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Editor’s Note

Saharasia: Geographical Comparisons of World Cultures and Civilizations
James DeMeo

Sixteen Related Crises and the Limits of Civilization in the 21st Century
Andrew Targowski

Civilizational and Environmental Effects of Mongolia’s Transition from a Pastoral to a Market-Driven Economy
Lynn Rhodes

TAKING OWNERSHIP OF DISTANCE IN THE STONE AGE WITH SPEAR, ATLATL, AND ARCHERY
Prehistoric weapon systems and the domination of distance
Harry Rhodes

Megacities: A Survey and Prognosis
Laina Farhat-Holzman

Europe as a Civilization: The Revolution of the Middle Ages & The Rise of the Universities
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Letters to the Editor

A Letter to The Editor: Veni Vidi Vici?
Andrew Targowski

Dynamic Definitions?
A response to Abbey Perumpanani’s article, “Civilization Defined.”
Wallace Gray

Book Reviews


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The Comparative Civilizations Review publishes analytical studies and interpretive essays primarily concerned with (1) the comparison of whole civilizations, (2) the development of theories and methods especially useful in comparative civilization studies, (3) accounts of intercivilizational contacts, and (4) significant issues in the humanities or social sciences studied from a comparative civilizational perspective.

By “a comparative civilizational perspective” we mean (1) the use of evidence from more than one civilization (the various national traditions of the modern West being regarded, in this respect, as constituents of a single civilization) and (2) a method likely to throw new light either on the origins, processes, or structures of civilizations or on the problems of interpreting civilizations.

This is a peer-reviewed journal. Please submit your papers in MS Word format as an email attachment for the reviewer’s consideration. Be sure to include on your paper itself your email address and your academic affiliation and position, or note that you are an “independent scholar.” Send your paper to Laina Farhat-Holzman: lfarhat102@aol.com

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Editor’s Note

The Struggles of Civilization

Is mankind rational? Does logic reside within civilization? Dr. Andrew Targowski, our former president, argues in a paper he has written for this issue that we are now facing a set of crises of civilization but are not addressing them reasonably or successfully. These crises are inter-related, yet our scholars, he says, only bring forth yesterday’s methods and shopworn theories as they fail to inspire us with solutions, or even present us with meaningful alternatives to impending disaster.

It may be true that with modernity science and business have built for us an iron cage. But does Max Weber’s iron cage of rationality now lead beyond the disenchantment of the world to a failure to cooperate, to foresee, to plan? Prof. Targowski asks: Where are the applied sciences? Have we simply been beguiled by inertia and habit, misled by greedy corporations, inadequate government, and hidebound disciplines wrapped by inadequate curricula in antiquated universities? Have all our social institutions failed to prepare us to address critical, pressing needs that may destroy us?

It is not easy for civilization to mount an effective challenge to any or all of the sixteen contemporary crises Dr. Targowski describes. Exacerbating it all is our failure, as he writes in a new book, to harness the power of wisdom. Is this the nadir Homo sapiens have arrived at, after 200,000 years of existence? As a result of our failures, are we, and world civilization itself, doomed?

Certainly, a logical person might easily despair, but there can also be hope. General Lynn Rhodes writes in this issue of the challenges facing Mongolia. Abundant, valuable minerals have been discovered in the ground of that ancient, vast land. Extract them at all costs and make the country rich quickly, argue both a number of massive corporations and the neighboring country of China, which covets the products of Mongolia’s earth. But facing them, on the other side of a titanic struggle, is a traditional society, a pastoral society, one which wants to preserve its way of life.

If the world’s most advanced scientists and educators can’t apply what we know to stop the world’s population from blindly tripping down the road to destruction, especially on account of what Prof. Targowski identifies as the unforeseen implications of globalization, can a newly emerging democracy hold back against the very same, ineluctable pressures? Well, Gen. Rhodes shows us that the battle for the Mongolian future has only begun. Perhaps in that country sustainability will triumph over exploitation, reason will prevail, and a peaceable civilization will be preserved, as least in part of the national territory.
In this issue authors look at how geography has played a critical role in creating the type of societies and civilizations that have risen to dominate much of our planet today. James DeMeo explains that 6,000 years ago huge sections of savannah, verdant land in North Africa, the Middle East, and Central Asia teeming with vegetation and animal life, suddenly became desert, leaving large swaths of the earth’s surface hostile to human life. Thus was born, he argues, armored Patristic societies in which intolerance, male dominance, and violence became supreme; these replaced unarmored Matristic societies in which democracy, egalitarianism, and toleration dominated. Then, the aggressive, Patristic societies radiated out from the deserts and they continue to challenge Matristic cultures worldwide.

Senior editor Laina Farhat-Holzman continues the emphasis on geography and culture, tracing the rise of humanity’s chief cities and examining problems that have occurred with the recent development of huge megacities worldwide, especially in the Third World. The majority of humanity now lives in cities, and reason must be applied if we are to solve problems of poverty and disease caused by inadequate planning for new city dwellers. Harry Rhodes discusses the development of three types of weaponry that gave mankind fighting capabilities equal or superior to those of the animals: the spear, the atlatl, and archery. While these weapons may have been used to obtain meat in the beginning, they became useful also as man fought his enemies. Finally, Toby Huff builds on Durkheim and Mauss’s definition of civilization and on ISCS founder Benjamin Nelson’s concepts of cultural heritages and civilizational complexes as he looks at the origins and meaning of the unique and powerful European civilization.

A comparative civilizationist isolates, examines, and weighs the often countervailing trends civilization confronts over the years, with the future of societies and cultures hanging on how the challenges are met. Today a near universal struggle between progress and regress continues to play out, but some of the most hopeful trends are found in the advanced, peaceful, democratic republics.

On the one hand, there are clearly arrayed the forces of violence, of xenophobia, and of intolerance, the evidence of which is all around us. But perhaps a Hegelian dialectic operates, and the wine of old conflicts is poured into new bottles, moving history.

Thus, there are many in the United States who are seeking to improve our immigration laws, recognizing in these new Americans a resource which will advance the country, its economy, and its universality. Or, observe the workings of tolerant men and women, as the world seeks to follow Churchill: “jaw, jaw which is better than war, war.” When we honor those who help stop wars, welcome immigrants, heal the sick, rescue the downtrodden, free the enslaved, visit the prisoners, and advance the cause of justice, we honor what is best in our character.
Standing on the National Mall in Washington, D.C. during the sweltering heat of August, I joined hundreds of thousands of others to mark the 50\(^{th}\) anniversary of the 1963 March for Jobs and Freedom, the Rev. Martin Luther King Jr. “I Have A Dream” march. As I was a marcher in that earlier demonstration, as well, it was impossible not to consider how far we have come in these many years. Today, sadly, the United States Congress has abandoned many of its responsibilities. But we have a President whose ancestry is both African and American; could we have imagined that fifty years ago? There is much to celebrate, to give us joy, even amidst the ongoing struggle against those who would pull us back to the dark days of the past.

The patterns and meaning of history, a topic that engaged many philosophers in 19\(^{th}\) century Europe, are always open to interpretation. If a creature from outer space were to stop us on the street and ask what had been the sum total of mankind’s contribution since we emerged from the Great Rift Valley of Africa three million years ago, how would we respond? Would our answer be negative – that, on balance, we have produced centuries of great, bloody violence? Or would it be positive – the Statue of Liberty, the U.S. Declaration of Independence, the French Declaration of the Rights of Man, Lincoln’s Second Inaugural, and the tolerance we are able to show for others? Are we but little lower than the Angels?

Was the Age of Reason correct, and is there a tableau that lays out the progress of the human spirit? Hiding from his murderous adversaries during the French Revolution, Jean Condorcet thought so. He wrote that man would be restored to his rights, delivered from oppression, and proceed with rapid strides in the path of happiness; forgetting his own misfortunes, he would no longer live in adversity, calumny and malice. Francois Fourier, a man whose stars were decidedly mixed, traced our path: from savagery to patriarchy to barbarism to civilization. Locke, Mill, St. Simon, and Comte all saw progress, and Gandhi, Boas, Mead, Kallen, and Dewey taught us tolerance.

Were they right? Or, does the violence of the 20\(^{th}\) century mean that we have moved back a stage, to savagery? Do we sing a song of ascents or descents? Do we take a turn with Kohelet, Ecclesiastes, and conclude that there is a time for everything under the sun?

Civilizationists search out what is greatest in mankind’s patrimony, employing the largest unit of social analysis we have in an attempt to understand the pathways of human history. I hope that this journal and this issue help us continuously to refine our purview, examine the options, and reach with optimism into the future based on an informed understanding of the past.

Joseph Drew
Editor-in-Chief
What is the source of the human impulse towards violence and war? Is it in our genetic structure, as some claim, or the product of Original Sin? Is it purely economically determined? Do all cultures share the same innate qualities of violent aggression, which lurks just beneath a surface facade of our civilizations, waiting for the right excuse or provocation to break loose and wreak havoc upon the world? A simple review of the daily news reports certainly might lead the casual observer to believe this is so. However, a geographical review of newer but mostly neglected findings on the issues of infant and child treatment, on the basic human needs for love and emotional bonds of affection, including sexual bonding, with comparisons between peaceful versus violent societies, leads us towards entirely different conclusions.

Various methods for comparing world cultures have been used over the years, some allowing for greater or lesser insights. One new method I developed in the early 1980s involved contrasting cultures and civilizations by their social institutions, behavior and belief systems, as recorded in the literature of anthropology and ethnography.1 Rather than using the nation-state as a basic unit of comparison, my cross-cultural comparisons employed data from individual cultural units, such as tribes or distinctive ethnic groups, from around the world. And because these data were recorded from native, subsistence-level cultures as described at approximately 1900 CE, my method also allowed a limited but nevertheless valuable stripping-away of a good portion of the culturally-skewing influences of European colonialism.

My task began around 1980, as a graduate student of Geography at the University of Kansas, seeking to make simple world maps of human behavior traits. I worked from a theory that human behavior related to family life – on subjects such as human sexuality, marriage, childbirth customs, and the status of women – would show a pattern related to climate types. Notably from my interests in desert climates, and the attending severe problems of drought and famine, it was pretty clear to me that entire social groups and regions were being devastated whenever the Sahara Desert atmospheric conditions expanded a little bit, as to affect for example Ethiopia and the African Sahel, wiping out rains and turning the landscape into dry barren conditions.

Over generations, this would work through the mechanism of famine and starvation to destroy certain biologically-determined social behaviors, such as infant care and child nutrition, and also the relations between male and female. The effects of long-term drought and starvation would impose a deleterious influence on behavior that would be
absent from those regions characterized by wet and lush conditions of food-abundance. From this, a drought-starvation influence upon social violence and war was anticipated.

To address this question, I firstly investigated the Human Resource Area Files compiled by Yale University. These were then in every major university library, but not in any machine-readable form, which was necessary if I wanted to complete a dissertation study on this matter in a few years, rather than a few decades. A sizable subset of the HRAF material had been summarized within the Ethnographic Atlas of George Peter Murdock, one of the “founding fathers” of American anthropology. It presented tabular codes for around 100 social variables on a global sample of 1170 different cultures. Murdock and his associates had reviewed original source materials from the most definitive ethnographies, made summary codes of their variables – such as Circumcision: present or absent; Bride Price: high or low, or non-existent; Descent: matrilineal, patrilineal, etc. – and then published those coded variables in the journal Ethnology, for peer-review and possible correction.

This process ran between 1962 and 1967. I was the first to plot Murdock’s data on world maps, as his Atlas was a slim book filled with data tables only, and no maps. His Atlas data had just been made available on IBM punch cards, easing my task of data review and writing a computer program to assimilate and plot the Murdock data on world maps as well as to make the necessary cross-cultural codings for evaluation of my larger desert-climate-behavior theory. Six years later, having also surveyed a significant amount of archaeological and historical materials, and undertaken additional fieldwork in the deserts of the American Southwest, Egypt and Israel, I could speak with some confidence on the subject of desert influences on behavior, as well as comparative regional variations in behavior. Here I shall briefly summarize these findings.

**Theoretical Foundations: Patrist versus Matrist Culture**

Looking around the world today, with its present difficult situations of violence and open warfare, one could easily succumb to the notion that the human species suffered under the burden of “violent, selfish genes”, a concept which I am convinced has no more scientific validity than the psychoanalytic “death instinct”, or the Catholic notion of “original sin”, or the “mark of Cain”. My study rested upon the foundational assumption that humans at their basic nature are spontaneously peaceful, cooperative and loving creatures – an assumption that was confirmed in the variable but highly structured nature of cultural data as reviewed geographically. Moreover, placing such cultural information on a time-line strongly suggests the existence of an early peaceful period in human prehistory where social violence and warfare was the rare exception, and not the rule.

A starting point in my work was the *sex-economic* theory of Wilhelm Reich, in whose writings one will find discussion of various forms of neurotic and violent *armored
character structures, versus a more peacefully-cooperative but nevertheless vigorous and healthy-aggressive (in the sense of a healthy striving towards goals or meeting of needs) un-armored or genital character structure. The term armoring was coined by Reich to describe the way in which modern humans protectively hold back their deeper emotions, like a medieval knight in metal armor. When raised with punitive violence from adult caretakers, infants and children develop emotional armor as a survival mechanism, putting up a deadening emotional wall between themselves and the outer world.

This emotional armoring also reduces the capacities for joy and love in all their expressions, Reich argued, leading to sexual dysfunctions and distortions of both compulsively moralistic and pornographic natures (i.e., sexual frigidity and impotence, the “hatred of love”, sadomasochism, sexual insatiability, “group-sex,” rape, pedophilia, etc.) with a consequent buildup of undischarged emotional-sexual bioenergetic tension. In the growing adolescent and adult, this accumulated undischarged energy pushes for release through overt or covertly violent expressions. Such violence is usually directed towards anything that provokes anxiety within the armored character but is generally bound up within complex social institutions and expressed ritually. Out of this develop belief systems advocating the “goodness” of pain and compulsive joylessness, and the “badness” of pleasure and love, especially as related to sexual and reproductive functions.

