinative-Legal is a disabling grammar, a fraud and hoax exactly like the indulgences and relics sold by the Catholic Church during the Fifteenth and Sixteenth centuries. Following Luther the educated citizen base can ask, "Why do we let 'these drones' make such fools and apes out of us?" For, if we combine the Goliard writers (1000 years ago) with the position of Luther (500 years ago), we can conclude, from the historical religious perspective, that legalese is indeed evidence of the Anti-Christ and diabolical triumph and that the Ratiocinative-Legal is just "stinking judge and lawyer crap", as Luther put it boldly, bluntly, and plainly 500 years ago.

Enabling grammars overcome this crisis in legitimization (The Elusive Continent of Stationary Systems) signaled by the work of Mikhail Bakhtin, Henri Bergson, Isaiah Berlin, Pierre Bourdieu, Gregory Chaitin, Jacques Derrida, Sextus Empiricus, Michel Foucault, Umberto Eco, Hans Gadamer, Harold Garfinkel, Clifford Gertz, Johann Hamann, Julia Kristeva, Jean Francois Lyotard, Benoit Mandelbrot, Montesquieu,

Michael Polanyi, Peter Roe, Richard Rorty, Tel Quel (1960-1983), Ludwig Wittgenstein, and Benjamin Whorf. For performance-based enabling grammars disaggregate, decharter, de-license, de-warrant, disassemble, disestablish, dismantle, and dissolve the Tyrannical Space of the Legal Professional Group Dynamic with their Broken Window Culture, i.e., Dulocratic Stealth Network, by installing the democratic, multi-dimensional vectors of Standing Wave Mechanics. Enabling grammars decentralize the governance of Law to a combination of the computational and the Community.

The Protestant Reformation altered Europe from faith-based knowledge systems, a geocentric mindset, and private ruling elites towards an educated citizen base, knowledge-based systems, a heliocentric mindset, and public power. Yet, despite these great achievements, the great task of PROTEST for REFORM remains incomplete, for there still remains the theocratic Court Society with its self-indulgent notions of exceptions, immunities, and privileges embedded within the infrastructure of the public Legislative State. Thus, the Humanist Revolution has stalled, but pressure for change is building up like floodwater behind a shoddily built dam. The spread of Democracy has also stalled, especially in the nations that describe themselves as democratic but are, in actuality, Lacedaemonian. In these Lacedaemonian nations, democracy is stopped at the ballot box and from thence the old theocratic elites with their private ways and "revealed wisdoms" usurp the reins of governance, power, and supreme control.

A megaflood is in the making and a millennial makeover provides the framework by which to direct the momentum of the megaflood towards flushing out the Old World Orders from the New World Order. Deep structural change means deep in time, and deep in time are the 1073 Papal Reforms and the 1215 Lateran Council.

Hermann Grassmann, born near Wittenberg son of a Lutheran minister and spending his working life teaching in civil gymnasiums, and Ferdinand de Saussure, born in Geneva, the home of Calvinism, provide two recent role models for the 500th year celebration, commemoration, and recommitment to the vectors of the Protestant Reformation.

Grassmann, a Neohumanist of Lutheran Germany, stands firmly and squarely upon the foundations of the Protestant and Scientific Revolutions, and either as Christian, Mathematician, Scientist, or Second Language Teacher, he provides a role model not only to the second language teaching profession but also to civilization and global society. Similarly, Saussure, a Neohumanist of Geneva, another great centre of the Protestant and Scientific Revolutions, with his hypercube linguistics and its vectors and discourse waves provides a similar role model. Together, as integrated packages of the Protestant and Scientific Revolutions on the eve of the 500th and 400th

centennials, Grassmann and Saussure provide an advanced and viable linguistic alternative to the ancient model of the Lacedaemonian State whereby to deliver "Woe unto Lawyers" and to carry Civilization on a trajectory away from the terror of the Dark Ages.

Civil peace based on a Standing Wave mechanics is a standing peace, and a civil society based on a standing peace is a stable society. At the same time, the return of emotional intelligence to thought as a human system heals the Cartesian Disjunction.

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