

Development and Implementation of a Method
for
TEACHING THE BIOLOGICAL SCIENCES
FROM A FRAMEWORK
OF NEW CHURCH DOCTRINE

Dr. Reuben P. Bell
Assistant Professor of Biology
Academy of the New Church College
Bryn Athyn, Pennsylvania
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PREFACE

I am a general practitioner, aptly described by some as a "jack of all trades, and master of none." I was born that way. I am a generalist in the way I practice medicine, and the way I teach Biology to college students. Soon I will be a spiritual general practitioner, in the priesthood of the General Church of the New Jerusalem. As a GP, I do not claim to know all the particulars within any discipline - of the medical specialties and subspecialties, of the many specialized branches of the biological sciences, or of the abundance of detail in the Heavenly Doctrines.

But as a GP I do claim to have a love and aptitude for universals, and we are told in several places that these precede particulars in time (AC 245; TCR 714). They are the causes, behind the particulars. I can effectively teach particulars, from books and scholarly journals and specimens and computer programs, because I teach from universals.

This faculty developmental study is about universals: specific New Church universal doctrines from which I am learning to teach the particulars of Biological Science to my college students. It is exciting and rewarding business, with one foot in the past and the other in the future of the New Jerusalem.

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Thanks to Jill Dossey Bell, I can follow dreams like this.

INTRODUCTION: AN HISTORICAL RATIONALE FOR NEW CHURCH EDUCATION

The need for a separate New Church body, and the necessity for a distinctive system of New Church education to serve it, has been debated since the earliest days of an organized New Church. As soon as the theological Writings of Emanuel Swedenborg came to be appreciated for the revelation they claimed to be, the debate over distinctiveness began. John Clowes, one of the earliest receivers of the Writings, argued for a New Church to arise from among the institutions of the Old, with no need for separate church bodies, clergy, or instruction. His separatist views were powerfully put, and his apparent success at spreading the Heavenly doctrines from within the Church of England made a convincing argument for his point of view.

But others could not see a New Jerusalem arising out of the old Christian paradigm without a clean break with Old Church structures and the false doctrines they maintained. In 1787 Robert Hindmarsh founded "the New Church signified by the New Jerusalem in Revelation" as a separate New Church body, and shortly thereafter he called its "First General Conference," to discuss, among other things, New Church education.¹ This separatist position was an obvious, logical progression for some, but for others it would remain a hotly debated issue, persisting to the present as the "permeationist" agenda, and the case against distinctive New Church Education. And this ideological dichotomy would later lead to a schism of the Church.

¹Odhner, Sanfrid, ed., *Toward A New Church University*, Academy of the New Church, Bryn Athyn, PA, 1976, p. 11.

As the Church of the New Jerusalem was transplanted to America, the idea of distinctive education came with it, and by the mid 1800's these ideas found a forum and a form, in the "Academy Movement" within the General Convention of the New Jerusalem, and the person of William Benade, Academy leader and firm believer in distinctive religious education. Benade's Moravian training and experience were brought to bear on this idea, and by 1856 he had founded the first New Church school in Philadelphia. Others would follow, in Chicago in 1879, and later in Bryn Athyn, Pennsylvania.

Opposition to this educational movement was early and strong. Operating within the General Convention of the Church of the New Jerusalem was the same dichotomy which had driven Clowes and Hindmarsh apart, and by the 1850's it had produced a functional separation of the clergy into a northern Boston-based "Convention" faction, and the Philadelphia "Academy." The Rev. Thomas Worcester led the Convention attack on the idea of New Church day schools, and did much to polarize this northern body against their establishment.² Others followed his lead, and the stage was set for a separation of these factions into two church bodies. This issue of New Church Education, along with a similar dichotomy on the authority of the Writings, was important enough to forever change the face of the New Church in the world. New Church Education was to arise from among those of the "Academy."

²Block, Marguerite, *The New Church in the New World*, Swedenborg Publishing Association, New York, 1984, p. 207.

What were the principles that lay behind the dedication of these early leaders in New Church Education? What, in spite of opposition and adversity, led them to establish what was to become the Academy of the New Church and its associated General Church schools? The principles were not abstruse or esoteric. They were based on what the Writings tell us about the human mind, and a person's regeneration.

Benade maintained that rationality - the goal of human mental and spiritual development - was simply being able to see that a thing is true or false, and that education must not block this process. This ability begins in childhood with knowledges from the senses, combined later with learned "facts," and lastly brought together in a relational scheme called rationality. This is the end → cause → effect in all things (TCR 210), presented in use to the developing child, to open the rational and lead not necessarily to his worldly success, but to his *salvation*. There can be no opening of the mind without delight; the ability to think is tied to our ability to feel.³

Benade's rationale for New Church Education is simple, and not surprisingly, it is fundamentally *spiritual*. Parents and teachers, he says, "stand in the place of the Lord to children, and must therefore learn His methods in the reformation and regeneration of man, and apply them to the instruction and

³Benade, William H., *Conversations On Education*, Academy of the New Church Press, Bryn Athyn, PA, 1976, pp. 101-138.

education of children."⁴ He finds his rationale in the Writings, explaining that the purpose of education is to produce good citizens, not of this world, but of *heaven*.

"The human race is the seminary of heaven," and "marriage is the seminary of the human race" (LJ 10; AC 5053, 9961, 6697; HH 384); education for heaven, therefore, involves education for marriage. Marriage is for heaven and is heaven. Marriage is an eternal means to an eternal end, i.e., spiritual life in conjunction with the Divine life.⁵

Education from this perspective led Benade to envision "a great house... of instruction and education,"⁶ that would serve the education of young men and women in generations to come, inspiring them with a spiritual connection for the knowledges accumulated throughout their lives. This education is for life, not just in this world, but in the continuing life of heaven.

Instruction by this scheme does not ignore the secular knowledges of the classroom, but makes them subservient to the student's spiritual education, which must come first. New Church Education is linking the natural with the spiritual, by the presentation of spiritual principles first, then secular things, not in any order of importance, but in the essential and proper sequence of end → cause → effect. Truths presented in this order are more likely to find an enduring place in the memory than unrelated "facts" acquired by rote, and stored in random fashion

⁴Ibid., p. 2.

⁵Ibid., p. 2.

⁶From Benade's speech at the laying of the cornerstone of the Cherry Street School, Philadelphia, PA, September 11, 1856.

without a relational context. What is described here is a rationale for presenting knowledges in the context of a doctrinal framework - a set of simple spiritual principles on which the knowledges can be arranged or ordered for efficient storage and retrieval.

New Church educators have long called for the exploration and development of a doctrinal framework for teaching. Many have proposed such frameworks for the secular disciplines, and although simple in concept, teaching from a doctrinal framework has always proved more challenging than anticipated. But every New Church teacher - in his or her own way - teaches from doctrine, and all of them have developed their own compelling reasons for doing so.

