

# Practical Thinking

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## An Essay on the Evolution of Science (Part 1)

by Ed Ferlauto

Our ancient ancestors saw that when the sun rose, light appeared, and when the sun went down, darkness descended. Only in relatively recent centuries did we start to understand the mechanisms of these celestial events: the Earth's rotation on its axis causes day and night; its tilt and journey around the sun bring our yearly seasonal changes; and, even more astonishing, our sun is only one small star in a vast cosmic sea of stars and galaxies moving in "space," which is still not fully understood.

While it took most of human history to gain basic scientific understanding of our solar system, in the twentieth century, astrophysicists have learned an astonishing amount about our universe. The twenty-first century is still young, but it promises to bring us even more startling discoveries and, perhaps, an entirely new understanding of our place in the universe.

This essay is about human inquisitiveness through the ages. Broadly speaking it is a brief review from the beliefs of early societies to the accomplishments of modern science with a look to what we can expect in the foreseeable future. This essay incorporates a definition of science based on Webster's New Universal Unabridged Dictionary, where science is defined in quite a few ways, all of which include *knowledge; systemized knowledge based on observation, or a study concerned with establishing and systemizing facts, principles and methods as by experiments and hypotheses; also the systemized knowledge of nature and the physical world or any branch of this.*

Different civilizations and societies have asked similar questions and responded in different ways. The questions and the methods to answer those questions as they have evolved over the ages reveal similarities that are worth exploring. Looking at some of the questions may help us to understand what has been accomplished and lend insight about where we may go in the future.

A quote from the Foreword of Jeffery Sach's new book *Common Wealth* states "we all operate by a world view distorted by the residues of hereditary human nature. We exist in a bizarre combination of Stone Age emotions, medieval beliefs, and god-like technology."<sup>1</sup> This concept is not surprising since human brain anatomy has probably not altered since the beginning of recorded history. A recent report in the *Economist* (Feb. 4-10, 2012, p. 81) states that the location of genes in the dorsolateral prefrontal cortex (abstract reasoning and social behavior) and the lateral cerebellar cortex (linked to manual abilities) gives special plasticity to the human brain, rendering it more receptive to change than the brains of

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earlier species. This genetic advance occurred after human and Neanderthal lines separated about 300,000 years ago.

Stephen Hawking, in his book *A Brief History of Time* includes a short account of Galileo Galilei. The opening sentence states “Galileo, perhaps more than any other single person, was responsible for the birth of modern science.”<sup>2</sup> Even though the work for which Galileo is most famous was based on astronomical observations, it paved the way for a more generally abstract view of human life. Modern science bases the origin of the universe on the big bang hypothesis. This view differs from the earlier civilizations’ stories, many of which resulted from or included observations of the heavens. Those observations and the stories that accompanied them were a key part of older cultures, and similar questions exist today. How did we originate and what can we measure that tells us where we are in space and time?

Stories developed by ancient societies in different parts of the world are called “myths,” derived from the Greek word *muthos* meaning story or fable. “The chief difference between them and our modern scientific story of the big bang is that modern science is self-questioning and we perform experiments and observations to test our ideas,” according to Carl Sagan.<sup>3</sup>

The idea of modern science that best defines the basics of the universe is perhaps quantum mechanics. Quantum mechanics is expressed with its associated mathematics, which can also be used to define string theory (although the marriage of these concepts currently eludes us). Nevertheless, mathematics, although it may represent reality, is not the actuality of what exists in nature. It is a representation; the method by which we explore nature so we can describe it. It provides the myth by which we comprehend.

### Origin of Life: RNA/DNA

**M**arduk, the hero of the Babylonian myth of creation, set out to fashion the contents of heaven. He made stations for the great gods, set up three constellations for each of the twelve months of the year and the signs of the zodiac. Then Marduk made the moon and the sun. This narrative is written on a clay cuneiform tablet that once stood in the public square of the first-millennium BCE Babylon (in what is today Iraq).<sup>4</sup>

Stories from the Aztec and Mayan cultures also tell about creation as it relates to the lives of citizens and the sun, moon, and stars.

A sixteenth century Spanish chronicler of the Aztecs<sup>4</sup> attributed the following to them: “This is plain—that there in, Teotihuacan, they say, is the place; the time was when there was still darkness. There all the gods assembled and consulted among themselves who would bear upon his back the burden of rule, who would be the sun.”

Creation for the Navajo consists of the slow emergence by people through layers in the earth. With each successive emergence people become more domesticated until finally they are civilized enough to reach the earth’s surface, where they are destined to become the custodians.