This is the emotional background for such incredible social “rituals” as are designed to destroy the maternal-infant bond during the early periods of infancy, childhood and adolescence. Examples include:

- Demands for infants to be swaddled or denied the mother's breast;
- Cutting of the genitals of infants, children and adolescents with knives (“circumcision”);
- Beating of children into compulsive obedience to irrational adult demands;
- Taboos to crush down the child's budding curiosity in sexuality, or to literally murder children if they fall in love, or to cruelly push them towards suicide (i.e., the miserable fate of Romeo and Juliet, or countless young girls murdered for “honor” in Islamic regions);
- Compulsive or arranged marriage systems, to insure that even adults should not experience romantic love or sexual bonding, thereby insuring the persistence of such cruel institutions as concubinage, sexual slavery and coercive prostitution.

The reader will note how all these various expressions of family life are likewise bound up with authoritarian social structures, where Kings, Priests, Warlords, Tsars, Commissars, or Mullahs occupy positions of totalitarian rule, and males in general live within strict social hierarchies, with women and children occupying the lowest
positions. The argument laid by Reich was that State Structure Mirrors Family Structure, be they either cooperative and peaceful or authoritarian and violent, a point that found exacting support in my work.

Table 1 gives a summary of the two different cultural expressions, which I have termed Matrist and Patrist to denote their emphasis upon either satisfying the needs of infants, children, adolescents and adults, or the denying of those needs. In the destructively sadistic family-social “rituals” summarized on the “armored Patrist” side of Table 1 and incorporated into religious ideologies as well as into law, women play a role just as large as men in spite of the fact that they may suffer disproportionately as the victims of violent Patrist.

Female genital mutilations, for example, are uniformly carried out by older women, mercilessly using razor blades on the genitals of young girls, and often they are the most emphatic supporters of the practices. Also, “honor killings” of young girls who violate sexual taboos, as in the Islamic world, are often initiated by the female gossip system or demanded by the girls’ own mothers; these mothers put the men of the community and family under extreme pressure to “do something to restore the family honor,” which also affects their own social standing among women’s communities.

The murder of such a “sinful girl” restores “family pride and honor” for both males and females. Certainly, the role of the man is central – he typically carries out the murders, and disproportionately is the one who abuses and terrorizes women and children in the family home and often is murdered himself by other males in spasms of warfare which periodically erupt. But women also can be big supporters of wars, enslavement and murder of the “hated enemy” even when their own children are offered up as sacrificial victims to the gods of war. Emotionally softer males in armored Patrist cultures also are subject to abusive treatment by both males and females.

Table 1: Dichotomous Behaviors, Attitudes, and Social Institutions

<table>
<thead>
<tr>
<th>Trait</th>
<th>Patrist (armored)</th>
<th>Matrist (unarmored)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infants,</td>
<td>Less indulgence</td>
<td>More indulgence</td>
</tr>
<tr>
<td>Children and Adolescents:</td>
<td>Less physical affection</td>
<td>More physical affection</td>
</tr>
<tr>
<td>Infants traumatized</td>
<td>Painful initiations</td>
<td>Infants not traumatized</td>
</tr>
<tr>
<td>Dominated by family</td>
<td>Sex-segregated houses or military groups</td>
<td>Children’s democracies</td>
</tr>
<tr>
<td>Sexuality:</td>
<td>Restrictive attitude</td>
<td>Permissive attitude</td>
</tr>
<tr>
<td>Genital mutilations</td>
<td>Female virginity taboo</td>
<td>No genital mutilations</td>
</tr>
</tbody>
</table>

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### Trait

<table>
<thead>
<tr>
<th>Trait</th>
<th><strong>Patrist (armored)</strong></th>
<th><strong>Matrist (unarmored)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sexuality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(cont.)</td>
<td>Adolescent lovemaking</td>
<td>Adolescent lovemaking</td>
</tr>
<tr>
<td></td>
<td>severely censured</td>
<td>freely permitted</td>
</tr>
<tr>
<td></td>
<td>Homosexual tendency plus severe taboo</td>
<td>No homosexual tendency or strong taboo</td>
</tr>
<tr>
<td></td>
<td>Incest/pedophile tendency plus severe taboo</td>
<td>No incest/pedophile tend. or strong taboo</td>
</tr>
<tr>
<td></td>
<td>Coercive concubinage, prostitution</td>
<td>No concubinage or prostitution</td>
</tr>
<tr>
<td><strong>Women:</strong></td>
<td>Limits on freedom</td>
<td>More freedom</td>
</tr>
<tr>
<td></td>
<td>Inferior status</td>
<td>Equal status</td>
</tr>
<tr>
<td></td>
<td>Vaginal blood taboo (hymenal, menstrual &amp; childbirth)</td>
<td>No vaginal blood taboo</td>
</tr>
<tr>
<td></td>
<td>Cannot choose own mate</td>
<td>Can choose own mate</td>
</tr>
<tr>
<td></td>
<td>Cannot divorce at will</td>
<td>Can divorce at will</td>
</tr>
<tr>
<td></td>
<td>Males control fertility</td>
<td>Females control fertility</td>
</tr>
<tr>
<td></td>
<td>Reproductive functions denigrated</td>
<td>Reproductive functions celebrated</td>
</tr>
<tr>
<td><strong>Cultural and Family Structure:</strong></td>
<td>Authoritarian</td>
<td>Democratic</td>
</tr>
<tr>
<td></td>
<td>Hierarchical</td>
<td>Egalitarian</td>
</tr>
<tr>
<td></td>
<td>Patrilineal</td>
<td>Matrilineal</td>
</tr>
<tr>
<td></td>
<td>Patrilocal</td>
<td>Matrilocal</td>
</tr>
<tr>
<td></td>
<td>Compulsive lifelong monogamy or polygamy</td>
<td>Noncompulsive monogamy or occasional polygamy</td>
</tr>
<tr>
<td></td>
<td>Military structure</td>
<td>No full time military</td>
</tr>
<tr>
<td></td>
<td>Violent, sadistic</td>
<td>Nonviolent, no sadism</td>
</tr>
<tr>
<td><strong>Religion and Beliefs:</strong></td>
<td>Male/father oriented</td>
<td>Female/mother oriented</td>
</tr>
<tr>
<td></td>
<td>Asceticism, pleasure-avoidance pain sought &amp; emphasized</td>
<td>Pleasure welcomed and institutionalized</td>
</tr>
<tr>
<td></td>
<td>Inhibition</td>
<td>Spontaneity</td>
</tr>
<tr>
<td></td>
<td>Fear/hatred of nature</td>
<td>Nature worshiped</td>
</tr>
<tr>
<td></td>
<td>Full time religious specialists</td>
<td>No full time religious specialists</td>
</tr>
<tr>
<td></td>
<td>Male shamans/healers</td>
<td>Male or female shamans/healers</td>
</tr>
<tr>
<td></td>
<td>Strict behavior codes</td>
<td>Absence of strict codes</td>
</tr>
</tbody>
</table>

However, I wish to break away from the usual finger-pointing and look at the unconscious and robot-like manner in which both men and women carry out a wide variety of pain-inflicting and destructive actions against infants, children and
adolescents, as well as against themselves and their neighbors, to twist and warp the softer parts of the human character into the hideous armored expressions we now see in varied expressions globally.

Natural biology reproduces the peaceful and cooperative nature of Homo sapiens in every newborn child, but the various religious and cultural “rituals” found within the anger-laden and emotionally-damaged, authoritarian type of family structure work to destroy the softer human qualities and distort them into their exact opposite. Reich’s theory allows us to find commonalities, from the pain-inflicting, obedience-demanding and sex-negating patriarchal authoritarian family structure to understand the creation of millions of armored adults who, for example, supported the medieval burning of “witches” and who later collectively marched to the political slogans of Hitler, Stalin and Mao or who considered Pharaoh or Hirohito as a god.

Every culture suffering under the patriarchal authoritarian family and state structure, Reich argued, created its own quanta of un-discharged rage, which people misdirected internally in masochistic impulses of violent self-abuse, or outwardly against socially-approved targets who almost always were emotionally softer and more sexually alive than themselves: the “immoral” sexually-active female, the “pornographic” Jews and Americans, the “naked savage” Indians, the “over-sexed” blacks, the capitalist “pigs” or “evil” counter-revolutionaries, the “infidel” non-believers. Those who live a life of greater freedom and pleasure stir up the anxiety of those who do not, and thereby incur their provoked wrath.

Superficially, historians have detailed these types of mass-murdering social movements according to economic or religious factors, or to ideology only, but their commonalities in family structure and emotional-sexual behavior have been almost systematically overlooked. And yet, a focus upon those neglected factors gives us a new perspective not previously possible.

Geographical Review of the Cross-Cultural Data

Early in my work I was impressed with the magnificent libraries of the universities where I studied, and viewed their collections, in total, as “time-machines” – vast repositories of knowledge about archaeology, history and anthropology, as well as of our biological nature. They surely must contain the answers, I felt, if only we could review and assimilate that information all at once, in a comprehensive manner. With thousands of cultures having been observed and described, it became apparent, this might be possible though presentation on world maps of the myriad facts of human behavior as observed by large groups of scholars, using geographical and cross-cultural methods of analysis combined.
We all regularly use maps to orient ourselves and our place on the Earth in relationship to other locations and nations, whether this is to drive from one state to another or to understand where the next weather-front is and how its motion will affect us. We gain a deeper understanding by knowing where things exist and their spatial and temporal relationships to each other as placed on a map. Maps are used in nearly all disciplines, from geology to meteorology to economics, allowing different kinds and forms of phenomena to be displayed in a location-specific manner, after which some of their deeper aspects are quite spontaneously revealed as a simple expression of their spatial relationships. But they have never been widely used in anthropology, perhaps due to specialization or a bias against the inevitable diffusion theories which arise when cultural data are mapped.9

My first cross-cultural evaluations used the data set of Textor,10 which employed a 400-culture regionally balanced subset of the original Murdock data, with 63 different variables that mirrored those summarized in my Table 1, above. This effort proved at a high level of statistical significance the following: Cultures with the highest levels of social violence are characterized by harsh and abusive treatment of babies and children, by sex-repression of adolescents and the unmarried, by compulsive marriages and deeply hierarchal social structures which push women down, and by a predominant religious authoritarianism. Cultures with the lowest levels of social violence are opposite to this description in nearly every respect.11 These ideas were firstly argued by Reich in his seminal works,12 later validated in the cross-cultural work of Prescott,13 and finally confirmed and expanded within my own cross-cultural evaluations.14 From that starting point, the first global maps of human behavior were composed.

From both the Murdock and Textor data sets, and also from several new data sets I assembled myself using both hand-drafting and computer methods, I made numerous individual world maps of various cultural characteristics: i.e., male and female genital mutilations, swaddling and infant cranial deformation, female virginity and post-partum sexual taboos, segregation of boys, the bride-price, male-favoring inheritance rules, patrilocal marriage customs and patrilineal descent, class stratification, castes and slavery, and belief in a “high god” whose Earthly representatives invoked divine authority. A separate World Behavior Map was also developed, from a composite of many different factors, as described below. All of these maps showed a very similar and profoundly striking geographical pattern. The mapped core-source regions for the various armored Patrist behaviors in my Table 1 were not randomly or uniformly distributed over the world map. In fact, a clear-cut global geographical pattern in human behavior was apparent from the very start of my work in this direction.

Before describing these maps, the time-line of the Murdock cultural data must be brought into discussion.
The data themselves were developed from the peer-reviewed published descriptions of aboriginal native cultures, as recorded from c. 1850 to 1950 (centered on c. 1900 CE) by hundreds of different anthropologists and ethnographers. Given the focus of these scholars on studying aboriginal native subsistence-level cultures, this approach tended to minimize the influences of European-derived and contemporary North and South American nation-state cultures. Those modern cultures appear in the database as only one of many hundreds of aboriginal native cultures, even though numerically by population they may be the largest groups. This approach thereby minimized their cultural expressions on my maps.

In Oceania and Island Asia, the influence of European-derived culture was also diminished in the maps for similar reasons, though Mongol-Turk and Islamic influences from earlier centuries of invasion and conquest clearly do show up, such as across North Africa, the Middle East, Asia and within the Indonesian archipelago.

Murdock's database also excluded evaluation of contemporary homogenized European nation-states, relying for Europe instead upon published ethnographies of culturally isolated village societies that did not reflect the turbulent and bloody conditions that afflicted Europe during more recent centuries. The Americas therefore appear on the maps as relatively unarmored, Matristic and peaceful in character, though with a smaller percentage of extremely violent individual cultures. This was the general condition in the pre-Columbian past, but certainly is not the condition today.

The maps therefore must be viewed in their historical context.

Figure 1 shows my composite World Behavior Map. The map reveals the most extremely armored Patristic and violent cultures, with the harshest treatments of infants and children and the most sex-repressive rules directed against women and the unmarried, dominant across the vast Old World desert regions encompassing North Africa, the Middle East and Central Asia. To more easily identify this large region of relatively similar armored-Patrist human behavior, which also is not accidentally the harshest and largest region of uninterrupted world desert, in the early 1980s I coined the term Saharasia. Notably, the farther one travels away from Saharasia, as a generality, the more one finds softer and lesser armored, more Matrist cultures.
The Saharasian Desert Belt and its Behavioral Consequences

Figure 1. The World Behavior Map: For the period roughly between 1850 and 1950, as reconstructed from aboriginal cultural data given in Murdock's Ethnographic Atlas, with minimal historical interpretation.14

Why should this profound cultural pattern exist, and why should the behavior of people in harsh deserts be characterized by such violent Patristic social conditions? What is it so special about this Saharasian region? As mentioned, Saharasia is also the location of the world’s largest and harshest desert region, what I have termed as the Saharasian Desert Belt,16 which extends nearly halfway around the planet. As previously determined in other global-environmental maps I prepared, Saharasia is the most extreme environment on the planet from climatological and biological viewpoints, with the world's largest regions of vegetation-barren and uninhabited space, the highest mean monthly maximum temperatures, the lowest precipitation quantities and the highest precipitation variability.16 Life in this large region is exceedingly difficult and often “hangs on by its fingernails.”