Although these reasons are as varied as the dedicated New Church educators who have formulated them, they all derive from Bishop Benade's simple admonition to teach first to the child's delight, then to his intellect, and to teach always from the spiritual principles of the Heavenly Doctrines. Education is for life, and life is a spiritual entity, which comes to us in the order of heaven. Thoughtful instruction, in the proper ordering of the spiritual to the natural, "is the implantation of living remains, that are afterward to be brought out, drawn out, and led out, or *educated*."⁷

What follows is my own rationale for using this concept in teaching the Biological Sciences at the college level.

⁷Ibid., p. 2.

INTRODUCTION: A PERSONAL RATIONALE FOR NEW CHURCH EDUCATION

I am happily involved in New Church Education. In order to talk about this, I will first define it, keeping in mind that this definition will be a personal statement, and subject to my own experience. And it is obvious that it was well-defined long before me by some very capable, inspired people such as Bishops Benade, De Charms, and W. F. Pendleton, and in my own fortunate experience, Professor E. Bruce Glenn. I cannot aspire to surpass these or other masters of the New Church Academy, but I can build on what they have left to us, and keep moving forward.

I have developed a personal rationale for teaching Biology, as it can only be done in a New Church College. What follows is a brief sketch of the principles that lead me to do this work; my own "Fundamentals of New Church Education:"

The Second Advent is the Internal Sense of the word (AE 36; AC 3900, 4060). All else rests on this. This internal sense is introduced and illuminated in the theological Writings of Emanuel Swedenborg, and the New Church has therefore rightly been called by some the "Church of the Second Advent." New Church Education, then, if it is to be universal and authentic, must arise from the truths of the Word in its internal sense. All our teaching, to be valid and effective, must proceed from this base.

Philosophically, we are told that education is the gaining of Wisdom. In *Proverbs 3:18* we are told that "she is a tree of life to those who embrace her." The apocryphal *Wisdom of Solomon* calls it "a spotless mirror of the working of God." And the

Writings have much to say about Wisdom. But rather than regarding wisdom as an end in itself, they ultimately tell us to look beyond human Wisdom, at the ability to see truths and goods as from the Lord alone. To develop this perspective is education, not the accumulation or ingenious manipulation of facts. Wisdom in and of itself may not constitute truth at all, because truths can be distorted into falsities which can be very compelling to the intellect (AC 6580). Here arises the fundamental problem with Wisdom alone: the Tree of the Knowledge of Good and Evil; freedom to use Wisdom as we see fit.

Therefore real education is not simply the stuffing of facts into eager brains. It is a method for the transmutation of a student into a new spiritual state, the truly rational, where not just facts, but the relation of things learned may be seen. It is the humanizing of a person, in the tempering presence of responsibility, the reciprocal of spiritual freedom.

I believe the uniqueness of New Church Education rests on three premises:

- 1) There is a spiritual/natural continuum (DLW 339); things in both worlds correspond (AR 1), and are connected in use (DLW 310). We teachers must first learn to see this ourselves, and then teach our students to see this as well.
- 2) Spiritual principles correspond to natural principles in recognizable natural, civil, and moral systems operating in our world. We can teach our students to see these principles, in operation, in the world around them.

3) There is great utility in teaching "facts" as having these spiritual roots. It gives our students the ultimate relevance of a context - a spiritual framework - upon which they may arrange the secular knowledges as they accumulate. This provides unity for what might otherwise be unrelated particulars, or wisdom alone.⁸

In *The Messiah About To Come* (1745), we read:

"The Tree of Knowledge leading to the Tree of Life. Science is the key to natural things whereby things heavenly are opened up." (X)

There is no better way to study the spiritual world than the systematic study of all aspects of the natural world of our experience. It is continuous and correspondential with the spiritual world and is a mirror for the spiritual origins of natural things. Through the application of this frame of mind with truths from the Word, we find "the Tree of Knowledge leading to the Tree of Life."

⁸Psychologists have long known that the association of new facts with a contextual framework greatly enhances retention and recall, for future use of data. What could be more appropriate than providing such a context from the revealed spiritual causes of natural things?

FRAMEWORK DOCTRINES

In 1971 Professor E. Bruce Glenn gave an address to the Academy entitled *Distinctiveness in Action*.⁹ In it he described a "framework" of New Church doctrinal first principles, on which could be arranged the knowledges for any particular academic discipline. He cited a study by W. F. Pendleton in 1901 entitled *The Future of the Academy* as the source of his list of these principles.¹⁰ As he pointed out at the time, this idea is not a new one.¹¹

By identifying the doctrines which have particular application in a teacher's discipline, and by stating these as first principles or "framework doctrines" for that discipline, a teacher can then start from a base on which knowledges are built up, in a continuous process of contextual integration. The Writings encourage us to do this, from a variety of contexts. I have selected only a few such passages, to illustrate the fundamental validity of such an idea - See Appendix A: Source Materials: Doctrinal Framework. The alternative is a scenario we all avoid, but which is nonetheless all too familiar: secular

⁹Glenn, E. Bruce, *Distinctiveness in Action (Or why are we here?)*, *Academy Journal Literary Number*, Academy of the New Church, Bryn Athyn, Pennsylvania, 11:2, 1972-73.

¹⁰Pendleton, W. F., *The Future of the Academy*, *New Church Life*, 1901, pp 67-74.

¹¹For a comprehensive historical review of the Framework Doctrine concept with respect to New Church Education, see Sandstrom, Erik E., *Methodology of Applying New Church Doctrine and Perspective in Courses*, Faculty Development Study for the Academy of the New Church College, 1991, pp. 6-28.

knowledges supply the base for the disciplines we teach, on which are hung New Church ornaments. If we are not careful, we can end up teaching standard, secular academic disciplines, from textbooks available to any student in any school, while occasionally throwing out what some of our more acerbic students call "a *Swedenbone*."¹² New Church teaching cannot be effective without a doctrinal framework on which to build our education. Throwing *Swedenbones* is shallow and transparent, and can actually alienate our students.

To be most effective, a framework must be worked out, by the experience of trial and error over time, and by the systematic approach of many minds - the collective brain of all our faculty, from **Kindergarten to College**. Then it can be presented to our students as an introduction to their educational process - not as an appendage to it. The appropriate framework doctrines must be identified, defined, and then presented to our students at all levels.

How do we present the doctrine of discrete and continuous degrees to our kindergartners? Fourth-graders? High school Sophomores? We need to, because by the time they come to the Academy College, they should already be familiar with the

¹²Example of a *Swedenbone*: While teaching that Carolus Linnaeus originated the system of Binomial Nomenclature for animal and plant taxonomy, the teacher also notes that Linnaeus and Emanuel Swedenborg were related through the former's marriage to a cousin of the latter. Students fail to see the relevance of this kind of connection, and for some it appears contrived and artificial. They are not reticent to point this out.

spiritual principles behind 1) cell populations in development, 2) nervous and vascular system arborization, and 3) the activity of neuronal pools in perception, to name just three biological processes which operate according to degrees. Because if they know the relational scheme of degrees, these things will make sense - immediately - illuminated by their spiritual connections and resting firmly in a context of spiritual reality. They will understand and anticipate the "default" nature of discrete and continuous degrees in the relationship of things in naturally occurring systems. Knowledge of this doctrine and others with a bearing on Biology can be introduced at all levels of the student's academic life, from Kindergarten to the College classroom. What a system this could be!