The first natural belief of the Greek people was that man had sprung from the earth. They saw the tender plants and flowers force their way through the ground in the early spring after the frost of winter had disappeared; so they concluded that man must also have issued from the earth in a similar manner. Man, like plants, had no cultivation and resembled in his habits the untamed beasts of the field. In the course of time human beings became tamed and civilized by the gods.<sup>5</sup>

The forces that produced life in the myths of earlier cultures have little basis in fact but nevertheless should be honored for their contributions to organized civilizations. The difference between ancient myths and modern explanations of the beginning (i.e. big bang), is a lack of science and technology in the modern sense. Our own myth in a sense is based upon the scientific process of using well documented facts, observation, experimentation, and deduction.

The starting point of life on Earth has not been proven scientifically yet but we have a pretty good idea of what may have occurred. It was demonstrated by Stanley Miller and Harold Urey in 1953<sup>6</sup> that amino acids can be synthesized with a sparked mixture of methane, ammonia, water vapor, and hydrogen. These components are believed to have been present on the early Earth. Saturn’s moon, Titan, which contains methane and other ingredients that may result in the formation of amino acids, has been studied with a landing on its surface. Since conditions on Titan include very cold temperatures, which would slow down potential chemical reactions, it could be a laboratory to reveal what actually happened in nature here on earth.

Amino acids are required to make proteins. Other compounds such as ribose, a sugar, and nitrogenous bases such as adenine are also required for life as we know it. The stabilizing effect of boron-containing minerals on the sugar ribose strengthens the idea that chemical reactions on the surface of minerals, including possible catalytic

effects, played an important role in the chemical reactions in a pre-biotic soup.<sup>7</sup>

DNA (deoxyribonucleic acid) is the genetic material which contains the blueprint or plan for all forms of life. Many scientists believe that the first replicating pre-life molecules were RNA (ribonucleic acid) molecules, not DNA molecules. RNA is much more reactive, is more easily synthesized and more prone to mutation, all of which conditions are necessary for the process of evolution to begin.

Theories of how RNA was formed fall into two broad categories. These are “replicator first” in which a large molecule capable of replicating, such as RNA, forms by chance chemical reactions. Second is “metabolism first” in which small molecules formed a network of reactions driven by an energy source.<sup>8</sup> However that debate is resolved, our modern sciences have come very close to understanding the origin of life.

Pointedly, understanding the origin of life has been a goal from even before the beginning of recorded history.

## Human Beginnings

P. Lurquin states in his book *Evolution and Religious Creation Myths*: “All cultures of the world have origin myths, or religious stories of how the world, life, and especially human life, or the existence of particular people, came to be.” For example, the creation account in Genesis says humans are apart from and dominant over nature. Fish, plants, and beasts were given by God to humans for food. The creation as told in Genesis occurred over a period of seven days approximately 6,000 years ago. This belief is part of many religions and is in stark contrast to the evolutionary account as reviewed by Charles Darwin in the *Origin of Species*.<sup>7</sup>

On April 25, 1953, the classic paper by James Watson and Francis Crick was published in the journal *Nature*.<sup>9</sup> That paper described the double helix structure of DNA and noted that the structure suggests a possible copying mechanism for genetic material. The same journal also reported work by Rosalind Franklin and Ray Gosling showing evidence of the helical nature of nucleic acids and the conclusion that the phosphate backbone lies on the outside of the structure.<sup>10</sup>

While some investigators grapple with “replicator first/mechanism first” and attempt to create life from mixtures of early earth chemicals, others have been working with the human genome.<sup>7</sup> These explorations exemplify the “put together vs. break apart” approaches to the essence of life. The human genome project has been termed the most difficult scientific endeavor ever attempted. It had

its beginnings in the early 1980s and resulted in a race to the finish between the U.S.-government-sponsored team headed by Francis Collins and the privately funded effort by Craig Venter.

In its infancy the Genome Project was predicted to revolutionize the practice of medicine and change the field of genetics. Now it will force us to grapple with perplexing moral and ethical questions: Does the right to privatize extend to one’s genetic code? Is that right absolute? If not, under what conditions can someone else—for example, one’s government, doctor, insurance company, or employer—have access to one’s personal version of the human genome.

Once we understand the genetic basis of everything from high blood pressure to schizophrenia, from Huntington’s disease to musical genius, we may need to ask about the conditions under which it could be ethical to alter the genes in our ova and sperm and thus change the shape and characteristics of future generations.<sup>7</sup> Francis Collins, in his book *Language of God* states that gene therapy would be successful in fighting cystic fibrosis.<sup>11</sup> The Food and Drug Administration reported on January 31, 2012, that Kaydeco, a product resulting from gene therapy, was effective in treating people with that life-shortening disease, which impairs the lungs and digestive system. The twice-a-day pill is among the first drugs designed to correct a specific genetic defect.

Adjusting human genetics creates many philosophical questions that return us to the primeval questions of our beginnings.