Figure 2, the Budyko-Lettau climate map,16, 17 reveals the Saharasian Desert Belt most clearly, identifying the most severely harsh desert regions on the planet – and the Saharasian Desert Belt is defined as such. The overlapping spatial correlations between the harshest desert-climate landscapes in Figure 2, and the most extreme armored-patrist
human cultures in Figure 1, are immediately apparent. The geographical aspects of human behavior, as extracted from the cross-cultural data and revealed for the first time in my behavior maps, suggest something profound happening within the Saharasan region over the course of human history. Something happened to allow emotional armoring, Patrism and social violence to develop and take root within Saharasia, after which, we may postulate, it slowly spread outwards over the centuries.

Figure 2. Budyko-Lettau Dryness Ratio: Contrasting the relative dryness of different arid lands around the world. Values reflect the ratio between precipitation and evaporative energy; values of 2 receive twice as much evaporative solar heat as moisture from precipitation, while values of 10 receive ten times as much.¹⁶, ¹⁷

Several aspects of the mapped data support such an astonishing line of argument. Surrounding the core-source region of extreme Patrism, seen on the World Behavior Map in Figure 1, there exist regions of intermediate Patrism, which fully surrounds the central core of Saharasia proper. This intermediate zone of Patrism eventually gives way, with increasing distance from Saharasia, into world regions of a predominant unarmored Matrism, as found, generally speaking, across Oceania and the Americas. Southern Africa, Southern India, much of Island Asia (outside of Islamic regions) and the high Arctic regions – at even greater distances – generally escaped significant Patristic influences. Move farther away, into the Americas and, with notable exceptions, the regional evaluations are even more Matristically and peacefully inclined.

This profound geographical pattern suggests a major role for human migration and the diffusion of culture, and is supported by much, but not all, of accepted history and
archaeological findings on the subject. The mass-migrations of ancient Semitic and Indo-European languages out of Arabia and Central Asia into surrounding borderland regions is one such example of accepted theory which is mirrored in the World Behavior Map. The Kurgan/Battle-Axe peoples, Scythians, Huns, Mongol-Turks and Islamic Armies are other examples discussed in the historical sections of my publications.¹⁸ Patristic warrior nomad groups dominated Saharasia at different historical periods, erupting outwards into the Saharaskan borderlands to periodically invade and wreak havoc and destruction upon pre-existing peaceful Matristic cultures in the moister non-desert regions.

Those conquered lands were then converted into extreme Patristic or intermediate Matrist-Patrist cultures, by virtue of transplanted social institutions, generally through violent destruction of male populations and becoming dominant overlords of surviving women and children. Their culture and behavior was thereby passed on to the next generations, and so on from then on down to relatively recent times. We can get a very good view of this process, and its relationship to the overall Saharaskan patterns, by looking at Figures 3 and 4, which presents the mapped expression of maximum occupied territory of two of the most recent expressions of such warrior-nomad groups bursting out from core Saharaskan desert regions into surrounding territory. These are, respectively, those of the Arab/Islamic conquests after 640 CE,¹⁹ and the Turko-Mongol conquests after 540 CE.²⁰ Together, they dominate 100% of the Saharaskan Desert Belt, plus a significant percent of the moister borderlands regions.

![Figure 3. Areas Conquered by Arab/Islamic Armies Since 640 CE.¹⁹](image-url)
Figures 5 and 6 present a generalized first-approximation reconstruction of the migratory pathways out of which the earliest armored Patristic and socially violent cultures emerged, to diffuse and migrate around the world. 

Figure 5. Core Spreading Centers (1. Arabia, 2 Central Asia) for Origins of Armored Patrism Within Saharasia.
As noted particularly in Figure 6, my behavior maps also imply a wide-ranging diffusion of Patristic culture suggestive of pre-Columbian contact theory, where armored Patrism was eventually carried into the Americas through trans-oceanic voyages originating from different parts of the Old World; there, seaworthy ships and navigation knowledge had been available since c.2000 BCE. The mapped patterns and archaeological data as discussed in my other publications suggest large regions lacking in significant prehistorical social violence, and this allows us to develop a new postulate, as follows: The original migrations into the Americas via Beringia starting some 15,000 years ago was fully Matristic and non-violent in character, composed of peaceful, cooperative groups.

Only later, after c.2000 BCE, did Patrism appear in the Americas, primarily along coastal regions (Pacific NW), in isolated clusters along navigable rivers (central Mississippi Valley), or in highland regions formerly associated with a coastal entry of extreme Patrist peoples (Inca and Mesoamerica regions). When Europeans later migrated to the Americas, for this reason they found a mix of both peaceful-Matristic and violent-Patristic Native American cultures. The idea of pre-Columbian contacts injects yet another controversy into the overall Saharanian theory, but this cannot be avoided. I have more fully addressed the issue elsewhere.15,22

**Ancient Gardens Into Hyper-Arid Wastelands**

The Saharanian discovery contains new insights, as well as controversy, from other viewpoints as well, notably as regarding the existence of an early peaceful period in human prehistory. We should not shy away from this question, as it helps us to understand why human violence is not equally distributed around the globe, and also
how the distorted modern expressions of violent and repressive human behavior could have gotten started in the first instance.

The Saharasia behavior maps suggest a core region of armored Patristic behavior, no differently than the temperature and precipitation data which defines the Saharaskan desert proper. This fact has quite astonishing implications when we consider that prior to c.4000 - 3000 BCE, Saharasia was not a desert. Prior to c.4000 BCE, most of North Africa, Arabia and the Middle East, as well as the large deserts of Central Asia, were semi-forested grassland savannas, cut through with broad rivers and gigantic fresh-water lakes. They were thick with large browsing animals like elephant, rhino, horse and giraffe, with hippos and crocodiles and fish, as well as early human habitations engaged in hunting, fishing, animal herding and early agriculture. Bones of such large browsing animals are scattered across the open desert regions, and old long dried-up river valleys, remnant lakeshores and abandoned human settlements are found, sometimes covered over with layers of desert sand.

The early inhabitants of all these regions left behind rock paintings and carvings, as well as the remnants of their settlements. This gave us evidence of an early wet and lush environment where peaceful social conditions were the dominant rule, and warfare or social violence was the rare exception. After the drying up of Saharasia, human settlements are abandoned as the nomadic way of life predominates, rock art degenerates into scenes of warfare and chaotic graffito, and only the long-dead bones of the large browsing and aquatic species can be found. I have elsewhere provided exceptional detail on these astonishing and immense climate and environmental changes, from wet and lush into bone-dry conditions, detailing a dramatic shift in climate starting around 4000-3500 BCE.18

I’ve also reviewed those isolated exceptions of very early social violence within slightly moister or even wet environments, such as found in Jericho, or in isolated European digs. Contrary to the many popularized claims that these exceptions are a “proof for very ancient violence”, these archaeological sites frequently show only the most ambiguous kinds of evidence, or the pop-writers are not being careful in reporting where in the archaeological strata one sees the first appearance of violent behavior. An ancient settlement may show thousands of years of habitation without any signs of war weapons, crushed skulls or destruction layers, but then violence suddenly appears late in the habitation sequence, whereupon popular writers seize upon it to ignore evidence for a prehistorically peaceful period in favor of claims for “ancient violence”.22
While I cannot go into detail in this short article, my research has made it clear that such “exceptions” are associated with one of two basic factors:

1) The early violence developed during an early sub-phase of harsh drought or desert conditions, or
2) The violence existed among peoples who migrated out of such a harsh droughty-desert region.

Those examples are thereby exceptions which prove the rule that the original trigger for human violence connects back, by historical migrations, to some period of long-term exposure to a harsh, arid desert environment, with its attending famine and starvation conditions.

Let's consider the mechanisms at work, revealing how large desert wastelands could generate human violence. My review of archaeological evidence suggests human violence developed earliest within the larger Saharasian Desert Belt, at the same time its individual desert regions began to form. Later historical and anthropological/ethnographic evidence shows more widely distributed spatial cross-cultural correlations between persisting social violence and the harshest desert regions.

The most obvious and in fact correct mechanism is the link of famine and starvation attending increasingly severe droughts and desertification, as surely would have occurred during the formation of the Saharasian deserts. As I have shown elsewhere hard drought and desertification is the primary cause of famine, starvation and mass-migrations throughout history, and many specific examples have been recorded by careful observers and clinicians.

It is also known, that the death-dealing conditions of famine and mass-starvation trigger a severe damage to human social existence, where family bonds of love between men and women, and between mothers and babies, are destroyed utterly. Food-seeking and self-preservation take over all other concerns, and mass-migrations also ensue, from drier to wetter regions, triggering additional social tensions as groups firstly cluster around remnant water sources, and later conflict with neighboring regions where water and food still exists.²³

Starvation and long-term malnutrition also does severe damage to the human neural system, including to the brain, and particularly to the growing infant.²³ And from that we see an increase in the numbers of emotionally suffering and damaged people, with the ascent of strong-man leaders and a turn of hunting tools into war weapons. Violence and cruelty then increases, along with sexual sadism, disturbances in male-female and adult-child relationships, and all the rest which has too often become an integral, yet self-defeating part of most civilizations.
Such dramatic and deadly drought-famine conditions most surely afflicted prehistorical human tribes in Saharasia after c.4000 BCE, when the deserts began to dry up. And archaeology across Saharasia records dramatic destructions of the early peaceful, cooperative and pleasure-supporting societies which once lived and thrived there. I would argue this transformation of climate and landscape most certainly would also have been directly observed and remembered by those early humans, of their garden-like environments converting over into harsh desert conditions.

This message appears in both myth and the holy books of many world religions, especially for the “great desert religions.” The dramatic climate changes from lush and well-watered grasslands, of “milk and honey” occupied by early hunter-gatherers and pastoral herders, were remembered in ancient myth, alongside the degeneration of that same landscape into harsh hyper-arid deserts of barrenness, famine and starvation. The early humans were literally “cast out of the garden”, and cut off from their own deeper loving and emotional roots. I have already given natural scientific and ancient historical discussion on these matters, including what modern biology has to say about the behavioral effects of famine and starvation.

Another more disturbing aspect is apparent in the behavior maps, however. While some degree of violence is today found in nearly every corner of the globe, it is not accidental that the current fountainhead of international terrorism and slave-like conditions for women is found predominantly within the modern desert regions of Saharasia, where patriarchal authoritarianism is also at its most extreme. The cultural expressions of the old Taliban regime in desert Afghanistan or of Wahhabist Saudi Arabia are perhaps the most “extreme Patrist” one could find on the entire planet. And wherever such people have dominated or migrated, carrying their desert-warrior social institutions and behaviors with them, similar high levels of social violence can be found, irrespective of climate.

Overall, my work on this question provides a clear and solid support for writers such as Samuel Huntington, who notably observed, with respect to the modern ideology of the Saharasian warrior nomads, that “Islam has bloody borders.” This is more than merely a metaphor. It was anticipated and sadly proven out in my Saharasia maps from the early 1980s.

Portions of the patterns revealed on my Saharasia maps have been discussed in a more limited regional manner in the writings of scholars such as Maria Gimbutas and Riane Eisler, as I later discovered. Gimbutas in particular documented the migrations of early Kurgan and battle-axe peoples, who subsequently invaded and destroyed the more peaceful cultures in Europe. Griffiths has more recently detailed the spreading of deserts, and widespread garden myths prevalent among cultures with roots in various desert regions, a topic I also discussed in my Saharasia book. Modern paleoclimatology has also recently verified an abrupt decrease in North African rains.
and vegetation at c.3500 BCE, triggering the onset of Sahara Desert conditions so fast as to prevent easy migration, and hence being very destructive to the fabric of early human societies.  

My own findings on culture and climate were globally comprehensive, however, and made completely independently and earlier than all but Gimbutas. I also provided detail on the historical destruction of early peaceful cultures in sub-Saharan Africa, India, SE Asia, Europe and China, through invasions of conquest by warrior-nomad groups out of Saharasia. Appropriate discussion and maps have also been given in my other publications regarding violent Patristic regions of Oceania and the pre-Columbian Americas.  

It is a pattern that has repeated itself over the course of history, and unfortunately continues into modern times -- continued patriarchal authoritarianism and violence as seen at the foundations of too many modern nation-states. Civilization as we know it, while working to uplift humanity in both technology and spirit, has also acquired a self-destructive aspect during the ascent of humankind, a dark side which has worked to drag societies down after long periods of amazing growth and technological progress. We can now identify the roots of that self-destructive process, which is neither in our genes nor in our souls.

NOTES


2 Human Resource Area Files, Yale University. http://www.yale.edu/hraf/


6 My Saharasia study provided world maps of such social institutions as:

  Infant cranial deformation and swaddling - Male and female genital mutilations - Female premarital sex taboos - Segregation of adolescent boys - High bride price marriage - Marital residence near male kin - Unrestricted polygamy - Lengthy post-partum sex taboos - Patrilineal descent - Land inheritance favoring male kin - Movable property inheritance favoring male kin - Presence of a high god - Class stratification - Castes and Slavery - Contraceptive plants and herbs Status of women index - Contraceptive use - Political-Social freedoms - Press freedoms.
Reich, Wilhelm: *Die Sexualität im Kulturkampf (Sexuality in the Cultural Struggle)*, SexPol Verlag, Copenhagen 1936 (Republished in English as Part 1 of *The Sexual Revolution*, Farrar Straus & Giroux, NY 1962.)