PURPOSE OF THIS STUDY

Determining how to do this is the work of New Church teachers - all of us, in a collective effort to produce a seamless continuum of **Kindergarten through College** for New Church Education. The purpose of this study is to present my own contribution to this effort in a list of framework doctrines germane to Biological Science at the college level. I will then offer a proposal for a course at the Academy of the New Church College, in which this doctrinal base will be presented to students in the new Biological and Chemical Sciences Major.

I intend to make this the beginning of a continuous exchange of ideas with other New Church School teachers; the work of a collective brain in deciding how to teach these core doctrines at all levels. In the process, these doctrines will be discussed, rearranged, added to, and perfected, to better suit the needs of all participants. And our treatment of Biological Science in New Church schools will soon show the effects of this effort.

What I have in mind is not a top-down reformation of our curriculum (although curriculum revision may well go hand-in-hand with this effort). What I have in mind is a bottom-up approach to distinctiveness in New Church Education. It is what all of us New Church teachers already do, every day, but collected into a universal network and plan for all to share. No more elementary/secondary/college education - just a plan for teaching framework doctrines, **K through C!** And the effort will be from individuals,

motivated and united by the delight this discussion will bring.

What follows is a summary of my own approach to teaching from a doctrinal framework. It is not a finished product, but is instead a work in progress; the beginnings of a process that will never end. But what is exciting about it is that this is no longer a plan, or a proposal, or a recommendation. I am doing it, in my classroom, and it is working!¹³

¹³We teachers are too often reluctant to share what we are doing because it isn't a finished product; what we do is often tentative, and we may fear that appearance. There is no progress from this way of thinking, and we limit ourselves by working in isolation. The human brain is not just a lot of neurons - it is all the neurons, listening and talking to each other at the same time! We can emulate this process, using computers in a network.

A METHOD FOR TEACHING BIOLOGY FROM DOCTRINE

At this time I have no single system for introducing all my students to the spiritual implications of what they will be learning in their Biology classes. In a less than ideal manner, I introduce the same concepts in more than one of my classes, primarily those which are introductory in nature (Environmental Biology, General Biology I, and General Biology II). Some students are necessarily exposed to the same lectures more than once, and this redundancy is presently unavoidable. In the upper level classes I attempt to present the subject matter with respect to the ideas introduced in these earlier lectures, referring to those seminal concepts where appropriate. It is obvious to me that the more systematically this introductory material is presented, the greater will be the opportunity to integrate framework doctrines within the course material. It is to that end that I plan to teach a separate Freshman-level course in this introductory material alone.

What follows is a general summary of the ideas I now cover at the beginning of a typical introductory level course:

PRELIMINARIES

Providence in History

I begin with the history of science in one class period, using what I call my "*Roadmap of the History of Science.*"

(Appendix B) The two main points of this presentation are to demonstrate that 1) Providence is at work in historical movements

of people and ideas, and 2) science is a specific method, and as such, is a relatively new development in our world.

From the form of the outline, it is immediately obvious that the science (actually the proto-science) of the Greeks takes a major "detour" into the Middle East at the time of the sacking of Rome by the Visigoths in 410 AD. This is a graphical representation of the safekeeping of "science" during the European Dark Ages. The detour ends with the emergence of Scholasticism in the 12th Century, and the ancient knowledge, much perfected and expanded during its seven century Muslim sojourn, returns to the Schoolmen of Europe.

What we have at this point is not yet really science, as it is defined today. By tracing the evolution of science into the present, I identify Galileo with its birth (15th Century), although I point out that the idea was not his, but originated in the 11th Century, with enigmatic Roger Bacon. Although he described the method, he never actually bothered to use it! Galileo's popular and notorious use of the scientific method established it as the standard for all subsequent natural philosophers to meet. This was only about 350 years ago.

Science as it is done in this day is new, and it was "rescued" by the Muslims in a strangely coincidental exchange of ideas at a very crucial historical interval. This was no coincidence. It was Providence at work, in shaping the Biology they are about to learn, and they will see other clear examples of this same principle at work, in their studies to come.

"Your Three Eyes:" Ways of Thinking

From here I move to an explanation of the Scientific Method, and I try to show its limitations, or boundaries, with respect to confirming spiritual truths from natural phenomena. In the continuum of *end -> cause -> effect*, the scientific method is limited to the *cause -> effect* side of the continuum, and cannot comment on the end (purpose) part. In fact, to attempt to confirm "matters of faith" (and therefore the presence of spiritual things) from "rational things" (or scientific facts) is called "inverted order," or the "negative principle," and results in "all folly and insanity." (AC 2568)

With this very important limitation in mind, I introduce the idea that the scientific method, although a valid way of thinking, is not the only way. It attends to details (effects, not the Big Picture), and is based on experience (is objective in nature - is sense-based). I tell my students that they have three eyes for finding truth, and science is only one of them. Philosophy looks at the Big Picture (the bigger the better), is based on logical proofs, and also relies on experience for validity (is also objective in nature). Our third eye, religion, finds truths from the Word and the Writings for the New Church - the Big Picture, like philosophy, but based not on experience, but revelation. Can this be objective? It must be, if our religion is based on Truth. Our experience in the world must square with what it tells us, for are we not now "permitted to enter with understanding into the mysteries of faith?" I invite

my students to test the things they are taught, with their rational minds, and their developing spiritual tools. And I make them a promise: If they practice good science, good philosophy, and good theology, then all three eyes will converge on the same truths, from different and complementary angles, with greater depth and clarity than any two eyes, or one eye alone. They can learn to see truth as few ever do. This is New Church Education!

Only then do I introduce the **framework doctrines**, because only at this point is the student able to understand them in the proper context of Revelation, and appreciate Revelation for what it is and where it fits in our educational scheme:

Scientific Method

univ.-> part.
objective (exp)

Philosophy

part.-> univ.
objective (exp)

Theology

universals
revelation (exp)

The outline for this lecture is in Appendix C.

The Doctrines I have selected as most appropriate to provide a framework for the teaching of Biology have come together from trial-and-error use in the classroom. Some were selected in advance, for their obvious utility, and others (joyfully) just appeared, mid-sentence, in a discussion of some biological principle or other. The list has compiled itself, over time, and will no doubt be different to some degree next year (which illustrates the evolutionary nature of this work, and underscores the obvious appeal of a group effort in doing it). The list is not long; I am trying to establish a framework, not a superstructure, for Biology. The doctrines are presented in abbreviated form, in no particular order. I emphasize here that

my selections of Framework Doctrines are not "carved in granite,"¹⁴ but are, as stated above, a "work in progress."

The use of these Doctrines is based on the understanding that Nature is the influx of the Divine into the natural world in such a manner that the principles basic to all creation (order, form from function, the conjugal principle, discrete and continuous degrees, etc.) are made manifest there. What we see in Nature is these spiritual principles (causes) operating as natural things (effects). They are dynamic, palpable, and quite real. To properly study and understand Nature, one must first understand the laws of the universe governing the behavior of all things. These will apply to what we see in Nature, and will allow us to understand what we observe. We will see the causes behind the effects, and comprehend the end (spiritual purpose) from which both arise.