*This article will conclude in the next issue of Practical Thinking.*

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# MISF and Fiscal Agency

*by David Megarry*

One of the benefits of membership in the Minnesota Independent Scholars' Forum is the Fiscal Agency feature. A Scholar can apply for a grant as an individual and use the Scholars' Forum as the Fiscal Agent to satisfy the fiduciary needs of a grantor organization. Those grantor entities can be more comfortable giving monies to a Scholar if there is an intermediary organization to manage the funds. The MISF Fiscal Agency is such an intermediary organization.

Finding an individual grant is not an easy task. Only 5% of grantor organizations allow grants to individuals. Any given topic of interest to a Scholar may not have a grantor organization interested in funding research in that topic. Though these facts may be discouraging, there are resources to find grants and those resources are in our own backyard, if you will excuse the colloquialism.

The Hennepin County Library (HCL) Main Branch in downtown Minneapolis has grant-finding materials and processes to help Scholars find grants. The material is located on the fourth floor in the Southwest corner. HCL has subscribed to the Foundation Center Cooperating Collection (FCCC) and has purchased access to all the FCCC materials, both manual and electronic formats. The Foundation Center is a non-profit organization, located in the State of New York, whose mission is to identify and disperse information about grants and grantors in the United States. The Foundation Center updates the information on a regular basis so available grants are kept current.

The manual process for finding grants is very comfortable for Scholars: a 20-foot bookshelf with three shelves, filled with large indices and catalogs of printed material, organized with a color-coded system. The categories are wonderful: red stickers for general information, white stickers for Federal Government grants, yellow stickers for Minnesota State grants, blue stickers for corporate grantors, and blue stars for international grants. There are silver stars for statistics of philanthropic giving, green stickers for how to write grants, gold stars for non-grant fund raising, and black stickers for non-profit management information. There are even periodicals devoted to grant news and announcements. In addition, the collection contains the government mandated reports by grantor organizations, which are mostly public information. All in all, it's a massive wealth of information.

Hours and hours can be spent, perusing the entries in an encyclopedic morass, looking for the 'needle in the haystack.' I admit I am attracted to the manual process: a heavy printed book always feels better in the hand than a flimsy mouse. Still, there is power in the electronic side of the FCCC which should not be underestimated.

The HCL has purchased the most expensive subscription to the FCCC. This level of subscription allows multiple simultaneous users and mostly unlimited time to use the online material. HCL has dedicated six PC terminals for this purpose. To use a terminal, the Scholar needs to check in at the fourth floor desk to sign up for a two-hour session. The librarians will set up a terminal and password for your use. The two-hour session is absolute: if you haven't saved your search to a flash drive or emailed the info to yourself, the session ends abruptly and the information will be lost. If you need more time, go to the desk about fifteen minutes before the session ends and they will add more time (unless there is a waiting list for the terminals). The Scholar needs to have a HCL card to use this system.

Once on the computer, the Scholar can search the FCCC databases, using the search interface on the [foundationcenter.org](http://foundationcenter.org) web page. Searches can be quite specific but also elaborate. It was pointed out by the librarian that there is going to be an optimum level of findings for any search criteria: 10,000 hits is too much but 1 is too refined (unless, of course, it happens to be the right one!!). The librarian thought 25 to 50 hits was a good number, not too much that they couldn't be investigated in the session time allowed, but enough to give a breadth to the findings.

Each finding will link to the information of the grantor, with instructions as to how to apply for the grant, what information will be needed and the deadlines for filing the grant proposal. It is important that Scholars follow the grantor instructions since missing information or submissions in the wrong form will lead to no further consideration by the grantor.

The HCL is also a subscriber to a Minnesota-only grant database system. The Scholar also signs up for this system at the fourth floor desk. There can only be one person using this database at a time so access may be limited if there are several people wanting to use that interface.

The HCL has an information session the second

Wednesday of every month at 10:30 A.M. They show you how the manual and electronic interfaces work and give you some hands on time to become familiar with the FCCC web page. There is no sign-up for this session; just show up and you will be included in the presentation.

So, Scholars, define your passion and then head on down to the library and find the grantor that believes in it!

*David Megarry is a member of the MISF board with special responsibility for Fiscal Agency. This article is the third in our continuing series on how to do independent scholarship.*

## Museumization

The Minnesota History Center's blockbuster "1968" exhibit definitely got museum visitors talking—during and after the exhibit. I made a pilgrimage to the History Center for the exhibit and came away with these thoughts.

Reflecting on my Martin Luther King Day visit evokes vivid images not so much of the exhibit but of the visitors. First there were the young folks (because it was Martin Luther King Day the audience was skewed to the school-age crowd.) The boys were exploding with military adrenalin at the very sight of the helicopter (which I found almost unbearable); I heard in-depth discussions of the relative effectiveness of grenades vs. rifles—the kill-power was of great concern to a couple of pre-teens in particular. The little girls seemed more concerned with their own 2012-era finery and the blaring music from ancient times than with the subtleties of feminism.