7 Table 1, reprinted from DeMeo, *Saharasia*, 2006, op.cit. p.5.

8 See the discussion on the controversy over the “Diffusion Maps of G. Smith (1915-1933) and E. Loeb (1923)”, in DeMeo *Saharasia*, 2006, op.cit. p.370.


12 Out of a total of 3906 possible correlations, 520 correlations were observed (500 positive and 20 negative) -- 95% of all recorded correlations were therefore positive in character, only 5% being negative, fully supporting the sex-economic theory. A 50%/50% split between positive and negative correlations, with a greatly reduced absolute number of correlations, was forecast by chance alone. The correlations ranged from between p<0.10 to p<0.001 levels.


Also see: DeMeo *Saharasia* 2006, op.cit. Part III Section 9: Patrism in Oceania and the New World, p.369-386.

16 DeMeo *Saharasia*, 2006, op.cit. see Chapter 4, *The Saharasian Desert Belt*, p.91-110.


20 Turko-Mongol conquest map composed after Pitcher, D.E.: *An Historical Geography of the Ottoman Empire*, E.J. Brill, Leiden, 1972, Map V.

21 DeMeo *Saharasia* 2006, op.cit. p.10, 105, 382.


23 DeMeo *Saharasia* 2006, op.cit. see section on “Physiological, Behavioral and Social effects of Prolonged Drought and Famine”, p.77-87.


Sixteen Related Crises and the Limits of Civilization in the 21st Century

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Background

Civilization is a whole greater than the sum of its parts. The added value for civilization is generated by relations amongst its parts, the elements of civilization. As these elements function, they influence other elements bilaterally. Thus, a growing population increases the pollution of the environment. This speeds the exhaustion of strategic resources. Devastated environments then increase yet further the depletion of strategic resources. Sixteen crises of the 21st century are explored and their multilateral influences and relations considered in an attempt to enhance our understanding of the direction civilization is now taking.

The Centrality of Crises in the Early 21st Century

One central and founding crisis is the crisis of science; it’s the level of this crisis that sways the future of civilization. Science is a measure of the current power of the human mind, the motor of civilization. The great acceleration of current civilization took place in the 16th century when theoretical science began to develop in physics and chemistry. Today, the sciences of economics and the other social sciences overall cannot or do not want to explain the effects of what is called “globalization.” Without this research, actions undertaken by politicians, business people, and professionals must be based upon common sense. But common sense is incapable of explaining what is going on in civilization, a complex phenomenon.

The crisis of science leads to the crisis of education, which is “blind”; it is not based on any up-to-date scientific foundations. Badly educated graduates cannot be wise politicians, business people or journalists (hence, a media crisis). The crisis of the media misinforms the general public and thus lapses into a cultural crisis. The cultural crisis exacerbates all the remaining crises. The crisis of religion erupts by ignoring the population crisis, a serious, dangerous crisis-making factor of civilization. These crises constitute the recognizable core of the overall current crisis of civilization.

The crises of the Civilization Death Triangle (caused by the interaction of the population, ecological and resources bombs, all connected) are long-term ones. Everybody talks about these but nothing is ever done about them; life goes on. Even so, these crises will determine the coming collapse of what we can call automated civilization.
In addition, there are also mid-term crises. These follow from the core of the current crisis of civilization. Such crises include:

- The crisis of technology (now overwhelming culture),
- The crisis of super-capacity (it is not true that the sky is the limit),
- The over-communication crisis (too frequent empty talk),
- The crisis of wars (terrorism), and
- The crisis of administration (ineffectual and too expensive).

Finally, the crisis in food production is ubiquitous: current, mid-term, and long-term.

**How These Inter-related Sixteen Crises May be Eliminated**

Where do we start? In order to minimize these inter-related crises, unfortunately one needs to tackle all of the problems at the same time. This is obviously a very difficult task and it is not really known whether it lies within human powers. To put it in plain terms, we propose to enhance the intellectual capacity of man. People can do away with the complex crisis processes.

To enhance knowledge and wisdom is a mission to be undertaken by science and education. Unfortunately, it is evident that neither science nor education takes responsibility for the plight of civilization. Even the term “wisdom” very seldom features in academic terminology; the very topic is treated as something light-hearted at all levels of education, including graduate education.

From 2009 to 2012, I was professor and director of the Center for the Sustainable Business Practices at a major American college. We had 5,000 students and were a part of one of the biggest American business colleges (25,000 students), with a few dozen doctoral programs. The center wanted to introduce the topic of sustainable business to its curricula.

The committee of faculty who teach graduate students accepted the strategies of teaching business so conceived. However, the committee of undergraduate faculty members refused to introduce this subject into lectures. They even refused to acknowledge in the minutes that the motion had been proposed and had not been passed. I resigned from heading the Center and the new director ironically and proudly assured the professors who had gathered at his first presentation that they would not deal with improving the curricula with this type of issue. Nobody protested. Is this not a crisis of education? The professors at that college are rather passive, and this is no different in other colleges; they are as if chained to the business textbooks of the 1950s through the 1970s, the heyday of business and the era of *Pax Americana*.

Still as a director, and within a Dean’s level task force, which I headed, I resolved to analyze whether we taught the right material in our curricula. The results showed we
did not: what we were teaching was hardly aligned with the contemporary challenges of civilization. The proposal to improve the curricula perished amidst academic inertia. The improvements suggested (see Table 1) followed a classic scope of sustainability: economic vitality, responsibility for the environment and social responsibility.¹

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Table 1.
Examples of the Issues that were Recognized as Worthy of Inclusion in the Update of Business Knowledge and Wisdom in the Early 21st Century at an American College

Main Foci:

**ECONOMIC VITALITY**

**ENVIRONMENTAL RESPONSIBILITY**

**SOCIAL RESPONSIBILITY**

Programs:

**MANAGEMENT**
- Global and local business
- Wall Street vs. Main Street
- Green economy
- Social costs of business

**FINANCE**
- Growth-based business?
- Productivity vs. sufficiency
- Short-term versus long-term in decision-making
- Green economy
- Deep economy
- From shareholders to stakeholders
- A worker or a robot
- Outsourcing?
- Managerial Capitalism

**ACCOUNTING**
- How to keep books to account for all costs of business
- The costs of the maintenance of the environment
- The social costs of business

**LOGISTICS CHAIN**
- Outsourcing abroad
- Fuel for food
- Shipping too much food
- Walmartization
- Unmanned factories
COMMERCIAL CODE

Lobbyists
Environmental protection
Do corporations have consciousness?

ICT

The architecture of systems for a sustainable civilization
The systems of controlling the balancing of business and the environment.
Principles of sustainable automation, robotization and informatization.

BUSINESS COMMUNICATIONS

Review of the examples of well-balanced solutions
From paranoia to metanoia (changes)

These suggested topics would transform the teaching of business, based on contemporary and emerging knowledge and wisdom, moving from the small picture to a bigger picture, but in relation to each other. It goes without saying that these topics far from exhaust the range of the necessary changes in business studies curricula. In other words the point is for business people to move from being “dentists” to being “dental experts.”

The State of the Economic Sciences in the Early 21st Century

The current state of the economic sciences reflects the situation of the 19th and the 20th centuries rather than this century. Economic theories that proved workable in the past are wrongly extrapolated to today. They are being placed within a completely different civilizational context.

The worsening economic crisis of the Western Civilization (Europe and the USA) in 2008-2013 comes as a surprise to economists. There are no available economic monographs that would explain the causes of the current crisis and the methods of overcoming it. The theory of economics is out of touch with the current situation. Some Nobel Prize laureates are publishing popular rather than scientific books that set out to analyze the present economic crisis.

Economic theory has become an intellectual game, processed within itself, and so it has lost touch with reality, becoming irrelevant for people dealing with the economy. Academic economists have replaced the description of economic processes with mathematical definitions of social behaviors, where it is of utmost importance to retain the strict rigor of models rather than explain what is going on in fact.
This way of developing economic theory has been criticized by a line of Nobel Prize winners. The first to do so may have been Wassily Leontief (1906-1999), who noticed that econometric models were more important than data. In 1982 he wrote that professional periodicals were filled with mathematical formulas and every year economic theorists produced novel models and carefully researched their interdependencies in numerous situations that utilize the same set of data.²

Leontief was a practicing economist, and only later did he become an academic. He was the unofficial author of the first five-year plan in the USSR, which was based on the flows between industries. It was only after his escape from the USSR (1931) that he became a theorist, but for the plan -- which was based on input-output analysis -- he was awarded the Nobel Prize in 1973. His disciples at Harvard included the Nobel Prize winner (1970) Paul Samuelson, a founding father of modern American economic science.³

In 1997 Ronald Coase (b. 1910), another Nobel Prize winner (1991), complained that present-day economics was a theoretical system that was in the clouds and hardly connected with what is really happening. A further famous Nobel Prize winner, Milton Friedman (1976), noted in 2007, at the end of his life, that economics is increasingly becoming a branch of mathematics rather than an applied science.⁵

As was observed by the younger generation academic David Colander, in 2009, none of these warnings by the most prominent American economists have had any bearing on the way economics is taught in masters level courses in this country.⁶ The British-American economist Mark Blaug (2002) put it succinctly: we have created a monster that is very difficult to stop.⁷

Protests by Nobel Prize laureates as well as wise economists are, unfortunately, ignored by Western faculties of economics, which keep teaching Neoclassicist economics, entirely mathematized and oriented towards just one model, the description of economic dynamics. Other approaches are censored and specialists rather than Neoclassicists are simply not hired by universities.

As things are, students have taken the matters into their own hands. In 2000 a movement was started in France, called “Post-Autistic Economics,” protesting the uncontrolled application of mathematics in economics as constituting a goal in itself. They were followed by English doctoral students from the University of Cambridge, who created the group “Cambridge-27.” They proposed making courses in economics open to diverse approaches rather than sticking to one research approach. Other countries followed, and the movement now has 10,000 members from 150 countries.

Neoclassicist economics rules in Poland, too. At least this is what it seems to be the case if you look at how the University of Warsaw works, where in the English-speaking
course Developmental Economics, the subject is in fact taught as if it were a branch of mathematics. In the first year of the program, the lectures are mostly in a totally mathematized economics. In the lecture Microeconomics there were two different parts, one introducing the issue and the other, taught by another lecturer, presenting game theory. If one must mathematize economic operations at all costs, I would advise teaching line programming. This concerns the optimization of plans of production, services, and transport pathways (i.e., having goods supplied to shops).

The theory of line programming would shed some light on the arrangement of the sale of limited-availability goods (such as the tickets for the Euro 2012 soccer tournament), or on the organization of renovation work. Theory of games? Is the heuristic simulation of complex production plans à la Las Vegas (in an economy suffering from the surplus of production capacity) a foremost task of business? Nobody applies that in practice nowadays. Why, then, teach the theory of games in microeconomics to first year students, neglecting other, more up-to-date methodological approaches?

The Neoclassicist theory of economics maintains that its objective is to manage limited resources by way of the application of the capitals (means) created by man. This made sense once, when the theory was being created and when labor and resources were in abundance and the means to use them for human needs were relatively simple. The Industrial Revolution replaced human labor with machines, which boosted productivity on a scale that was incomparable to the period prior to it, when only manual labor was used.

What is critical now in terms of supplies is natural capital.

Once it was the fisherman who was critical in fisheries; now it is fish itself which is in short supply. Once an irrigation system was critical, as was its operation; now it is water, or the lack of it. Once it took a lumberjack to get timber; now it is trees that are running out.

**No End to the Development of a More Productive Economy?**

If economics were to be adapted to our day, it would not place an emphasis on the development of the technical process in the replacement of human labor by machines in order to boost the productivity of goods or services. Rather the objective would be for the same output to be achieved by a decreasing use of natural resources.

This means that there should be a paradigm shift in the theory of economics. We must move away from the subordination of the ecosystem to economics and toward one where economics is subservient to the ecosystem. Alas, this is not happening even though the concept of sustainable development is gaining ground across the world.
In the years following World War II, Neoclassicist economics introduced the model of infinite growth (Solow 1956, Stigliz 1969). This model, it was believed, would lead to permanent growth in consumption and production thanks to our unlimited resourcefulness in developing the means of production. This model proposed that a “well-functioning market” would signal the shrinking of nature's capital and generate a technology to replace it.

This model means that a cook baking a five kilo cake can boost it to a 100-kilo one by an improved stirring method and by baking it longer in a bigger oven. Today a better way of stirring will not suffice and neither will a bigger baking dish, as there may be problems with the supply of flour and energy.

The Neoclassicist model was promoted to prominence in the 1970s when the limits of growth were being widely discussed. It was being predicted that strategic resources might run out, but no scenario dealt with the huge concentration of agricultural and industrial production leading to a great rise in productivity and consumption. It went virtually unnoticed that this generated, as well, huge waste during production and consumption, all of which finally would lead to the destruction of the environment.

That is what has occurred, however.

Moreover, ethical issues such as animals' equal rights to coexist with people on the planet were not weighed. It is strange that such a limited model of economics should not have been amended and adjusted to conform to reality. Why does economics ignore a situation where the cost of destroying the environment is greater than the cost of producing goods for people? Environmentalists are now likening the dominant model of economics to a car that is running downhill without working brakes. Neoclassicist economists are unconvincing when they advise keeping the foot down on the pedal as there will surely be somebody out there who will discover the brake in the meantime.

Neoclassicist economics had taken for granted “the well-functioning market.” In fact, it is known that the market is controlled by big global business. Even governments are being controlled by big business. This is in practice rather than in theory, of course.

No wonder that the economists who have been trained along the Neoclassicist model encounter the forest and see no trees. The current structural economic crisis (called the Great Recession of America and Europe) cannot be explained by means of complicated mathematical equations.

The cause is that the economy of services in America and (particularly Western) Europe is saturated and too weak to generate economic growth and a demand for goods and services. Taking production away to Asia, and to China in particular, is abolishing the middle class, which used to be the driving force of the Western economies. The crisis
will go on until the middle class in the Western Civilization is reconstructed. This will not come about soon as global business will not let it happen and neither will the politicians who report to big business, so one should get accustomed to recession rather than wait for better times.