¹⁴They are, quite literally, electrostatically encoded on little plastic disks, by some method unknown to me, but which, by their very nature, invite revision and effortless exchange across the surreal time and space of computer networks. This is the future of New Church Education!

FRAMEWORK DOCTRINES FOR BIOLOGY

THE LORD IS ORDER ITSELF (AC 1871; TCR 52-55, 71; DLW 29)

1. What appears to us (from within nature) as chaos or randomness, is in fact ORDER, if it could be viewed from outside the system. But only the Lord is outside time and space. Life, with its characteristic behaviors and strategies represents order in the highest degree. Recent mathematical investigations into the surprising presence of order in apparently disorderly systems, provide illustration for this spiritual principle.
2. Many processes of nature (often called natural laws, because of their predictability) serve to separate, subdivide, and compartmentalize space and resources, although the behavior of living things may appear random. This can be seen in natural selection, instinctive territoriality, etc.

INFLUX (Continual Creation) (DLW 390; AE 1146:4-5; TCR 504)

1. *END* -> *CAUSE* -> *EFFECT* is simultaneous and continuous: block this series and everything downstream ceases to exist. Every natural thing (an effect) has a cause, whether it is obvious or not. Causes are often processes, which can be simple or quite complicated. The fun in Biology is not just in naming things, but in finding causes.
2. Ecological succession, morphological change over geological time, embryological development/ ageing, and many more examples.

3. The natural world is process, not static creation; it exhibits "coming into being" in all its forms. This spiritual principle underlies the process of evolution, whatever that poorly understood process may be.

FORM FOLLOWS FUNCTION (DLW 46; TCR 12) - a MAJOR concept

1. The influx from the spiritual world can only be manifested in natural form, if the proper receptacle preëxists it. This receptacle is its function or use. It is this principle which defines the correspondence between spiritual and natural things.
2. "Forms are only containants of uses." (DLW 46)
3. Evolution is the coming-into-being of new forms, flowing into niches (functions, uses). Loss of niche produces extinction (the form ceases to exist when its function disappears).
4. A key doctrine for understanding anatomy (morphology, functional design) as well.

THE GRAND MAN OF HEAVEN (AC 3624-5726, interchapter material)

1. This is a single source for everything human.
2. This material provides unique insight for the study of Anatomy and Physiology. It explains the necessity for the forms and processes we see, and brings to life the otherwise obscure ancient doctrine of "man the microcosm."
3. This provides a good introduction to the idea of biological diversity (the more forms the merrier).

CORRESPONDENCE (AC 2987-3485, interchapter material)

1. Everything natural has a spiritual source. Knowledge of this is from revelation alone (this is your third eye).
2. Studying natural forms helps us comprehend spiritual principles ("seeing " the heart & lungs with your "third eye" is "seeing" the marriage of Love & Wisdom in the Lord Himself).
3. Correspondence between a spiritual thing and its natural counterpart is in the mutual use these things perform in their respective worlds. This links them, but by a mechanism independent of time or space (which is the solution to the old problem of pantheism, the weak link in so many theological systems). This principle, properly understood, is one of the major triumphs of New Church theology.

DOCTRINE OF DEGREES (DLW 173-235) - a HUGE doctrine

1. This is the structural arrangement underlying all natural things: it governs the arborization of neurons, the form of the blood and lymphatic vessels, the formation of landforms, the hierarchical arrangement of the phylogenetic tree, the cascade effect in cell differentiation, the structure of animal societies, human institutions, and on and on and on.
2. This principle operates in all things of nature. For successful planning and design, building from this plan is essential.

THE CONJUGIAL PRINCIPLE (AC 54, 477, 718, 1432; CL 84-5; also found in Swedenborg's *Principia*, Ch. 1,2,3: see p. 84. #12)

1. There is a reciprocal dualism inherent in all things of the natural and spiritual world. This is a reflection of the operation of the Divine Love & Wisdom, flowing into all things on all planes.
2. Matter and energy, electrons and protons, the "active of the 1st finite and 2nd finite" in Swedenborg's "elementary particle, *yin* and *yang*, male and female, and myriad other examples.
3. This is another MAJOR doctrine which governs so much of what we see in natural forms and processes. It is the most powerful testimony in all the Writings, to the presence of the Lord in all created things. A summary of some these relationships identified across many cultures is presented in Appendix E.

The problem with these Framework Doctrines at this time is that I am trying to fit them (as well as the other introductory material described above) into the introductory lectures in my Freshman-level classes. This is not ideal. Not all students get the advantage of this material, not all understand why I am including it when I do (and not forging ahead into the textbook material), and the overall impact is not as great as it might be in a different system. But as things that evolve, the form fits the function, and as the function undergoes change, so must the form adapt to these new necessities (we know this is true because

it is based on spiritual principles - see above, under Form & Function). The doctrinal framework section for my Biology classes has developed and grown until it is time to rethink the form in which it is taught. No longer fragmentary and loosely arranged, this method is taking on a life of its own!

It is from this necessity that I am proposing a new course in the Academy College to accommodate the teaching of this essential material in a more coherent context - to do what I am already doing, but to do it better. What follows is an outline of this course proposal, which will be presented to the faculty of the Academy of the New Church College, for implementation at the earliest appropriate time.

COURSE PROPOSAL: FRAMEWORK DOCTRINES FOR BIOLOGICAL SCIENCE

Due to the increasing necessity for the systematic introduction of doctrinal framework material in my introductory Biology classes, I am proposing to add a class to our ANCC curriculum, called "**Framework Doctrines for Biology.**" At present I am introducing this material at the beginning of these classes, and this is becoming less efficient as the emphasis on this material has been increased.

I refer you to a study I have recently concluded entitled *TEACHING THE BIOLOGICAL SCIENCES FROM A FRAMEWORK OF NEW CHURCH DOCTRINE*, for a detailed discussion of my rationale for developing this course. In short, I propose to teach the following sections in a one-credit-hour class to freshmen students enrolled in the Biological and Chemical Sciences Major in The Academy of the New Church College:

1. Introduction: The necessity for teaching from doctrine
2. Providence in the History of Science
3. "Your Three Eyes": Ways of knowing what we know.

A Doctrinal Framework for the Natural Sciences:

4. The Lord is Order Itself
 5. Influx
 6. Form and Function
 7. The Universal Human
 8. Correspondence
 9. Doctrine of Degrees
 10. The Conjugal Principle
11. Summary and Introduction to the Major

This course is designed to be completed in eleven sessions; once weekly during an eleven-week term. I anticipate that the ideal term might be Fall, the first term of the freshman year. Besides the weekly classes with assignments from the Writings, mid-term and term projects or papers are anticipated.

I am uncertain about the College Division within which this course might most properly reside. It is not a "History and Philosophy of Science" type course, it is not a "Science and Religion" course, and it is not a "hard science" course either, for that matter. Perhaps it should exist as a specialized course within the Religion Division. This is something the faculty could determine through discussion. I am willing to teach it in any Division.