And then there were the moms and dads—"That was five years before Mommy was born..." was the sort of phrase I heard repeatedly. These were good parents, trying to expose their kids to history they themselves had learned about from stories their elders passed down or from documentaries. They knew the big names (Humphrey, the Beatles, Robert Kennedy) and many had a dad or granddad who had served in Vietnam.

It was the grandparents I watched with the keenest interest. They were quiet, reflective, remembering. Me, too. I was remembering where I was, with whom, what I was wearing during the protests, the day King died, the torturous Democratic Convention in Chicago, the Children's Crusade led by McCarthy. I remembered the music, the clothes, the funeral of Martin Luther King (which I listened to time after time.)

The memories and reflective spirit have been with

me since. I've talked with friends about our reactions. Underwhelmed, we said to each other. We were there. We know what it was like. We had friends and family members in Vietnam. We marched for civil rights and against the war. For my part I was working at a predominantly African American college in inner-city Washington, DC, throughout that tumultuous year so life in a burning city is etched permanently in my living memory, along with the strident voices of "women's lib" before it had a clear thrust, much less a handle.

The Minnesota History Center exhibit was captivating, informative and a fine tip of the historic iceberg it represented. It was a good thing for Minnesotans of every age.

Still, what chaffs for some of us who were submerged in all that—the war, the riots, the murder, the music—is that we have been "museum-ized." We were not the observers but the subject of the exhibit. We wanted to shout out, to inform the visitor's experience with our own perceptions and experiences.

When I mentioned this concept of museumization to a group, one friend was quick to recollect a visit that he and his wife had made to a history of technology exhibit. They were early computer geeks, when computers were behemoth and geeks had not yet become a career option. After viewing the punch cards and IBM 360 machines behind glass enclosures, these early adapters concluded that they too should be behind glass as part of the exhibit—museumized in real time.

We expect museums to explore and expose remote relics of the past to those of us who are living and learning from a position of power built on the progress of humankind and on our power to shape the story. It's a different and uncomfortable experience to find oneself as the subject being memorialized on film or in a photo. The universal response seems to be an irresistible urge to correct, or at least augment, the story.

This bit of introspection is helping me understand with newfound clarity the response American Indians have to the depiction and interpretation of their role in Minnesota history. Though this was not the intent of "1968," for me it's a healthy byproduct of a memorable museum experience.

Museumization is not easy for a person or for a people.

*Mary Treacy is a library administrator and information policy wonk. She was formerly the director of Metronet and of the Minnesota Coalition on Government Information. She has been involved at the national and state levels with information policy. Mary is also a blogger and citizen journalist. You can find her at <http://marytreacy.wordpress.com>."*

## Book Review

### Why School? Reclaiming Education for All of Us

by Mike Rose, 177 pages, The New Press: 2009.

Reviewed by Dennis Schapiro

Not a bad question.

Especially in a time when countless scoundrels offer solutions to school problems, based on failing to ask “why?”

This slim collection of thirteen essays is not the sort of book that would make the recommended reading lists of many groups.

Certainly not the many education “reformers,” who seem to have accepted an answer to the question: we school to beat Finland in international test score comparisons—no excuses. Nor would it appeal to those who figure we school in the unionized public sector until private sector schools—charters—seize control.

For Rose, the author or co-author of eight other books on young people and their education, we school because schools create opportunity. Teachers and their schools are the second and third chances in life that lay at the core of the American Dream. Rose believes that a teacher can change lives and that a school is an institution central to democratic society.

Coming from modest family circumstances, he writes of his experience:

*“Education gave me the competence and confidence to independently seek out information and make decisions, to advocate for myself and my parents and those I taught, to probe political issues, to resist simple answers to messy social problems, to assure that I could figure things out and act on what I learned.”*

He is convinced that teachers did it for him, a kid who through most of his public school years never felt the spark. He has developed a love of learning, especially for nontraditional education. He finds great benefits in the apprenticeships and on-the-job training where he sees so many people who struggle in schools thrive.

Rose is not your standard school critic or supporter. He sees shortcomings and he sees schools that do not teach the young people they serve. He sees schools so fully immersed in standards-talk that they do not hear students.

The essays address current issues in eight to twenty pages each.

They do not necessarily add up to a whole. They present ideas and arguments that will appeal to most independent scholars.

Some examples that will ring true:

Poverty, Rose asserts, does not make academic achievement impossible, but it creates barriers. One bad break can undermine a great deal of effort and thoughtful work for a child living on the edge.

Test preparation work may boost test scores, but leave real learning behind.

No Child Left Behind meets a real need to focus attention on those who do not succeed in school, but it does so at the expense of student learning.

What might the business community’s culpability be for the current state of American education? Business press releases begin by touting their contributions, but their basic message is that the value of an education is economic.

These sorts of concerns have been voiced before—often in bits and pieces, often in commentaries from teachers or former teachers. But they have not been gathered together so well in a single voice, with a single sense of purpose.