**Unlearned Lesson of the Old New Deal**

The Keynesian model from the 1930s New Deal, which is often cited, was applied in a situation where the American economy was a *closed* system. Now the system is *open* and the stimulation of this economy best serves the economy of China.

Incidentally, it has been forgotten that there were two New Deals. The first New Deal, blueprinted by the businessman Bernard Baruch, gave a *carte blanche* to big business with a hope that they would create jobs, due to low prices. The opposite was the case – cartels were created, prices went up, demand went down and so did employment. It was only the second New Deal, strengthening the role of labor unions, that made salaries grow. Demand followed, with businesses growing. It was particularly strong from 1945 to 1960, when the United States reached its fabulous years.

Unfortunately, no politician discusses the episode or the reason. We do not hear economic scholars thus define the current problem of the Great Recession. There is no mention, in this context, of globalization being the main cause of the high unemployment in the Western civilization. Everywhere studies extol the glories of globalization, treated as inevitable and lasting. There is little recognition of the fact that the Internet as the driving factor of globalization is contributing to the disappearance of the middle classes in the Western Civilization, which invented it and is now using it to commit suicide. (In Poland this is less dangerous as Poland is a “mini-China” in Europe. This is only for the time being, though).

The practice of commending all the new techniques in the replacement of human labor with automated systems, based on robots and ICT, ought to be counted in the same category of economic unreasonableness: in universities, in the media and in society, too. The purpose of technology is not merely corporate profit (such as Apple's huge cash surplus and no will to share it with stockholders in 2013), spectacular as it may be, ignoring the social cost that will need to be paid once the plans and dreams of technologists come true and total unemployment follows. Science is silent and so are politicians. And then they are astonished that the Great Recession will not go away by itself. Simply manipulating interest rates is not enough. One needs to have a clear picture of the problem and do *indicative planning*, which France has been applying for years.
Summary

- The great crisis of civilization in the early 21st century is made up of sixteen specialized crises, but their interaction is only exacerbating the great crisis, making it so complicated that the collapse of civilization might be triggered.
- The central crisis is the crisis of science, followed by the crises of education and population. The crisis of science means there are no intellectual foundations for the resolution of most of these 16 crises, let alone all of them. The crisis of education deprives people of sufficient knowledge, wisdom and qualifications to solve the crises and uphold a sustainable operation of civilization. The population crisis augurs great physical force that will devastate the environment and exhaust strategic resources.
- The Neoclassicist theory of economics is useless for the resolution of the contemporary economic issues and civilizational problems, too. Worse still, graduates actively involved in politics, media and institutions have lost common sense, which is evidenced by current economic practices and the suicidal financial system (based on gambling and going ever more into debt, as well as bonuses that are bigger than lottery winnings, payment guaranteed).

It is worth reminding ourselves of the words spoken by a great 18th century Polish educator, Stanisław Staszic: “Such will the republics be as is the education of their youth,” which can be generalized into saying that the world will be modeled after the education of its young people.

References
1. The Brundtland Commission at the UN defined sustainable development as “meeting the present needs without adversely affecting the ability of future generations to meet their needs.” The discussion of sustainability follows three criteria: economic vitality, environmental responsibility and social responsibility.
8. The source is the former economics student, Agnieszka Couderq, the author's daughter.


Civilizational and Environmental Effects of Mongolia’s Transition from a Pastoral to a Market-Driven Economy

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We are currently witness to the transformative influence of political power as a timeless pastoral society is driven to conform to a market-driven economy.

In this paper I examine the influences of mining, democracy and a market-driven economy on the traditional, pastoralist lifestyle of Mongolia and show how demography and other descriptors of its society are shifting rapidly as a result. The newly emerged democracy of Mongolia appears to be unable to defend itself from monumental transformation, a change which is likely to result in ecological and cultural implosion.

One observing this phenomenon is forced to ask: Does a pastoralist culture of long tradition have the innate right to continue? Will similar transitions now occurring around the world bring about severe civilizational and environmental consequences everywhere?

History

Mongolian pastoral life, occurring amidst the country’s vast, open landscapes, has historically thrived. The land has provided a living commons for a variety of nomadic cultures. But now neither the traditional structure of Mongolia nor its pastoral life, are likely to continue, as current political forces eliminate what is traditional and shape future civilizational aspects of the country and its people.

Mongolia benefits economically from the rapid acceleration of natural resource extractions. Thus, the country’s GDP grew by an unprecedented 17.3% in 2011 and by 12.3% in 2012.1 The majority of growth is due to extraction of coal and minerals, 80% of all its exports, sent primarily to China.2

Mongolian territory, at its height in the 13th century, comprised the largest continuous land empire in history. From an often violent lifestyle, notably exhibited to the world at first by Genghis Khan, the Mongols evolved a nomadic, pastoral life and developed a form of Buddhism that created a relatively stable society.

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1 World Bank 2012 Mongolia quarterly brief (February 2012)
2 Joel Brinkley, China’s Other Environmental Problems, World Affairs Journal, April 5, 2013 regarding increasing demands
Today, over half of Mongolia’s total population of 2,800,114 live in the capital city of Ulaanbaatar. The rest is scattered across the country; most live as pastoralists in the commons of the countryside. The traditional Mongolian family is the integral unit for nomadic pastoralists. Individual families and small groups of families have historically lived as one with the country’s landscape. It is this very culture that is in the midst of a dramatic transformation.

**The Tradition of Pastoralism**

Mongolia is a large, sparsely populated country landlocked between China and Russia. Winters are severe and long. Pastoral livestock production was the only primary economic activity in the country for centuries and continues to be a primary economic activity today. Pastoral livestock husbandry did not happen by accident in Mongolia. To a large extent it was determined by a convergence of factors: geographical location; soil unfavorable for agriculture; harsh weather conditions; the strength and abilities of the Mongolian people to survive such an environment; and the ready (and primary) commodity exchange of livestock.

Mongolia’s harsh terrain, natural and open pastures are the primary source of food for pastoral livestock, which are managed using historic nomadic traditions. Livestock is moved throughout the seasons and amongst varying pastures under traditional pastoral grazing management strategies. These strategies have developed and adapted to Mongolia’s ecological conditions and extreme climate. Further, these pastoral management practices, which have evolved over the centuries, remain mostly intact, and are found along with native breeds of livestock well suited to the environment.

The potential to continue pastoral life patterns in Mongolia today is aided by the plethora of both natural resources and traditional pasture management practices. Pastoralism remains an important sector of the Mongolian economy, contributing over 20% of the country’s GDP. But there are risks and immediate threats to this ancient lifestyle and the economy it helps to support.

First, Mongolian pastoralists face deteriorating social conditions. The living standard for herders is one of the lowest in the world. Despite the flexibility of the herders, their mobility, and their ability to live in harmony with the land, this centuries-old tradition is now endangered.

A major reason is immediate environmental threats: diversion of water supplies, pollution, respiratory illness, and displacement (relocation) largely caused by the mining boom and rapid development.

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The mining boom is fueling economic growth in the country at a rapid and alarming pace. Thus, mining practices are affecting the governance of rural areas. This has taken on such urgency that local herder-led resistance groups have forged alliances with non-governmental organizations in order to respond to the land degradation of the commons, direct and indirect, that is resulting from the mining.

There are also complex institutional innovations at work in rural Mongolia. Until recently, the challenges of governance over the pastoral commons attracted little attention. But, with the entry of the Oyu Tolgoi Mine, containing one of the largest copper deposits in the world and the largest single investment in the history of Mongolia\(^4\), plus other mine projects such as the Tavan Tolgoi Coal Mine, world-wide attention is now focused on the transformation of the Mongolian commons, its governance and its capacity to handle the resulting challenges.

**Threats**

Near the formally-designated Protected Area of the Ikh Nart Nature Reserve and the region of the Oyu Tolgoi Mine in south-east Mongolia are found dramatic examples of challenges to management of communally-held lands and resource protection. Although these two areas are not in the same province, they are neighbors and share comparable issues.

Concerns are being raised by local pastoralists. These concerns have been outlined by a rush of reports issued by the government, the United Nations Development Program, various non-governmental organizations, and industry itself. Included are controversial reports concerning the Oyu Tolgoi Project Management Plan and resource protection plans such as the Special Protected Area Network Plan for the Ikh Nart Nature Reserve.

Major concerns include:

- **Land acquisition and resettlement**: Herders are worried about having to reduce livestock due to decreasing pasture. The laying of new roads divides pastures and disturbs ground and livestock, affecting herder livelihoods and income. Changes bring increasing competition between herders for pasture and water. Construction of infrastructure and the expansion of mining to yet additional areas may trigger new waves of resettlement.

- **Environment**: This is happening quickly in Mongolia. There is a loss of vegetation due to soil degradation. The clouds of dust and major noise impacts are felt all along the roads. There is a negative impact on wildlife and a loss and change of vegetation. As a result, cultural resources deteriorate.

\(^4\) Official Oyu Tolgoi Fact Sheet http://ot.mn/en/about-us
- **Economy:** Local companies as well as newly-minted entrepreneurs have a limited understanding when forced to meet high volumes required by mining projects. How should they maintain quality standards? Moreover, neither the country’s government nor its private institutions have yet developed the ability to oversee appropriately income, investment and wealth distribution.

- **Water Quality & Quantity:** Water must be protected for human, wildlife and environmental health. Herders report that more water must be made available to maintain pastureland viability. They are concerned with reduction and pollution of water supplies. Shockingly, World Bank researchers have concluded that current known water resources have just 10 to 12 years left, unless additional sources are located and utilized.

- **Cultural Heritage:** The traditional nomadic herding lifestyle is changing rapidly. Pastoralists are uncertain of lifestyle changes, cultural resources, cultural history and their future livelihoods. They want to ensure protection of local culture and keep their historically significant heritage and way of life. Can they?

- **Other Physical Issues:** There are concerns for designated Protected Areas arising from the construction of transport corridors in the buffer zones. Migratory animals are being hampered by the impact of new roads in mining areas, by fencing, and by the building of railways. To make matters yet more dire, the Ministry of Industry and Trade is requesting that currently designated Protected Areas, currently pastoral, be declassified so that mining may commence there.

![Map of Oyo Tolgoi and Tavan Tolgoi Mine Project Areas](image-url)
I have interviewed herders, conservationists, mine employees, eco-tourism specialists and local Mongolian officials. In the process I have observed an increased tendency to adopt Western economic and Western conservation-related values concerning pastoralist landscapes and open spaces. These Western practices and values often conflict with the informal, flexible institutions of commons-management traditionally used by pastoralists.

A report by one company, the Oyu Tolgoi LLC, outlines the impacts of coming water diversion and spring relocation on the region’s water resources, flora and wildlife. See Tables 16, 21 and 27; these are taken from the company’s Undai River Protection and Partial Diversion Project’s “Detailed Environmental Impact Assessment” of 2012. In some cases the only available water source already has been fenced in by mining companies and is no longer available for livestock. Thus, herders, nomads who make up 40 per cent of Mongolia’s population, have seen their sole water source diverted. They say that pollutants are poisoning their livestock.

5 Available at:
### TABLE 16. RISK RANKING OF POTENTIAL IMPACTS ON WATER RESOURCE

<table>
<thead>
<tr>
<th>Potential Impact</th>
<th>Consequences</th>
<th>Likelihood</th>
<th>Risk Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of Bor ovoo spring</td>
<td>Local impact</td>
<td>Almost certain</td>
<td>H</td>
</tr>
<tr>
<td>Interruptions of restriction on the base flow in the wells and springs south of license area (downstream of diversion), e.g., Khukh Khad, Maanit and Burkhan Springs</td>
<td>Local impact</td>
<td>Possible</td>
<td>H</td>
</tr>
<tr>
<td>PAF or sediment laden water run-off into the Undai River diversion</td>
<td>Local impact</td>
<td>Unlikely</td>
<td>L</td>
</tr>
<tr>
<td>Hydrocarbon spills during construction leading to contamination of water resources</td>
<td>Local impact</td>
<td>Unlikely</td>
<td>L</td>
</tr>
<tr>
<td>Groundwater level will decrease around the area including diversion dam to reprovisioned Bor ovoo spring and dry excessively</td>
<td>Local impact</td>
<td>Almost certain</td>
<td>H</td>
</tr>
</tbody>
</table>

### TABLE 21. RISK RANKING OF POTENTIAL IMPACTS ON VEGETATION

<table>
<thead>
<tr>
<th>Impact</th>
<th>Consequence</th>
<th>Likelihood</th>
<th>Risk Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of vegetation associated with surface water features, including Bor Ovoo Spring and vegetation communities associated with the temporary flow of the diverted section of the Undai River with 1.5 ha</td>
<td>Local impact</td>
<td>Almost Certain</td>
<td>H</td>
</tr>
</tbody>
</table>

### TABLE 27. RISK RANKING OF POTENTIAL IMPACTS ON FAUNA

<table>
<thead>
<tr>
<th>Impact</th>
<th>Consequence</th>
<th>Likelihood</th>
<th>Risk Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Destroy wildlife water point and wildlife habitat to be changed</td>
<td>Local impact</td>
<td>Almost certain</td>
<td>M</td>
</tr>
<tr>
<td>Elm trees might be destroyed and breeding location for several carnivorous birds to be changed</td>
<td>Local impact</td>
<td>Possible</td>
<td>M</td>
</tr>
<tr>
<td>Soil disturbance within project area may impact on insect habitat</td>
<td>Local impact</td>
<td>Almost certain</td>
<td>M</td>
</tr>
</tbody>
</table>

Each of these risks is serious. Yet, the mitigation proposed tends to be minimal.
The process for mitigation of these threats to the environment, when dealing with mining companies, is complex. This is especially true for people who are widely dispersed across the commons and for the most part do not have timely or traditionally organized means of communication.