"Framework Doctrines for Biology" is not designed to be a ponderous requirement for Biological/Chemical Sciences majors. It is just as it says: an introduction to the framework upon which our students will build their knowledge of the Natural

Sciences in their years at the Academy College.

SUMMARY AND CONCLUSIONS

The idea of producing a unique educational experience by teaching from a framework of New Church doctrine is not new. This was one of the fundamental dreams which fueled the American New Church Academy Movement as long ago as the 1850's. Many have written and talked about how to go about this, and I am sure that all New Church teachers have tried to do this - each in his or her own way. But all too often, perhaps, this is done in a sort of isolation, where a single mind invents a doctrinal "wheel," and in time another teacher comes along and invents it all over again. There needs to be more communication on the methods of teaching from doctrine, as well as the discussion of other teaching methods and techniques.

Although what has occurred in the past (and there has been a lot) has been significant, there has never been a systematic effort to bring New Church teachers together on a frequently regular (say, weekly, or even daily!) basis and let their collective mind do the rest. Efforts to do this have of course been limited in the past, (virtually impossible in fact) due to the obvious constraints of distance, postal delay, and the necessary restriction of "real-time" telephone communication. Putting together a "collective brain" has been a very difficult thing to do. But that is changing. Soon, computers will allow us the freedom to "network" our ideas as never before possible, and this effortless and nearly universal communication system

will finally unite us New Church teachers in our common purpose.

Common purpose... For most teachers, it is teaching (a noble enough common purpose), but for us, it is more. It is teaching from a framework of spiritual principles that supplies the END (or purpose) to the CAUSES and EFFECTS we teach.

Rev. Cairns Henderson said this very well in the introduction to his notes on Homiletics currently in use in our Theological School:¹⁵

"When spiritual light is cast on natural things their real cause, true purpose, and proper use are seen. The use intended by the Lord in the creation of the forces and objects of nature, and thus the proper use of them in relation to human needs, is revealed; and, most important of all, the Lord Himself is seen; for when natural things are so regarded, the Divine love and wisdom are seen at work in creation, are seen as the Divine of use."

"Casting spiritual light on natural things..." That is our common purpose. That is what inspired William Benade to build the Cherry Street School, in Philadelphia, in 1856. And that is what inspired Benade, John Pitcairn, Walter Childs, and Franklin Ballou to get together over a little lunch, one day in 1874, and launch The **Academy of the New Jerusalem**. What a day that must have been!

That is the common purpose of New Church Education to this day, and I believe that our mission rests on this single principle - our duty to continue in that common purpose in the

¹⁵Henderson, W. Cairns, Homiletics, Academy of the New Church Theological School. Text material for Homiletics 812 & 813.

future: *casting spiritual light on natural things*. It is not complicated. As we are successful in this use, so shall we prosper. And as we neglect it, so shall we falter. If we abandon it as our central principle, we will surely fail. It is the source of our distinctiveness, which has always been the lifeblood of our schools. People often talk about the distinctiveness of New Church Education, identifying it as the key to our success. But just knowing of the Doctrines won't get the job done (we know that faith is nothing until it works, in use). Everything we know must be put into action if our classrooms are to truly radiate distinctiveness.

A covenant is a contract. The theme of the 1995 General Church Education council was renewing the covenant we New Church teachers have made with the Lord. Our part of that covenant for teaching from doctrine is *casting spiritual light on natural things*, continuing the vision of the Academy's founders, who had a grand vision of this indeed. In an 1856 speech by Bishop Benade,¹⁶ he describes the "house" they were dedicating that day - the Cherry Street Church School in Philadelphia - as a place of instruction in spiritual and natural truths. He had that house. He was laying its cornerstone. But his vision didn't stop there. He saw more houses, just like it, and even more than that,

"in the midst of all, and high above all, a *Great House*, a wonderful house of science and knowledge, of instruction and education, with its youth and young men... with its learning and intelligence and wisdom extending to all sides, and to

¹⁶Odhner, Sanfrid, Towards a New Church University, Bryn Athyn, PA, p. 19. (From the text of Benade's 1856 speech.)

all parts, flowing into and forming and conforming all the lesser and least houses into accord and agreement with itself, being to them as a perpetual fountain for the replenishing of their uses, and receiving from them its supplies of needed material, to elaborate and send forth again and again, in performing its great universal use."

Bishop Benade was laying the cornerstone of a great school system, not just the Cherry Street School, and he knew it.

Think about that... The Academy College is that Great House! We have lesser and least houses, in our system, now, with New Church teachers teaching from doctrine in all of them. This is not pie in the sky. It is real! But it is not finished, either. Pendleton Hall is a pretty small *Great House*, if you get right down to it, and we only have about a hundred students, and it's not air-conditioned, but it's our *Great House* and it is time to renew our covenant to cast spiritual light on natural things, with the Lord's help, any way we can do it. And when we do that, our *Great House* will become all the greater (that is the other half of the covenant) until it fits Benade's vision, because that's our vision too.

I would like to see three things happen during my tenure at the Academy College. They are not unreasonable, and they are not my ideas alone. They come from all the New Church teachers I talk to, as I travel around and visit our schools. These ideas will take us into the next century in style.

The first of these things is a little change in our attitude about ourselves: As New Church teachers, we are among the most elite of educators. How many of us do you suppose there are in the world? All of us would not fill the Pendleton Hall

Auditorium, much less Bryn Athyn's Cathedral. A New Church Teacher is by definition an expert. New Church teachers are experts, and what we do is unique among educators of the world!

Second, I want all of us to realize that this covenant of ours is not complicated. Teaching from doctrine is our part of the covenant with the Lord. When we do it He will bless our efforts (we have all seen this work!) This may not be easy, but it is simple.

Third, I want to look back on my tenure at ANCC, and know that I was involved in a process that took us into twenty-first century. What process? A continuous process, that is never finished, but only perfected, to eternity; a bottom-up process that doesn't need a study by the Office of Education, approval by any committees, or any new funding.

"It" is FRAMEWORK DOCTRINE WORKGROUPS (FDW's): People within academic disciplines sharing ideas on 1) what their framework doctrines are, and 2) how to teach these SEAMLESSLY, from Kindergarten through College, so that the secular knowledges we teach can find a home in the context of spiritual reality. How will these WORKGROUPS work? If they are to work they will have to have an organic form. We all know that.

We already have a model for these workgroups: they will work like a human brain. A brain is really an enormous community of neurons, each with its own individual function, and it is by its function that a type of neuron is defined. Until these neurons begin to interact you just have neurons, but when they

are connected and functionally integrated, as in life, something really spooky happens. This community takes on a "life" of its own, and the resultant sum is greater than its parts! There is mind, where there was only matter. What does this? These neurons have thousands of connections to other neurons - inputs and outputs, (this is the good part) that are constantly talking and listening to their neighbors at the same time. Mind from matter. Networking.