The book has been out for more than a year and not gotten much notice. Is it because Rose is not fully aligned with one camp? Or do writers not know what to do with it?

We know that our schools are under great pressure now, often from people who have little idea of what happens in them. A bit of attention to Rose’s work would help expand their knowledge of what it is that they so mercilessly pummel and perhaps inspire a bit of curiosity. That would be a real public benefit.

*Dennis Schapiro is a member of the board of the Minnesota Independent Scholars Forum and editor of Public School Montessorian. From 2002 to 2004, he served on the Minneapolis Board of Education.*

## N.C. I. S.

No, not that NCIS. The National Coalition of Independent Scholars ([www.ncis.org](http://www.ncis.org)) is an organization, based in California, for scholars who have degrees or are publishing, but who do not have an affiliation with an academic institution. NCIS has an annual meeting, offers small grants, and runs an online newsletter accessible to all interested readers. They are frequently soliciting articles for their newsletter and would be happy to hear from any of us. Check them out!

## Stand Up!:

### The Story of Minnesota's Protest Tradition

by Rhoda Gilman, 168 pages,  
Minnesota Historical Society: 2012.

Reviewed by Robert Brusic

As an eighth grader in Passaic, New Jersey, I was once obliged to do a project on an assigned state. I recall telling how the state I was given, Minnesota, had a large number of lakes and a lot of iron mining somewhere upstate. The capital was the city of St. Paul; but there was much farming and open space in the rest of the state. I duly noted how far away that large midwestern state was from New Jersey. And I remember being especially impressed at how much of the Mississippi River flowed through the state, and how it provided power at the falls in Minneapolis. Except for the fact that I drew what I thought was an impressive freehand outline of the state, that was about the sum total of what I knew about Minnesota for a long time.

After awhile, though, I came to hear about some important people in Minnesota history like Charles Lindbergh, Hubert Humphrey, and Walter Mondale. And after I moved here in the late 1980s I became familiar with such historic figures as Henry Sibley and Alexander Ramsey as well as such later luminaries as Paul Wellstone, Elmer L. Andersen, Michelle Bachman, and Jesse Ventura.

However, after reading Rhoda Gilman's account of Minnesota's protest tradition, I have come to know these characters and many others a little better, for they all appear in the book. Many of them, though, like Thomas Lowry or Jane Grey Swisshelm, make only brief cameo appearances. If the book were somewhat longer, readers like me could have a deeper acquaintance with and appreciation of these and many other people who have made their mark in Minnesota's history.

Gilman's book, though, is not really intended to be a history of the state like William Folwell's *A History of Minnesota* or even Gilman's earlier historical study, *The Story of Minnesota's Past*. Rather, *Stand Up!* swiftly limns the many and varied personalities and issues that have helped shape the people, the geography, and the politics of the state. At the outset Gilman observes: "Some regard Minnesota's political culture as moralistic and some see it as radical, but most would agree that it has been a seedbed for cultural and political movements that have changed the country, and its history weaves a pattern of wide opposition between left and right."(1)

In less than one hundred fifty pages and in fifteen brief chapters Gilman offers a group of focused snapshots that broaden the knowledge and appreciation of the reader, even those that come from as far away as New Jersey. I should think that people born in Minnesotans would also be impressed and learn a great deal from reading this book.

The story begins when the territory was organized in 1849. The primary issue then was claiming the land which appeared to be empty but really wasn't. The rush to claim land for settlement rode roughshod over those native Americans who were already living in the land. Gilman gives shape to the tension by quoting a poem from St. Paul's first newspaper which contains this repeated refrain:

*Yet millions of hands want acres,  
And millions of acres want hands.* (6)

The story unspools by referencing Indian displacement, lust for land, and land grants to the railroads. Ironically, the issue is a perduring one, with echoes reverberating in the present day.

Each chapter swoops in and, in a very compressed manner, outlines the varying issues that elicited interest, activity, and protest in the subsequent sixteen decades. Gilman points to such social and political issues as populism, strikes and unions, communist activities, Indian rights, race, gay issues, ecopolitics, contested elections, and many others.

It could be argued that other states have evinced and dealt with these and similar issues throughout their history. But Gilman's perspective as a Minnesotan portrays her particular state as one that has exerted national influence and has been regarded as a "state that works." She recognizes the dark side of the state's history (land misuse, extinction of species, poisonous pollution, sexual and racial inequality, etc). Yet in the end she remains, if not optimistic, at least hopeful about the future.

"In facing the need for change, Minnesota's most precious asset will be its tradition of uniting against injustice and against the concentrated power of money and corporations. It has bred a sense of community, and the persistent call for social justice and human rights harmonizes fundamentally with the undercurrent of religious and spiritual ethics that has helped shape the state."(148). Had I known back in the eighth grade what I have come to learn about Minnesota after reading Gilman's book, I think I might have received a much better grade.