Here is an example which outlines the steps of one proposed Community Grievance Procedure. Although relatively straightforward in appearance, each step throws huge barriers in the way of herder communities as they try to see the process through to meaningful resolution.

The process is different with each company.

**Regulatory and Institutional Framework**

In the past decade, the Mongolian government has evolved from being predominately the owner and operator of mines to being a manager and regulator. This transformation set in place a legal framework designed to help guarantee an environmentally sustainable growth of the mining sector. The cornerstones of this framework are the Mongolian laws on environmental protection and environmental impact assessment. These laws include the application of a “polluter-pays” principle and the right of access to environmental information. They also address the promotional roles of governmental, nongovernmental, and international entities in raising environmental awareness through environmental education and technical training programs. Yet these laws contain no provisions for a socioeconomic impact assessment.

The 1997 Mineral Law was designed to accommodate the government’s limited institutional and financial capacity. While it provides a simple framework that takes into account some of the key environmental and social impacts of mining, it fails to formalize public involvement in the permitting process and lacks provisions to ensure sufficient funding for ongoing and future rehabilitation.6

Before 1992 and the shift to a market economy, the state-owned Mongolian-Soviet joint ventures with Russia, Bulgaria, Czechoslovakia, East Germany and Hungary dominated the mining industry. Back then, the mining ventures focused primarily on coal, gold, copper, tin, fluorspar, and molybdenum. Since 1992, there has been a growth in the number of local Mongolian companies along with other countries involved in natural resource exploration and mining.

The mining companies establish industrial cities of various sizes to serve large groups of people and provide support services for resource extraction and production activities. Until recently, mining enterprises had been operating with minimal local recruitment or

input from rural people. Possibly, new cooperation involving human outreach will minimize negative impacts of mining and change the reality that mining activities destroy the environment and make only minimal contributions to the overall economy.

But, lack of trust by rural pastoralists and others affected by mining operations has been intensified because the regulatory and institutional support system(s) have not adequately safeguarded the affected communities. Until recently, collateral involvement and development programs have been undertaken by mining companies as simply incidental initiatives undertaken in order to help the companies improve their relationships with the local herder communities.

Key unresolved issues include:
- complex, historical land-use practices,
- functioning financial policies that would contribute to local communities,
- informal, renegade or “ninja” mining by herders who practice free-lance illegal mining, and
- the capacity of government oversight to ensure compliance with regulations and laws.

Capacity

Mongolia’s Law on the Protection of Cultural Properties states that prior to allowing land to be used in the construction of buildings, hydroelectric stations, industrial mines and infrastructural improvements, a feasibility study must be conducted by authorized historical and archaeological organizations. Costs related to the feasibility study are covered by the organization in charge of such activities. Compliance with the law, especially its requirement for feasibility study oversight and follow-through, is a challenge. It is met with skepticism by government officials, herders, and non-governmental organizations.

In February 2013, the United States refused to endorse the World Bank Mongolia (Oyo Tolgoi) Mine Project. It cited numerous concerns about environmental oversight, unresolved consequences to herders and inadequate governmental oversight capacity.

Due to these and other issues, the United Nations Development Program, with the support of the British embassy in Mongolia, organized a meeting in January of 2013 of government officials, international partners, citizens, academia and the media. According to the UNDP, revenue from mining alone accounts for nearly one-third of Mongolian government revenues, and makes up approximately 22% of the country’s GDP. With the large influx of revenues come opportunities for transformation of a country’s prospects -- and for the fabric of a traditional society.
History tells us that presented with this opportunity, a country’s management decisions are critical to failure or success and prosperity. UNDP Resident Representative Sezin Sinanoglu has said “The sheer size of Mongolia’s mineral resources and potential revenue flows are staggering, which places a huge responsibility on the government as it faces tough policy choices on how to use this wealth wisely for the benefit of all. When making those choices, the key words will be equity, sustainability and accountability, all of which underscore human development.” With funds being accumulated rapidly, perhaps Mongolia can expand the well-being of the people and also provide for future generations. These mean different things to different people and varying interests and require informed governance.

Because Mongolia’s economy today is heavily dependent upon mineral exports, there is added risk should an expected revenue stream be interrupted by global prices. To address expected fluctuations in market prices, Mongolia must ensure informed and knowledgeable adaptability in order to safeguard pastoralism and the environment and provide for growth that is compatible with law, policy, traditions and culture. In order to innovate and continue making improvements, both the urban and rural population face a choice: the decline of the pastoralist lifestyle may, in fact, be the offset cost for the financial benefits of mining.

Innovations, Adaptive and Co-Management

Collaborative efforts are being attempted between herders, government officials, non-governmental organizations, and developers in hopes to effectively manage land while addressing livelihood issues contained in the mining v. pastoralist debate.

Dr. Caroline Upton, a researcher from Leicester University, writes that Mongolian herders are facing multiple pressures on their livelihoods, traditionally based on nomadic pastoralism, from climate change, mining, desertification and new policies on land. She was the lead researcher on a recent project where national decision-makers were brought together with affected parties and local stakeholders to evaluate key issues pertaining to nomadic culture, livelihoods and identity in modern Mongolia.

Herders are being encouraged, through government policy and donor interventions, to form herder groups. The groups are designed to collaborate in pasture management, labor sharing, and environmental conservation, as well as marketing of their livestock products, improving local livelihoods and resilience. 7 One such group with which I work in the region is a woman’s collective called Ikh Nart is our Future.

7 “Community, Place and Pastoralism: Nature and Society in Post-Soviet Central Asia” Leverhulme Trust, Caroline Upton et al.
The Oyo Tolgoi Mine Cultural Heritage Program coordinated and outlined a series of meetings in August and September of 2010 with local herders to help develop cultural protection efforts. Topics included:

- What is cultural heritage?
- What should we do to preserve and transmit it to future generations?
- Meeting local citizens who are interested in the research work of local historical and cultural properties.

Dr. Joan Schneider, an archaeologist from the California State Parks, coordinates a cultural protection program and team in the Ikh Nart Nature Reserve Protected Area. She is also working with local herder communities, Mongolian and other cultural specialists to identify and protect cultural resources and to minimize negative impacts of mining activity. Her team’s work was presented at a conference in Hawaii in early 2013. Dr. Schneider cited the newly developed Ikh Nart Management Plan as being instrumental in identifying critical areas of focus. Only with on-going and sincere efforts will outcomes from this type of collaboration prove beneficial.

A much debated pastureland law is attempting to strengthen seasonal pasture rights for families and herder groups. In addition to the impacts on mining and development, there are fears that historic pastureland may become privatized. This will mean less ability to move herds in traditional ways based on variable need. Adaptive pastoral management -- a form of co-management in cooperation with local government, researchers and others -- is gaining support and is being replicated in many areas. Adaptive co-management begins at the field or pasture level. Academic activist H. Ykhanbai has said that pastures in Mongolia are a common pool resource shared by many users, while private ownership of livestock allows herders to manage their own business.

Sustainable management of herds depends on the carrying capacity of pastures and on the interactions of those who rely on the same resources. Ykhanbai points out that there is a limited capacity of herders and local government to sustainably manage pasture resources. Other stakeholders, however, from mining, development, education, business, government, and governmental organizations can help. Working together, perhaps many have the ability to manage resources more effectively.

Collaborating in adaptive co-management may give herders a more representative voice when evaluating short and long-term impacts that are crucial to them and the sustainability of their livelihoods and lifestyles. Groups of nomadic herding households can graze their livestock in rotation throughout seasonal pastures. Then they can gather

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8 Oyu Tolgoi LLC Cultural Heritage Program Phase 1 Report February 2011
9 Management Plan for Ikh Nart Nature Reserve 2012-2016 (UNDP SPAN Project)
in winter and spring camps with their livestock sheltered and then return to adjacent areas in summer and autumn with the fresh water and greening pastures.

According to Upton and others, Mongolian government policy is also promoting intensified livestock production. When this occurs it increases tensions between movable and more sedentary livestock production in rural areas. This intensification raises questions about the nomadic pastoral culture and its very identity in a modern Mongolia. Intensification of production requires, among other things, changes in how pastureland is allocated, leases, flexibility and mobility.

Conclusion

Rapid development of mining activity and resource extraction in Mongolia has an immediate impact on the issues of historic pastoral land rights, the survival of the pastoralist culture and environmental sustainability. Mongolia’s neighbors -- primarily China and its huge demand for copper, gold, uranium, and other minerals and its political influence -- is a driving pressure for increased resource extraction. The same applies to China’s increasing demand in Africa, where it is vigorously pursuing needed natural resources. But the Mongolia case is a conspicuous, dramatic example.

Adaptive co-management groups are becoming more prominent as a solution to evolving questions of land rights, herder relocation, natural resource protection, and the preservation of cultural resources. Both the future of Mongolia’s pastoral herding culture and the country’s evolving civilizational transformation are linked to evolving policy, the capacity to manage, and decisions being made today. Overall, there is growing recognition of the value of pastoral life and heightened recognition of its cultural, historic and on-going traditions.

History shows that we tend to protect what we value. There are competing civilizational values and there are so-called “global values”. Does pastoral life have a right to exist or must it compete with the innovations and demands that arrive with modernity? We know from studying the past that dominant civilizations prevail. The more influential the voice, the more protection is afforded. The voice of pastoralism in Mongolia is talking, but is it destined for extinction or will it continue to be heard?

Recommended Readings

Bawden, Charles. The Modern History of Mongolia, Kegal Paul International, United Kingdom, 1989
Reading, Richard; Kenny, David; Wingard, Gachimeg. *Ikh Nart Nature Reserve*, Oberaula, Germany 2006
Taking Ownership of Distance in the Stone Age
With Spear, Atlatl, and Archery:
Prehistoric Weapon Systems and the Domination of Distance

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The history of weapons is of crucial importance to the study of comparative civilization. Some of the most important technological advances in all civilizations were the result of human beings attempting to gain military advantage. In this paper I will look at three key weapons, the spear, the atlatl and the bow and arrow. While there is a fair amount of research on the spear and the bow and arrow, there is relatively little on the importance of the atlatl. This paper corrects the deficit. We will show that in addition to the spear and bow and arrow, the atlatl played an important role in increasing the distance from which one could attack or defend against an enemy, prey, or predator.

In the beginning there was a rock. A rock is an efficient weapon as far as it goes. Part of my family hails from Northern Ireland and the modern counterparts of the rock, specifically the cobblestone and the brick, have served valiantly in that locale as projectile weapons, delivered with sometimes surprising aerodynamic stability and accuracy by those on both sides of the political difficulties. But rocks and their modern counterparts are inelegant and more importantly very difficult to carry around in constant readiness. Further, the “technology” of the unfinished rock was available to all equally, and so gave its possessors little comparative advantage. It is not surprising, therefore, that in the earliest times alternatives to the rock were developed.

Three significant weapon systems appear during the Stone Age, which, in concert with other basic survival strategies, helped early humans to survive and then thrive under often extremely adverse conditions. These three weapon systems were so significant and of such simple and technologically sound design and importance they would continue in recognizable form and be used in the military operations of civilized peoples well into the second millennia of the Common Era. These three systems are the spear, the dart thrower (atlatl), and archery.

Critical not only to the survival of our very early ancestors, these basic systems and their realized potential would help form military thinking and actions in civilizations which would eventually follow. These systems existed as tools and, as in any craft, the product of the craftsman is shaped in good part by the tools, materials and technology available to him. These systems would help shape the world in which we live today.

These systems were probably developed and improved over time by many generations of humans, some of whose innovations speak to the exceptional genius of early humanity. From the perspective of our modern world, where almost every student (in
an industrialized country) has virtually limitless knowledge available at his or her fingertips, and so much food that obesity is becoming epidemic, it is difficult to imagine or truly appreciate the immensity of these innovations or the circumstances and conditions under which they were made.

Each of these three systems offered critical technological advances and aided early humans to survive, to dominate areas they chose to occupy, and to thrive through the ability to take adequate game, thereby providing sufficient food. The systems were so sound in their basic concepts and designs that they would work effectively in extremely varied environments and could be manufactured from a wide assortment of raw materials.

When used alone, each system was limited in the extent of its performance. The spear, although a near perfect close-quarter weapon and always ready for use, had a very limited range and area of domination. The atlatl, though having incredible range compared to the spear, and sharing the spear’s constant state of immediate readiness, was limited in how many projectiles could be carried by a hunter, and it could not perform well as a close-quarter defensive weapon.

Archery, having the highest level of technology of the three systems, the longest accurate range, and the potential to carry larger numbers of projectiles, had serious deficiencies in that the bow could not, in most cases, be kept in strung condition, and therefore was not always immediately usable. In addition, the bowstring, even into the medieval period, was vulnerable to water and needed to be kept dry. When two or all three of the systems were used in concert, they complimented each other and could give man an almost unbeatable edge in defense against animal predators and an advantage in hunting as well as in conflict with other humans not so equipped.

Technology alone is never sufficient on its own. Technology requires clever, motivated, intelligent, and responsible human involvement, direction, and operation. The weapon systems described were created at times and in conditions where there was no guarantee humans would survive as a species. The successful operation of these very basic tools required an understanding and respect for the natural world, its resources, and the animals with which they shared the world.

**Motivations and Resources**

Members of our species, when so inclined, are potentially the deadliest predators on the planet. However we are physically designed more in the image of prey. We lack claws, fangs, antlers, horns or tusks, are comparatively weak and slow, and carry just enough muscle mass and fat to make killing us profitable to predators searching for meals. Perhaps our natural frailty and vulnerability is the motivation to develop survival technologies.
What we, as humans, do have in our favor is more important than natural weapons, speed or strength. We have physical endurance, the will to compete and survive, hands with which to manipulate our environment and the raw materials within it, and, most importantly, brains with which to think and imagine. We have the ability to visualize that which has never existed before, to see potential in inanimate objects, and then to fashion and create the artifacts imagined in our thoughts. We confront problems, create solutions, modify materials, adapt to change, and overcome obstacles. We also have the ability to communicate with other members of our species by physical demonstration, signs, and language.