We aren't doing that. We're good neurons, but we don't have enough connections, and we are not talking and listening to each other enough - the function that makes us greater than ourselves. We could be so much more! We need inputs and outputs, all working at the same time. Impossible? Our Framework Doctrine Workgroups will be like brains, and they will become greater than their participants. Neurons... constantly talking and listening at the same time, perfecting the plan, perfecting the method: **casting spiritual light on natural things**. This is going to happen, and everyone is invited!

How am I so sure that I am right about this Doctrinal Framework idea? Am I just an upstart from out-of-town, and new at teaching? Yes, but this framework notion comes pretty highly recommended as well; there are several good references which tell me I am on the right track. Bishop Benade told us to use it, as early as 1856.¹⁷ Bishop Pendleton told us to use it in 1901, in

¹⁷Op. cit. Odhner, p. 22.

a speech published in *New Church Life*.¹⁸ Bishop de Charms told us to use it in 1932, in his *Growth of the Mind*.¹⁹ Bruce Glenn told us to use it, in a speech published in the *Academy Journal* for 1972-73.²⁰ Geoffrey Childs told us to use it, in 1989, in an address to the General Faculty.²¹ Erik E. Sandstrom told us to use it, in his developmental study of 1991,²² and Prescott Rogers told us to use it in a little article in *New Church Teacher* in 1993.²³ I think we should use it.

I will allow Bishop Benade himself to conclude this Development Study, as he completes his vision for the Cherry Street School in 1856, and the dream to follow. He was also speaking for us, as we begin the Twenty-First Century:

"My brethren - we have this day actually begun a great work, however small and insignificant may be its first appearance, and however weak and feeble may be the hands which have laid unto it; a work, which as I verily believe, has a future of unmeasurable extension, and untold use.

And having put our hands to the plough, it is not for us to look *back*, but *forward* and *upward*, to gird our loins for the labor which lies before us, to seek for strength and light, where alone they can be found; and to *do* in this our day and generation *our duty* as in the very presence of God.

¹⁸Op. cit., Pendleton, p. 4.

¹⁹de Charms, George, The Growth of the Mind, Academy Book Room, Bryn Athyn PA, 1953

²⁰Op. cit., Glenn, E. Bruce, p.4.

²¹Childs, Geoffrey, Distinctive New church Education, A talk to the Academy Faculties, Sept. 5, 1989, Unpublished manuscript.

²²Sandstrom, Erik E., Methodology of Applying New Church Doctrine and Perspective in Courses: A research Study of the Ideal of New Church Education, Unpublished manuscript, 1991.

²³Rogers, Prescott A., Tool Doctrines: Correspondences, *New Church Teacher*, 1993.

In order that we may do our duty, we must ever strive to know and understand it better; to love it more truly and fully, and to be willing to deny ourselves for its more certain fulfillment.

In the house which we are about to erect, our children are to be educated and instructed in those sciences and knowledges which pertain to their spiritual and natural existence; and for the performance of this use, we must provide the means. Our number is small and our abilities limited, and every one of us will be called to practice self-denial and self-sacrifice, in order that we may not fail, and our end remain unfulfilled. The way before us is new and untried, we shall have need of much good counsel, wise prudence, and sober and intelligent foresight. Trials will come, difficulties will arise, and obstacles will meet us in our way, and we shall require much charity, kindly forbearance, and mutual support. But all these things which we need, for the accomplishment of our purpose, we have not of our own to give; they are the LORD'S and HIS alone. To HIM therefore we must go, in humility and sincerity of heart, with openness of mind, that we may receive them, to give again for the work HE has pointed out for us to do.

To HIM we must look, in HIS Word, and in the doctrines of HIS Church, for that instruction and knowledge which shall enable us to go forward in the right path."

I believe that if our universal system of New Church Education is to survive in the next century, it is the distinctiveness of a central doctrinal framework that will work the magic. We all do it, in our own way, but that is not enough. We will have to make this our central theme and work, if our schools are truly to be distinctive. If our New Church Schools are not distinctive, they will perform no unique use, and as "forms are only containants of uses," (DLW 46) they will gradually fade away.

APPENDIX

Appendix A:

Source Materials: Doctrinal Framework

The Tree of Knowledge Leading to the Tree of Life.
Science is the key to natural things whereby things heavenly
are opened up. *The Messiah About to Come*, X (1745)

TCR 714 That particulars may be retained in their order and connection, it is necessary that there should be universals from which they spring and in which they rest; and it is also necessary that particulars should in a certain image answer to their universals, otherwise the whole would perish together with its parts. This relation has caused all things in the universe to be preserved in their integrity, from the first day of creation until now, and to still continue. That all things in the universe have relation to good and truth is well known. This is because all things were created by God from the Divine good of love by means of the Divine truth of wisdom. Take anything you please, an animal, a shrub or a stone, and you will find these three most universal principles inscribed upon them in a kind of relationship.

AC 2568 As regards man it is one thing to regard the doctrine of faith from rational things, and altogether another to regard rational things from the doctrine of faith. To regard the doctrine of faith from rational things is not to believe in the Word, or in the doctrine thence derived, until one is persuaded from rational things that it is so; whereas to regard rational things from the doctrine of faith is first to believe in the Word, or in the doctrine therefrom, and then to confirm the same by rational things. The former is inverted order, and results in nothing being believed; whereas the latter is genuine order, and causes the man to believe the better. There are therefore two principles; one of which leads to all folly and insanity, and the other to all intelligence and wisdom. The former principle is to deny all things, or to say in the heart that we cannot believe them until we are convinced by what we can apprehend, or perceive by the senses; this is the principle that leads to all folly and insanity, and is to be called the negative principle. The other principle is to affirm the things which are of doctrine from the Word, or to think and believe within ourselves that they are true because the Lord has said them: this is the principle that leads to all intelligence and wisdom, and is to be called the affirmative principle.