*Robert Brusic is a retired clergyman and a docent at the Minneapolis Institute of Arts. He is the spouse of the editor of this journal and often fills in as a resident writer.*

October 15, 2011

## Twos and Surfaces

Joe Amato addressed the Scholars' meeting Saturday October 15. His topic was Twos and Surfaces, which are the subjects of two books he has recently completed. *Surfaces* has been accepted by the University of California Press. *A Matter of Twos* was still looking for a publisher at the time of this talk.

Amato began by explaining that he writes in three categories. First he writes about locality and region, that is he writes about the southwestern part of Minnesota where he has lived for many years. His best known work in this category is *Rethinking Home: Approaches to Local History*. In this book, he tried to bridge the gap between professional historians and amateur historians.

The second category in which he writes is that of poetry; as a hobby, he writes poetry as a personal memoir.

In the third category, Amato writes something he calls a mixture of history and metaphysics. Amato has tried to describe how we construct time and how myths construct the meaning of an historical event. It is his conviction that we need myths and metaphors to understand history. His two recent books are in this category of metaphysical investigation. He spoke about these two books.

With respect to *A Matter of Twos*, Amato explained his conviction that we cannot know about things without making distinctions between them. We work in worlds of twos every time we represent or describe something. For example, we frequently describe something in terms of what it is and what it is not.

Furthermore, we have a kind of built-in binary system: man/women; odd/even; noise/quiet; hot/cold.

We use "twos" as a way of distinguishing things from other things.

Many of our descriptions of the world, especially metaphorical ones, use "twos." Twos can be tight or loose. Some philosophical expressions that show how we think in twos are dualities, polarities, ambiguities, antinomies, and contradictions. We often use metaphorical language with these terms to describe aspects of reality.

For example, religious experience is sometimes described as awe and sometimes as terror; the self is sometimes described as against the other; Martin Luther understands man as both saint and sinner. The Enlightenment and Romanticism are often understood as polarities, but Amato suggested that some contradictions (romanticism vs. enlightenment being one of them) can also be understood

as a band or a spectrum. In such a case, contradictions are actually stages on a continuum.

Amato also engaged in a short discussion of his second book *Surfaces*, in which he proposes to engage the idea that humans have skins (a giant surface), make tools (a specific and useful surface), and decorate walls (a personal surface). Unfortunately this reviewer had to leave before Amato had fully explored these subjects.

Joe Amato received his BA in history from the University of Michigan in 1960; his MA from the Université de Laval, Québec, in 1963; his Ph. D. from the University of Rochester in 1970. In 1969 Amato began teaching at Southwest State in Marshall, MN, where he was a founder and chair of the History Department. His book, *Rethinking Home: The Case for Local History* was reviewed in this publication in 2002. He is also the author of several other books.

November 19, 2011

## Row, Row, Row

David Wiggins, a supervisory Park Ranger for the Mississippi River National Park, used the metaphor of the flow of the Mississippi River to frame his reflections on life, history, and the future in a talk to the Minnesota Independent Scholars' Forum on November 19. The talk was titled "Row, Row, Row Your Boat."

Wiggins, who frequently leads school children on river trips in large voyageur canoes, has made up new lyrics to the familiar melody. "I can see...a fluid understanding of the meaning of all that came down; I can see...an approximate definition of what is going on; I can see almost clearly the river of the future disappear ...." After leading the audience in singing these new lyrics, followed by the refrain of "life is but a dream," Wiggins continued with his talk.

First he talked about the meaning of "what came down" by talking about patterns of use of the Mississippi River. The Dakota Indians were coming to the Mississippi River at least 10,000 years ago; a 10,000 year-old artifact has been found at the Sibley house. The Dakota people regard the confluence of the Mississippi and Minnesota Rivers as their place of origin. The Dakota use of the river had a seasonal dynamic; in the fall they burned off the underbrush and in the spring they planted corn along the fertile river bank.

Later the river became the site for Fort Snelling and a sawmill and the conduit for some 1000 steamboats bringing settlers and immigrants to the state. In one of the more shameful episodes of Minnesota history these same steamboats took the Dakota Indians away after the Dakota Uprising in 1862.



Wiggins reminded his listeners that we can tease out patterns in history, but that it is not all predictable. For example, the collapse of the 35W bridge over the Mississippi was an example of an unpredictable event.

To continue with Wiggins's metaphor, we can see presently certain patterns, but we cannot see it all. On the one hand, some wildlife is returning to the river as we allow native vegetation to come back. On the other hand, agriculture along the Mississippi (specifically the type of agriculture that uses crop land to raise fodder for livestock) is destroying the river. Lake Pepin is silting in and the "dead zone" at the delta of the Mississippi is growing bigger on account of our plowing the land, using fertilizer, and even building giant parking lots where farms used to be. We are becoming more thoughtful about the health of the river, but there is still much to do and there is determined resistance to some needed changes.