Evolution gave humans the advantage of greater intelligence, but otherwise humans are the perfect physical prey; thus man must rely on survival strategies rather than natural strength. Survival strategies include many avenues such as making and using fire, twisting or braiding fibers and sinew into thread and cord, flaking and grinding stone or carving bone and antler into tools, fashioning efficient, tailored clothing against the cold, making storage containers, and drying and preserving food.

In wild, predator-inhabited environments, distance becomes a significant key to survival. If man can control and dominate distance he can avoid the fangs and claws of predators, and the horns, antlers and kicking hooves of those animals he wishes to use for food. Distance can be controlled and dominated by the use of weapon technologies, and here it is all about distance.

The ownership and control of distance is not only of importance to survival, hunting, and human conflict applications, it is also a proto-concept that leads slowly but inevitably to settlements and the eventual creation of civilizations. It is not much of a conceptual leap to go from, “this area is mine right now (by force of arms),” to this area (property) is mine.”

The seeds of the concept of real property exist in the very first deployments of sharpened sticks to defend those small pieces of ground where early man refused to turn and run away. At that point man began his pursuit of dominion of the earth and the long climb to civilization.

As humans we understand that we will die. It is unequivocal and inevitable and in the immediate world of the Stone Age was something faced on a daily basis. On the other hand, when a lion or bear charges, it does not think it might die on the human’s spear. The human holding the spear and bracing for contact clearly knows his survival is not guaranteed, that he may die, and he understands the impact his death would bring to his small, fragile family group. Thus there is clearly motivation for humans to develop, perfect, and effectively use technology.
Technological Connections and the Evolution of Armaments

The spear, the atlatl and archery are more closely related than they might at first appear. A closer look at the three systems reveals very strong relationships between the systems and the likelihood of an evolution amongst them as opposed to independent development.

The spear: alpha and omega of the three early weapon systems

The spear is the alpha of the three systems because of its simplicity and because it was the first of the three systems to be developed, as early as 500,000 to 780,000 years ago. It is the omega because unlike the dart thrower and archery, which currently exist primarily for recreational uses, the spear in its modern manifestation continues to exist in a tactical environment around the world as the bayonet on a battle rifle. Over the millennia the defense concept represented by the spear has kept its value. The bayonet’s purpose is to kill but its true value is in defense.

The spear is the first truly significant early weapon system. A rock can kill small and medium size game, but a rock thrown by human hands is unlikely to stop a large charging animal. Rocks of sufficient size to be adequate killing weapons are not practical to carry around and would need to be used at prepared ambush sites or as weapons of opportunity, if available, during times of need. The spear was the game changer because it did what no other early weapon system could do: it could be easily transported, kept close and ready at hand, and it put a physical barrier between man and predator (or man and angry, charging game). For the dangerous animal to get to man it must then first overcome the spear.

The spear is the first weapon system used to effectively establish the concept of area denial. It is a small area to be sure, but in concept as well as in implementation (with a skilled, healthy and lucky hunter-warrior) it is an absolute. There is no argument or discussion. Entry is simply denied; the human’s first personal space is enforced. As weapon technologies advance, the area under man’s control increases proportionately (until the point where human challenges human and then comes argument, discussion, and too frequently the tactical employment of weapon technology).

For the spear to work effectively, it must have certain simple but necessary characteristics: the shaft must be strong and of suitable diameter for maintaining a grip in violent encounters and it must be long enough to keep threats at a “safe” distance. It also requires a sharp and lethal point. The spear must be maneuverable as not all attacks are frontal charges, especially when made by predators operating in hunting teams or packs.
Modern military and police tacticians use the term “close quarter battle” (CQB) to define conflict in immediate proximity to threats. The basic stone-age spear existed in this type of CQB environment. Threats were immediate, attacks direct, indirect, and dynamic, and to kill or be killed was the rule.

The spear can be used as a stabbing, thrusting, and throwing weapon as well as a moveable barrier or impalement weapon, making it a perfect CQB system. A significant benefit of the spear is that, once fashioned, it is always ready to use. If well fashioned and designed, and constructed of suitably strong materials, there is little to go wrong with it.

The most significant limitation of the spear is that it controls very little area, even when used as a throwing weapon. If used as a throwing weapon, secondary or alternate weapons need to be available to replace the thrown spear.

The spear alone did not give man an edge in defense against predators so much as it effectively leveled the playing field for the first time. Before adopting the spear, man existed in an asymmetrical relationship with predators, with the advantage on the side of the predators. The spear gave man a fighting chance to survive against most dangerous, aggressive predators. The spear became man’s de facto fangs and claws.

Considering the vast variety of hunting spears developed through the ages and across the globe, diversity was also likely in very early times as well. As humans, we adapt to changing conditions and opportunities as they avail themselves. Early spears evolved into many specialist forms including spears with multiple barbed prongs for taking fish and eels, and long, light throwing spears for taking water fowl and other game at short distances. Throwing spears existed for larger game but were proportionately heavier to be effective.

It is very likely that spears primarily designed for throwing evolved into the darts used in atlatls. Small game throwing spears and atlatl darts share many of the same characteristics, and all of the same objectives. Throwing a spear and throwing an atlatl dart is also basically the same physical movement on the part of the hunter. The difference in the throw is the addition of the atlatl, which acts as a jointed extension of the throwers arm. Technologically the increase in power is obtained by the atlatl contacting the back of the dart (rather than the throwers hand holding the shaft of the spear) allowing the dart to bend against resistance and load energy. The hunter does touch the shaft of the dart but only enough to hold it in place on the atlatl prior to the throw.

The atlatl dart system most likely came from people with a vigorous and aggressive hunting tradition where taking game at greater and greater distances was a desired objective (or a survival imperative), and it is more than likely that they already used efficient throwing spears before developing atlatl technology.
The Atlatl: the evolutionary bridge between spear and archery

The dart thrower, commonly referred to in English speaking countries as the atlatl, is an offensive weapon used to deliver lethal force at a distance. It has value in both hunting and military contexts. Tests have shown that the atlatl provides an increase of 60% in thrust. The atlatl thus increases the range at which man may take game or initiate hostile engagement with enemies. It is not an effective defensive weapon in close confines; its darts are generally too weak, light and flexible to serve as spears or efficient stabbing weapons.

Darts used in the atlatl are generally long, flexible, and light. Like an arrow the darts are usually fletched with feathers at the back of the shaft for stability in flight. Oddly, unlike arrowheads, there is little correlation between dart tip size and shaft size.

General observations from current atlatl enthusiasts, including my own observations and research, indicate that most atlatls are and likely were somewhere in the 20 plus inch range but the variation in atlatl lengths is significant. The shortest reliable artifact atlatl I located during research was seventeen inches long (Peru) and the longest forty-four and a quarter inches (Australia). Longer atlatls tend to make for harder, longer and more powerful throws. Shorter atlatls tend to make for more accurate throws. Since both power and accuracy are desired characteristics of a working weapon system a compromise is necessary between the two.

Atlatl darts are generally much longer than modern day arrows although some South American arrows still in use today can rival the lengths and appearance of some modern atlatl darts. Modern traditional style dart shafts are mostly fashioned from wood or river cane and have stone, bone, antler or copper points.

The observations of modern atlatlists indicate the atlatl is by any measure an impressive weapon system, and the archaeological record testifies to the effectiveness of the atlatl.

Archery: perfection at the end of evolution?

Archery is very old, going back at least 64,000 years. As practiced in early prehistoric times, archery consisted of a system whereby arrows were propelled with accuracy and power from a bow for the purpose of hunting or warfare.

Unlike the spear or the atlatl system, archery required a more involved technological process to make a working weapon system. Arrows were fairly straight forward to manufacture, being in form, construction, and function very much like smaller versions of atlatl darts and using the same general techniques to manufacture. The bow and bow
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string, however, were a new type of technology requiring the ability to manage much stronger stresses.

The spear, atlatl and atlatl darts had been fairly simple to manufacture, as were the arrows for the new weapon system of archery. The spear, atlatl and darts, and the new arrows, all faced relatively simple stresses in use. The spear was required to stand up to the torque of vigorous combat once a penetration was made, but it was very much just a strong tool-handle used to deliver a tool-head in the form of a point. The atlatl faced the least amount of stress in these early systems, being in effect a small hand tool that used a spur to throw a light and flexible dart. The atlatl dart did load energy during a throw but its purpose was swift flight to deliver a sharp point accurately and at a velocity sufficient to penetrate and kill.

With the bow, weapon technology entered a whole new world, a world of energy stored under pressure. A bow had to be bent without breaking in order to be strung. It then needed to be bent even further, under greater pressure, with an arrow placed on the string and when the string was released it needed to transfer energy from the bow, through the string to the arrow. At this point in the operation the arrow acted much as an atlatl dart did when it was thrown. The arrow would bend against the bow loading energy and then straighten as it left the bow flying toward the target.

The string of the bow needed to be incredibly strong but could easily be made from sinew or other naturally strong fibers.

The bow was as significant an advance in technology as had been the atlatl. The bow could deliver an arrow faster and farther than possible with an atlatl dart, and with great accuracy.

Very early arrows were likely close in appearance to atlatl darts, especially in regions where suitable shaft material was abundant. In parts of South America, where prehistoric technologies continue to be practiced by indigenous peoples, the arrows used are frequently as long as six feet. The availability of materials from which to fashion arrow shafts and bows varied by region as well as by changing climate conditions. In many areas suitable materials for the construction of darts, bows and arrows may have been very limited, requiring innovation or the use of less desirable materials. Some of the earliest arrow shafts discovered in Europe, used in association with reindeer hunting, were made from pine.

As the spear changed through the ages so did the bow and its arrows. Bows were fashioned from a variety of materials including wood, bone, sinew, and horn, and recurve technology was introduced where the two ends of the bow were bent forward to give even greater speed to the arrow. In time most arrows became shorter and some arrow points became very small. As arrows decreased in length and weight their range
and speed increased dramatically. Bows of any significant draw weight could still not be left strung for long periods of time without seriously weakening the weapon’s power, and the bowstrings remained vulnerable to water but their value was unchallengeable.

With the development of the quiver to hold arrows in readiness, and the large scale manufacture of arrows in early civilizations, archery took its place as a critical military asset. For the first time a weapon existed that could reliably deliver large numbers of accurate, long range, and deadly projectiles. With ranks of archers shooting standardized bulk arrows the game changed again.

Imagine a relief carving of an Assyrian warrior with braided beard, re-curved composite bow and a quiver of matching arrows. At his side is an innovation, a sword. He is with other warriors, some with bows and some with spears and shields, and they are members of an advanced, ordered, and civilized military system. History begins but the technological innovations of prehistory have left their mark and shaped the future.

Conclusions

Most importantly, the spear, the atlatl, and archery allowed humans to survive and subsequently to form our civilizations. The spear and the atlatl were especially important to our survival during the Ice Age. During the Younger Dryas (12,900 to 11,600 years ago), a still critical time for humans with extreme cold inhibiting an increase in the population, archery appears in Europe, replacing the atlatl in reindeer hunts as a more efficient weapon system. The spear, the atlatl and archery, in their own times, and in concert with other survival strategies, allowed humans to survive.

The three weapon systems had another long term effect influencing society. Hunting was initially of critical importance to man in supplying animal protein, and in places remains so today, but after the domestication of animals its critical importance in obtaining food diminished significantly, although as a male dominated activity it continued to thrive. Hunting large animals, especially with spear, dart, and archery, is a violent and brutal activity and perfectly suited for rites of passage, as well as to train and harden warriors.

Weapon systems had immeasurable effect on group society and in the long run on civilization. In any endeavor the methods we use are defined, as well as limited, by our tools and these items are the tools of war, defining by how they work military thought and the way wars are fought. Without the development of the spear and subsequently the atlatl and the bow, our concept of war would be different. Imagine the Legions of Rome, the Mongolian horsemen of Genghis Khan, or the English soldiers at Agincourt armed with bags of rocks.
It does matter to us that these technologies were developed. Without their development it would be a different world. The fact that early civilizations developed at all beyond small cities was influenced in great part by their ability to conduct war, to directly control large geographical areas and to press their influence beyond their borders.

The early civilizations, using chariots, were devastating in their military capabilities, but the chariot was primarily a delivery system for a warrior using arrows and spears. On its own, the chariot was technologically interesting but without weapon systems it would lack much of its purpose.

Brigadier General Chuck Yeager, USAF, once said that an airplane (in a military context) was just a platform on which to mount a gun. That is no different in concept from an Assyrian, Hittite, or Egyptian chariot delivering the weapon systems of spear, javelin and archery. Distance is dominated by weapon systems, and in large scale conflicts, whether in the ancient world or the modern, by the ability to transport men and weapon systems to where they are desired. The conquest of distance is therefore the key to understanding the importance of early weapons technology. It was the ability of humans to carve out spaces of their own that made the concept of property viable. It was the ability of humans to defend an area that made the development of cities possible. And with the rise of cities and greater cooperation, further technological developments became possible. But in the beginning were the spear, the atlatl and the bow.

Bibliography


Introduction

The role of geography phases in and out of civilizational studies, always competing with the roles of the individual and those of politics and culture. Today, modern geography is getting another run as a major player in how civilizations behave and interact. Jared Diamond’s important work, *Guns, Germs, and Steel: The Fates of Human Societies*, 1997, took on the question of geography’s role in the civilizational advantages of Eurasia over the New World and Africa. Robert D. Kaplan’s *The Revenge of Geography* (2012) shows the inevitability of much of today’s geopolitics that loom even above individuals and events.

One aspect of geography includes the evolution of megacities in developing countries and how such cities affect the behavior of their residents, including those attempting to govern them. Climate, aesthetics (an ignored topic), sociological issues, population explosion and the new fertility crash impact populations only recently living a village life.