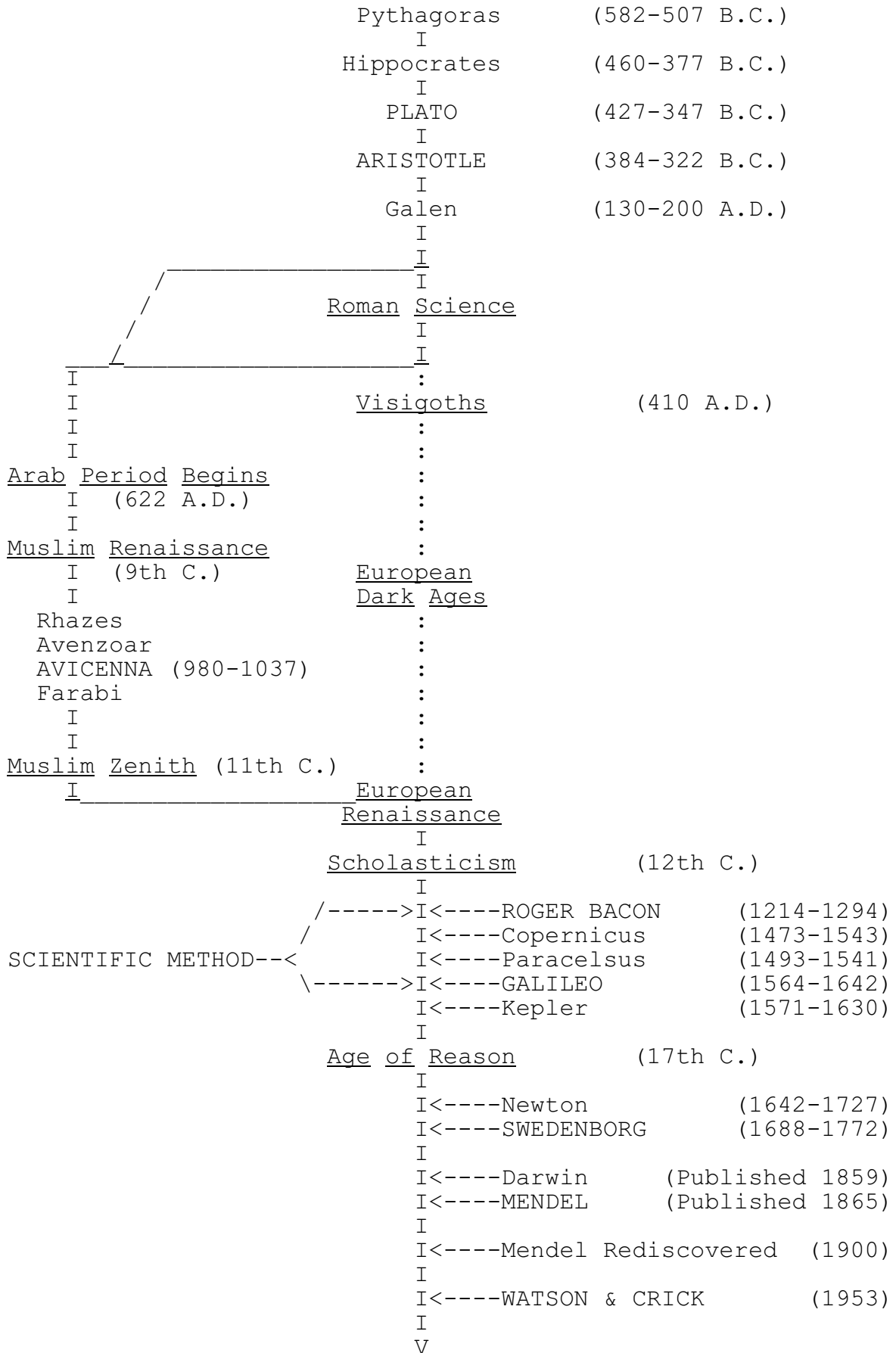
The more they who think from the negative principle consult things rational, the more they consult memory-knowledges, and the more they consult things philosophical, the more do they cast and precipitate themselves into darkness, until at last they deny all things. The causes of this are, that no one can apprehend higher things from lower ones, that is, spiritual and celestial things, still less Divine things, from lower ones, because they transcend

all understanding, and moreover everything is then involved in negatives from that principle. On the other hand, they who think from an affirmative principle can confirm themselves by whatever things rational, by whatever memory-knowledges, and whatever things philosophic they have at command; for all these are to them things confirmatory, and give them a fuller idea of the matter.

AC 6580 With the man who is a spiritual church there is life from the internal in the memory-knowledges of the church; for the memory-knowledges with him are made subordinate, and reduced into such order that they receive the influx of good and of truth, so as to be receptacles of influx from the internal. It is otherwise with those who are not a church, the memory-knowledges with these persons being so disposed that things confirmatory of truth and good have been rejected to the sides, thus far removed from the light of heaven; and thereafter the things that remain are receptive of falsity and evil.

AC 3310 Doctrinal things are the interior truths that belong to the natural man. The first truths are of sense, the next are of memory-knowledge, the interior ones are of doctrine. These doctrinal truths are founded upon truths of memory-knowledge, for man can form and retain no idea, notion, or conception of them except from memory-knowledges. But truths of memory-knowledge are founded upon truths of the senses, for without sensuous things no memory-knowledges can be comprehended by man. In this way do these truths follow in succession with man; and therefore until he is of adult age, and through truths of sense and of memory-knowledge is in doctrinal truths, no man is able to be regenerated, for he cannot be confirmed in the truths of doctrine, except by means of ideas derived from the things of memory-knowledge and of sense. For nothing is possible in man's thought, even as to the deepest arcanum of faith, that is not attended with a natural and sensuous idea, although the man is for the most part ignorant of the nature of it; but in the other life, if he desires it, it is presented to view before his understanding, and even, if he so wishes, before his sight; for however incredible it may appear, in the other life such things can be presented to the sight.

Appendix B: **A ROADMAP OF THE HISTORY OF SCIENCE**



Appendix C: "Your Three Eyes" (Lecture Outline)

I have three eyes

They are systems of thought. We will look at:

Their evolutionary History

The nature of each

A close look at what science is and isn't

EVOLUTIONARY HISTORY

Theology (religion) first - from prehistory - early paradigm

Nature worship - Stonehenge, etc.

Accept all things as produced by the "whim of the gods"

Not systematic; episodic

Not comprehensible (lead to the "Mysteries of Faith")

Some think theology can only be this way

Philosophy

Born of a perceived pattern in natural events

Lead to formulation of rules based on observation and experience

Could be theistic, but the "mind of God," i.e., the WHY not really necessary

Lead to many systems proposed to explain the experience

Presocratics - static, of flux?

Plato -> Aristotle: the nature of reality - What is matter?

The Churchmen (Augustine, etc.): used Plato and Aristotle to back up Church doctrine

Descartes - a dualistic universe

Leibnitz - all matter from *monads*

Kant - a *priori* knowledge necessary to know the "thing in itself"

The Existentialists - the ultimate move away from the Creator - Humanism (Swedenborg's Naturalism); modern nihilists

Science - a newcomer to the world (350 years or so)

Born along the way - offspring of empirical philosophy

13th C. Roger Bacon (not Francis) (1214-1292) -> Galileo (1564-1642)

Based on only what can be observed (experience) - nothing else allowed

Tends to lead in a direction apart from philosophy theology

THE NATURE OF YOUR THREE EYES

Theology (from revelation)

Testable? not by empiricism (reproducible experiments)

A belief system

(review its evolution from part I)

So is it valid? How do we know?

YOUR THREE EYES (CONT.)

Three possibilities in answering these questions:

1. reject it - simplifies things nicely - humanists and atheists fit here
2. accept it blindly - still too simple - does not involve the rational mind - fundies fit here
3. apply your rational mind to it - but compared to what? [def: rational = ratio]

The nature of revelation - has changed over time:

MAC: direct influx

AC: angels

Moses: face-to-face

Prophets: spiritual dreams & states

The Word

Internal Sense of the Word

Order in Nature

Philosophy

Application of the rational mind to finding order in Nature

It describes (Aristotle was a great describer) and then

explains, in general terms how the world works - paints the BIG PICTURE

Sometimes very detailed and very rigorous (boring) because all depends on the rational arguments supporting the system in each step.