Wiggins's point was that we must focus on the whole system, that what we do both individually and corporately makes a difference.

In the wider picture for the future, it is apparent that living systems on the river bank determine the form of the river. Currently, for the near future, the Park Service is recommending that the two upper locks be closed to prevent Asian carp from moving into the lakes in Northern Minnesota.

Further it might be possible to restore the rapids in order to provide a breeding ground for sturgeon and other native species. In a wider view, Wiggins suggested that it is possible that eco-systems, like other systems, will balance themselves out if allowed to do so. It is possible that the Asian carp population would stabilize as has the European carp. In a still longer view, Wiggins can make the point that we might need to rethink our methods of agriculture—how much meat do we really need to eat?

Wiggins concluded by saying that he sees optimism and pessimism as two ends on a scale. We have adapted in the past and will need to do so again. We will need to have some balance of self-regulation and government regulation, but it is still up to us to make smart decisions. After all we are the people in the canoe.

January 21, 2012

## Who Wrote Shakespeare?

George Anderson began his talk on January 21 by changing his title to "William Shakespeare—the Authorship Conjecture."

Anderson pointed out that many people over the years have doubted that the person we think of as William Shakespeare wrote the plays we think of as the work of Shakespeare. Among the doubters have been such notables as Ben Jonson, Thomas Jefferson, and John Adams. The evidence against Shakespeare consists of a lack of school records for him and a lack of provenance, notes, drafts, or fragments for the plays. Only six signatures belonging to Shakespeare are known and all of them appear on legal documents. According to the doubters, the lack of a strong connection to the person we can legally identify as William Shakespeare suggests some other author for the plays and sonnets.

One possible candidate for the authorship is Edward de Vere. De Vere was born in 1550 as the only son of John de Vere, the sixteenth earl of Oxford. When John de Vere died in 1562, Edward became a ward of Queen Elizabeth I and was raised in the household of her principal secretary, William Cecil. Edward was essentially home-schooled and is known to have made at least one year-long trip to Italy, in 1575-1576.

The evidence for de Vere consists, among other things, in a commonality of expressions between the plays and an annotated copy of the Geneva Bible known to have belonged to de Vere. There are over 250 expressions from the Geneva Bible that appear in the Shakespearean plays. Anderson focussed particularly on the expression "full of bread," which appears in Ezekiel 16:49: "Behold, this was the iniquity of thy sister Sodom, pride, fullness of bread, and abundance of idleness." Hamlet uses a similar expression in his soliloquy about his father's murder: "..took my father grossly, full of bread.." (Hamlet 3.3: 77-100) Hamlet's meaning is taken to be that his father was in a state of sin because he was not fasting.

Other evidence of an alternate authorship comes from the many references to Italy in the Shakespearean plays. Especially compelling are the references to the sycamores where Romeo hides at the west city wall of Verona. Additionally the volcano in "The Tempest" seems to have been born of some real knowledge about volcanic outbursts. Certainly, there are no volcanos to observe in England, and there is no evidence that Shakespeare was ever in Italy.

Who ever wrote the plays was taking older stories from Greek legends and the like and making them into plays—so disputing the authorship is not to suggest plagiarism. One suggestion is that de Vere adopted the identity of William Shakespeare as an alias to disguise his own identity because he was writing history plays that were critical of the monarchy while his protector, William Cecil, was part of the power structure.

Two books for additional reading are *Shakespeare by Another Name: The Life of Edward de Vere, Earl of Oxford, The Man who Was Shakespeare* by Mark Anderson (New York: Gotham, 2005) and *This Star of England: "William Shakes-speare" Man of the Renaissance* by Dorothy and Charlton Ogburn (New York: Coward-McCann, 1952). Mark Anderson is George Anderson's son.

Anderson is a former president of the Scholars and a retired chemist. He has been working on the Shakespeare authorship question for seventeen years.

February 18, 2012

## The Arab Spring

Dr. Fatma Reda and Maged Makled discussed the subject of the Arab Spring before an audience of about thirty people at the MISF monthly meeting, Saturday, February 18.

The incident that began the Arab Spring was the beating (and subsequent death) of Khaled Mohammed Said, a 28-year old from Alexandria. As Makled (who is from Alexandria) explained, police power in Egypt has long been absolute, arbitrary, and corrupt. According to Makled, the Arab Spring had been building for a long time. Although the Egyptians as a people are very patient, there had been police corruption at least since the early 1950s when emergency laws were enacted to protect Hosni Mubarak from assassination. An important distinction here is that the police in Egypt are completely corrupt; the army is less corrupt though hardly happy to allow large groups to congregate.

According to Makled, when the revolution started, there was no leader, only great solidarity with people "singing and staying all night on the square while security forces (the army) watched." What people were rebelling against was the very corrupt and brutal behavior of the police (as opposed to the army), and pictures of police brutality were circulated on YouTube.

However, people in power are always reluctant to let go of power, and the army is still trying to rule the country. According to Makled, only time will tell whether this

revolution is successful or whether it will be repeated in fifty years or so.

Dr. Reda stepped in at this point to say that US aid has not been very helpful to Egypt, except in the areas of health care and preservation of antiquities. American money coming to Egypt gets sucked up by the army and fuels a long-standing feud with Israel over who gets the most American aid.

Dr. Reda affirmed the patience of the Egyptian people as a culture/civilization saying that it was the presence of the Nile that made the civilization stable. Egypt was never overtaken by a foreign power and has always had a settled culture, all of which contributes to a gentle, stable outlook. She did, however, express fear of the rise of religious fundamentalism which does not allow for any difference of opinion.

In explaining what is happening in Egypt now, Dr. Reda said that Egypt has a long tradition that neither the army nor the courts will go against the people of Egypt. (It is accepted that the police are brutal towards the people.) The problem, however, is that the army was controlled by Mubarak and is much like the American Mafia—its corruption has great and far-reaching influence throughout the country. It is only in the past few months that a court order has removed iPads, iPods, and cellphones from Mubarak's entourage who are in prison, in the hope that their influence will cease to be felt.

Nonetheless, Dr. Reda was hopeful. She has read about revolutions and know that they take a long time to achieve their goals. She is particularly proud of the educational system in Egypt (which is a legacy from the time of Nasser), where all education including university education is free. She stressed the importance of the sense of empowerment and dignity that comes from education. She believes that the value that Egyptian young people place on their own lives and contributions bodes well for the future of her country.

Dr. Reda is a psychiatrist who has studied in Egypt, in the UK, and at the U of MN. Makled is a software engineer who studied at George Mason University and at the University of St. Thomas.

# Picturing Scholarship



When I joined the Scholars many years ago, our letterhead featured this woodcut by Bernardo Bellinzoni of a scholar sitting in his study, presumably thinking great thoughts by himself. It is certainly a sign of the times, if not significant, that the letterhead of MISF (see the top of the first page) now features a group of people, men and (I think) a woman, sitting around a table apparently engaged in lively discussion. As has been pointed out to

members of the Scholars by both David Juncker and Dale Schwie, the Internet is making possible a whole new kind of research and scholarship in which researchers and scientists all over the world can communicate and collaborate. This state of affairs should lead to wider and deeper scholarship. I rejoice that this change is taking place because I think that pooled information is more likely to catch errors and expand what we know.

This model of collaboration and open discussion is one that MISF has long espoused (even before it changed its logo). We have been sponsoring works-in-progress talks and roundtable discussions for many years—always in pursuit of our mission to supporting the scholarship of anyone interested in intellectual pursuits.

Of course, there are other models of scholarship. One of them is the National Coalition of Independent Scholars as reported on page 6. Even though one requirement for membership in this group is that you are not paid by an academic institution, it still seems to focus on individual research and study.

Additionally, I find it fascinating that the NCIS website has as its backdrop a photo of what looks like a shelf full of old books. I write this on the very day when Encyclopedia Britannica has announced that it is no longer going to print encyclopedias.

I do find myself wondering what the picture of the scholar will be one hundred years from now. Perhaps all scholars will have implants in their brains so that their great thoughts go directly to a digital library somewhere in the universe.

As for MISF and its contemporary logo, this present journal is an excellent example of the type of organization we striving to be. It contains a bit of everything—from science to history to poetry. I enjoyed editing it and bringing it to you. I thank Ed Ferlauto, David Megarry, Dennis Schapiro, and Mary Treacy for their contributions. I also want to thank David Juncker for his help with the Shakespeare article and Bill McTeer for his assistance with the editing of Ed Ferlauto's history of science, which we will continue in the next issue.

As always, if you have something to say, write it down and send it to me.

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# Meeting Schedule

The Minnesota Independent Scholars meet regularly the third Saturday of the month at Hosmer Library, 4th and 36th in Minneapolis. Our meetings begin at 10 a.m. with the speaker at 10:30. All meetings are free and open to the public.

Here is the schedule for this spring.

## **April 21 “Poetic Reflections of Earth Day”**

Our annual poetry program features poets Evelyn Klein, Jill Breckenridge, and Linda Back McKay. There will be an open mike for audience members to recite their own poetry.

## **May 19 “Stand Up! The Story of Minnesota’s Protest Tradition”**

Rhoda Gilman will talk about her new book and give an overview of the political protest movements that have shaped Minnesota.

## **June 16 “Minnesota’s Own Civil War: A Primer”**

To note the one hundred fiftieth anniversary of the Dakota War, Stephen Osman will talk about this single most important event in our state’s 152-year history.

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