Embraces universals - if good enough, particulars will fall into place

What is missing from this picture? [putting the ideas to the test]

Science

It is what happens when you put an idea to the test and let the results lead you to universals - no cheating/no wishful thinking allowed!

The offspring of philosophy, but how is it different?

It is a method to suit all occasions (the rules)

It embraces (proves) particulars - if good enough, the universals fall into line

Sort of reductionist philosophy from Missouri

How are these related?

Each is an incomplete method to find the truth about something [the nature of things].

Each is **ONE EYE**, which sees truth in its own special (and limited) way.

Let's look at the third eye (science), and see how it works - What it is and what it isn't, and find out why it seems at times to have nearly replaced the other two:

YOUR THREE EYES (CONT.)

Scientific Method

- A. A series of deductions based upon a question or an idea (a premise is formed)
- B. Follows an orderly operation of the mind (is rational)
- C. Seems simple (it is), but as an accepted method of interpreting reality, it is only a little more than 400 years old at the most! How can this be?
 - 1. Sure, many before had studied natural phenomena and reported their findings - educated guesses and deductions to explain these from direct observation.
 - a. Hippocrates, Aristotle, Galen, etc.: were Greeks; very accurate observations (too accurate, maybe); these were the authorities until the 12th Century!
 - 2. As the "Roadmap of the History of Science" indicates, the tradition of the Greeks was not lost during the Dark Ages in Europe - just shifted to the Arab middle-east and the dawning "Muslim Renaissance."
 - a. with rise of Scholasticism in Europe, the Greeks were rediscovered
 - b. "knowledge" was coming out of mothballs -> new knowledge was to emerge from this - a process was being born.
 - c. Church resistance to this new knowledge continued (as in the Dark Ages), if it disagreed with accepted theological doctrine.
- D. It fell to **GALILEO** to change the status quo of scholarship.
 - a. Up to this: Observation -> deduction -> reporting (and make sure your deductions are OK with Rome)
 - b. Galileo changed the method to one of inquiry (change was long overdue). He used a simple, systematic, reproducible method to record and communicate his findings:

premise -> methods -> results -> discussion -> conclusions

The premise is a question, the methods are experiments, or testing your premise, and more questions follow the conclusions, in a never-ending process of discovery.

- c. He began to study the individual details of experience (rolling balls, falling bodies, pendulums, atmospheric pressure, the movement of the heavenly bodies (big trouble from this), etc. He did it systematically.
 - 1. This was a novel approach - no regard for the BIG PICTURE (no preconceived notion of outcome) - "just the facts, ma'am."
 - 2. This changed the course of history!

YOUR THREE EYES (CONT.)

How could this be? Two big reasons:

1. It stood philosophy on its head (turned it upside-down).
2. It implied that theology must be accountable for what it decreed (accountability). It was tested against _____ experience! WOW!

This "revolution" in thinking was not easy - it was dangerous

1. Copernicus sat on his "Revolution of the Heavenly Bodies" for 20 years, publishing it only when he was dying - afraid of the Pope.
2. Why be afraid of the Pope? Ask Giordano Bruno (a maverick genius of the day - oops, you can't, the Pope had him burned alive, in 1600).
3. Galileo able to press it a little
 - a. very popular figure with the masses (a celebrity)
 - b. buddies with Pope Urban VIII - made a deal to publish a book with both viewpoints [Copernican & Ptolemaic] on the solar system ("Dialog Concerning the Two Great World Systems") - tricked the Pope
 - c. still got pinched by the Inquisition

This method, then (innocent as it may seem) changed the world - Why? It produced profound change on three levels:

1. It was a method - invited reproduction and testing (even rebuttal!)
2. It studied details without respect to the system they served (philosophy upside-down)
3. It was not concerned about the compatibility of findings with accepted theological dogma

Which brings us to our original question: How does this relate to Philosophy and Theology? Are they different? Yes. Are they similar? Yes. Can they be compatible? Yes - they must be.

Philosophy explains things from the top down, deals with generalities (knowing, existence, the nature of matter, etc.) - the BIG PICTURE.

1. It will explain the details if it is good enough
2. So science is not philosophy - it is the reciprocal of it
 - a. deals with details - explains things from the _____ bottom-up - will explain the BIG PICTURE if it is _____ good enough.

So where does Theology fit into this scheme? Does it indeed fit at all? Some are quick to say no.

1. It is the third side of a grand **trinity of knowing**:
 - 3 disciplines, all striving for exactly the same thing!
 - a. Philosophy: explains universals by experience
 - b. Science: explains details by experience

YOUR THREE EYES (CONT.)

c. Theology: explains the same things, but from revelation! (humanists head for the door at this)

But wait! Theology is intestable, right? Wring! Revelation reveals the nature of what we experience - if it is good Theology, it will prove true when tested against experience. Tested??? (Now we're doing science again) And if a philosophical system is good Philosophy, it will also prove true against experience.

And the source for our knowledge matter little, if the facts prove out.

Truth is what this is all about: Science, Philosophy, Theology all seek the truth. Different kinds of truth? No - all attempt to explain the same reality. The all is one.

We must always use all three of our eyes: We must do good Science (and this means honest Science), good Philosophy (rational, critical thinking), and good Theology (based firmly on the Word and the Writings for the New Church)

As we do these things, the apparent differences between these disciplines will melt away, and we begin to see truth with a clarity that is astonishing.

Appendix E:

**EXPRESSIONS OF THE RECIPROCAL DUALISM FOUND IN ALL THINGS,
REFLECTING THE INHERENT BINARY NATURE OF THE CREATOR**

<u>ACTIVE</u>	<u>PASSIVE</u>	
Esse (being)	Existere (taking form)	
Wisdom	Love	
Truth	Good	
Faith	Charity	
Understanding	Will	
Spiritual	Celestial	
Knowledge	Affection	
Male	Female	
Soul	Body	
Light	Heat	
Thought	Affection	
Active of 1st Finite	2nd Finite	(Principia)
"Judgment"	"Righteousness"	(OT ²⁴)
Light	Life	(NT ²⁵)
Essence	Vessels	(Kabbalah ²⁶)
Beriah	Atzilot	"
Being	Becoming (Appearing)	(Indian)
Yin	Yang	(Chinese)
Energy	Matter	(Physics)
Positive Charge	Negative Charge	"
Pure Being	<i>materia prima</i>	(Alchemy ²⁷)
King	Queen	"
Quicksilver	Sulfur	"
Sun	Moon	"

²⁴A common reciprocal pair of Old Testament theology, to be found in several places. To this pair the Kabbalists added the mediating force of Mercy. (G. Sholem, *Kabbalah*)

²⁵John 1:4; One of the great concepts of this Gospel. An OT link is found in Psalm 36:9.

²⁶The *Sefirot* of the *Zohar* have both these aspects, analogous to soul and body. This was an attempt to deal with the issue of pantheistic connection of Creator and creation. (G. Sholem, *Major Trends in Jewish Mysticism*)

²⁷The true nature of *materia prima* reveals itself to the extent to which it interacts with Pure Being and takes on form. These four pairs are representatives of this marriage of the passive and the active elements. (From T. Burckhardt, *Alchemy*)

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