Demographic changes are part of the study of geo-politics, as are the physical features where cities are located. Megacities must be studied by demographers, economists, medical practitioners, educators, and political scientists, which makes the discipline complicated and interactive. This paper can only provide an overview of a topic that will weigh most heavily on civilizationists for years to come.

Megacities

The rise of megacities is not a new phenomenon in the world. One fascinating study by Tertius Chandler\(^1\) traced the world’s largest cities back to the first in 3100 BCE. Since there were few censuses before the end of the 18\(^{th}\) century in Europe, he used travelers’ estimates, data on the number of households within cities, the number of wagons carrying foodstuffs for cities, the size of the military, the area of city walls, church records, food supplies distributed to the citizens, and even estimates of lives lost during disasters. These estimates include most of the suburbs as well.

Chandler provides a fascinating list, part of which is offered on the next page:
Of course, since 1965, many other cities have joined the list of megacities, some of them with severe problems in managing these communities. The difficulty in assessing the accuracy of these numbers can be seen in almost every printed table, such as that in Wikipedia, which posts conflicting figures from a number of sources. Those numbers provided by the United Nations are the most problematical and are at the moment on the low side. The UN numbers have been provided by the host nations themselves (I called and asked), which aside from the developed world, make little pretense of taking a census.

However, other institutions have posted their estimates for the largest metropolitan areas in the world today, and a number appear to be over 20 million: Cairo, Egypt; Dhaka, Bangladesh; Istanbul, Turkey; Kinshasa, Democratic Republic of Congo; Lagos, Nigeria; Lima, Peru; Mumbai, India; Rio de Janeiro, Brazil; Shanghai, China; and Tehran, Iran are among these. In addition are a rising number of other, some new, cities in China.

In all of these cities, the countryside farming villages are emptying out, creating huge slums in their country’s major cities. As terrible as these slums are, life there appears to offer more possibilities than life in feudal villages. Furthermore, as these countries are pushed into democratizing, the new city dwellers will vote, a daunting prospect for democracy’s future.

Says Forbes, urbanization is continuing rapidly, and it is estimated that by 2030, 60% of the world’s people will be city dwellers, “billions of people will be living in vast slums in the developing world, facing a long list of urban ills on which starvation may be just another bullet point.”
Forbes further notes that there is some hope that the developing world might learn from the most developed countries some techniques for surviving such growth. Tokyo, in 1900, was the world’s seventh largest city with 1.5 million people (London was the largest that year with 6.5 million). Today, Greater Tokyo is the world’s largest city with a population of 35.2 million. But Japan is having a population crash, which means that the growth of Tokyo is beginning to slow down. But even with 35.2 million, Tokyo is a modern, very well run metropolitan area. This is not so for the majority of countries, such as a number of those listed above. For example, Lagos had 300,000 people in 1950; it now has an estimated 16 million people, and it is a city already crumbling into chaos.

The New Left Review ran an article by Mike Davis, “The Third World’s Megacities,” in 2004, with an ominous first paragraph:

Sometime in the next year, a woman will give birth in the Lagos slum of Ajegunle, a young man will flee his village in west Java for the bright lights of Jakarta, or a farmer will move his impoverished family into one of Lima’s innumerable pueblos jovenes. The exact event is unimportant and it will pass entirely unnoticed. Nonetheless, it will constitute a watershed in human history. For the first time the urban population of the earth will outnumber the rural. Indeed, given the imprecision of Third World censuses, this epochal transition may already have occurred.


The fate of megacities appears to be a game changer indeed.

England’s Experience

Even well before the Industrial Revolution, during the time of Henry VIII, the nobility were enclosing grazing lands for the wool industry, forcing villagers to flee to London to find work. London had its first growth then. But by the beginnings of the Industrial Revolution in 18th century England, the countryside further emptied into cities with little infrastructure to care for them. Throughout Europe, this burgeoning growth made worse the problems of crime, filth, and diseases caused by crowding, lack of sanitation, and contaminated water. The Black Death cycles were over by then, but typhoid, tuberculosis, typhus, and other diseases cut swaths through urban populations.

Fortunately for Europe, these problems were addressed by the emerging scientific revolution. For the first time since Rome fell, cities began to have safe water and real sanitation systems. The discoveries of modern medicine began to treat the nastier endemic diseases. Today, modern cities in the developed world have become
increasingly livable. The rural exodus has been absorbed, educated, and integrated into the urban world and its suburbs. While not perfect, modern cities are by and large a triumph of order and the best of them continue to attract and flourish. This is not the case with the megacities of the developing world.

Africa

Probably the worst problems of mega-city explosions are found in sub-Saharan, Central, East and West Africa. The population explosion and the end of colonial occupation have pushed millions of people from villages into urban slums of such appalling ugliness that it boggles the mind. An American NGO that helps the handicapped around the Third World to make artificial limbs, wheel chairs, and promote awareness of the needs of such people, has an uphill struggle. They sent me a picture of a man on crutches (which is a rarity because the handicapped are hidden) trying to cross a main street in Lagos. There was a panorama of wall-to-wall cars, gridlocked against any pedestrian crossing, especially one who could not run, not to mention hobble.

It is a tribute to the innate health of many urban Africans that they have not been swept with infectious diseases from their inadequate water and sewage systems. But already, diseases such as AIDS have plagued the continent with devastating consequences, particularly for women and children.5

India

Again, it is a tribute to the hardiness of those who have survived childhood in village India that they can survive their megacities! India, with a population of over one billion, has few modern sewage systems. Children often run barefoot through slum streets full of raw sewage, in the shadow of the latest skyscrapers and lavish penthouses.6

The rivers of India are so polluted that it is a miracle that the millions who travel to the confluence of these rivers to take a sacred dip in the waters do not succumb. But then again, in Medieval Europe, most people survived the polluted holy water in the cathedrals. In both cases, this must be the power of faith over science.

Unlike some of the megacities in the developing world, Mumbai, however, is somewhat unique and planning is going on. Planners estimate that by 2031, the metropolitan region will increase to 34 million. The geography of the city precludes urban sprawl, something that may make transport strategy feasible. I would hope that by then India might have finally addressed its failure to have clean water and sewage systems.
China

Population explosion has created such demands on what were once China’s great rivers that some are now going dry before reaching the ocean. Those not dry are heavily polluted. But worse than the water issue in China is the air pollution in their megacity Beijing, now reaching levels that are already bringing an early death to the vulnerable young and old. This pollution is beginning to have political ramifications on China’s ruling party.

One would think that having a command society (the government makes all major decisions) would make city planning easier to implement. However, there are major complaints of political corruption and the consequences of bad planning create disasters so terrible that the generally stoic Chinese public raises the specter of public demonstration. Most of the megacities being built in western China today are of dangerously sloppy construction, a factor that outrages victims of earthquakes or floods in these regions and is beginning to create political problems for the government.

Aesthetic Consequences of Megacities

When I see pictures of the slums of Mumbai and those of Nigeria and the Congo, I wonder what the effect of such ugliness and barren landscapes is on children. Even filthy medieval European villages and towns had beautiful countryside around them—a place to escape when city life became too horrible. In addition, medieval cities had splendid cathedrals open to all people where something beautiful could be seen. Not so in today’s megacities, which must have an effect on a child’s psyche and perhaps play a role in the brutality of life in such places. This is an issue that warrants investigation by psychologists.

Geo-Political Case Studies: Turkey, Iran, and Russia

Turkey

The problems of both Turkey and Iran are related. Both are countries with clear national identities and histories. Both countries face an emptying of rural populations to the cities, the majority of them in the national population centers. Such population explosions strain infrastructure and bode ill for political security.

Turkey began with the Ottoman seizure of Byzantium in 1452 and soon became an enormous Ottoman Empire, comprised of numerous ethnicities and in some cases peoples with prior national histories (Greece, Armenia, Egypt, Morocco).

When the Ottoman Empire collapsed at the end of World War I, the army retreated to their original national homeland, today’s Turkey. They drove out the lingering
population of former occupants, Christian Greeks and Armenians. The Kurds, an
Iranian tribe, remained, because they were Muslim. The Kurds comprise the only ethnic
problem faced by Turkey today, and it is still unresolved.

Turkey’s main problem stems from the unevenness of its development. Western Turkey
was the beneficiary of enforced modernization, at the hands of a respected president
(with the army behind him), Kamal Ataturk. Western Turkey, and particularly Istanbul
(once Constantinople), were brought up to western standards in literacy, health, and
relatively orderly governance. All visible signs of Islam were banned: the veil, the fez,
and Arabic script. Islam was deliberately relegated to the realm of the personal, and its
beautiful edifices to near museums.

Eastern Turkey has a strikingly different geography from the West. It is actually part of
the Iranian geography of water-lean high plateaus. Agriculture has become increasingly
difficult as population increases and water sources prove inadequate. A grand
government water project is not yet finished, despite decades in the making. People are
leaving the villages for great cities (including those in Europe), living in slums on the
outsskirts of metropolises.

But unlike the slums of India and Africa, Turkish slums are clean and orderly. This is
in part attributed to Turkish culture, which is mostly law abiding and generally not
volatile. Villagers have also brought with them the one familiar institution in an
otherwise alien modern city: traditional Islam. Herein lies conflict with the secular
modern Turkey.

Because of democratic elections, these overwhelming hordes of traditional Muslims
have elected one of their own, the first Islamist prime minister, Recep Erdogan,
reluctantly permitted by the professional military who were once the guardians of
secular Turkish democracy.

The Islamist leadership has undertaken a careful, slow eroding of the secular nature of
Turkey. He has intimidated and reorganized the army, rendering it his tool rather than
the nation’s protector. The headscarf has returned in the public sphere and the prime
minister has made it clear that women should be at home having babies for their country
(in the face of a sharp crash of fertility).

In this orderly country, one issue has emerged that reflects the worst consequences of
the new megacities: abuse of women. Turkey is near the top of the global list for
murder and battery against women; I do caution, however, that they are on such a list
because statistics are being kept by secular women’s organizations who publish them
for the world to see. Such attention is not permitted in such other countries as Saudi
Arabia, Iraq, and Iran, all of whom may well have even worse numbers than Turkey,
although without watchdog statistics.
The Anatolia News Agency (July 13, 2013) reported that incidents of domestic violence in Turkey increased from 48,000 in 2008 to over 80,000 in 2011, representing an increase of nearly 70 percent. This data was gathered from Turkey’s law enforcement agencies. The majority of this abuse appears to be worst in the more pious rural areas of the country.

Wife abuse statistics may not indicate that conditions are worse for women today than ever before. The difference is that someone is counting. It is also possible that if this problem has increased, it may be the result of stress: stress of removal from rural villages to unfamiliar city slums; stress of women learning that they do not have to suffer abuse in silence; stress on the men who find any challenges from their women and daughters insufferable; and stress on the economy to absorb their numbers. Women are just the canary in the mine when it comes to stress.

Iran

Everything that applies to Turkey also applies to Iran. Iran also went through a steep modernization period under Reza Shah Pahlavi and his son, resulting in their first population explosion in centuries. Because modern technology does not require the peasant labor that farming required in the past, villages have emptied out, swelling every city, particularly Tehran. I lived in Tehran when the population of the city was two million. It is now perhaps 14 million for the city proper, and close to 20 million including suburbs, with a combination of modern amenities such as highways, trains, airports, water systems, sewage systems, skyscrapers, and city parks. However, it also has air pollution nearly as deadly as Beijing’s.

Unlike Turkey’s creeping Islamization, Iran’s was born in a 1979 revolution that restored Islam’s old power, including interference with the educational system, the civil service, courts, and most egregious of all, removal of women from equal status, along with a return of the oppressive Muslim dress code and curtailment of personal freedom.

This process is not sitting well in cities; it is difficult to give up certain social freedoms once one has had them. The educated class is unhappy, but so are the new slum dwellers from the countryside. For them, religion is their only familiar institution, one that is not only provided by Muslim operatives from their villages, but by politicians who provide benefits to curry votes in the make-believe democratic elections.

The stress of trying to bring former peasants into urban life is a global issue. It is alienating and stressful to people who have experienced one culture for centuries and are now plunged into modern urban society that frightens and repels them.

Women are the hot button issue that makes such stresses especially painful. Modernity demands the equality of the genders, an equality that threatens power structures down to
The family level. It is very difficult for women without education or the means to support themselves to abandon the former culture of male dominance. They recognize the devil they know, not the devil they do not know. On men, however, this stress is worse because they have the most to lose in modernization. It is difficult to give up total, life-and-death control over one’s family in patriarchal societies. Islamic and traditional Hindu village cultures are having the most difficulty with this loss of control, and their frustrations are being acted out against “enemies” considered easy targets, their womenfolk.

Russia

According to the editors of Stratfor (a strategic forecasts think tank), Russia's population of 143 million is expected to decline nearly 10 percent by 2030. The drop is mainly among ethnic Russians; however, for the moment, the population of Muslims, both indigenous and immigrant, is actually increasing. The decline of ethnic Russians and the increase in the Muslim population means Muslims may comprise 16 percent of the population by 2030. Some estimates put this figure at more than 20 percent, due to illegal immigration.

Of course, little noted by these estimates is that if the Muslim population modernizes, their fertility rates will resemble those of the Russian population.

Today, however, the increasing Muslim share of the Russian population has spawned an ultranationalist backlash. Over the past three years, large nationwide protests have demanded immigration reform and an end to subsidies for Muslim parts of the North Caucasus. A rise in ultra-Orthodoxy played into this, with religious-based vigilante groups trying to take responsibility for Russian security.

What happens when the Russian military must find recruits in a declining population of ethnic Russians? Stratfor notes that Moscow has to downgrade its ambitions from maintaining a million man army to maintaining an 800,000-strong one. The country's demographic changes have also prompted debate inside the Kremlin regarding whether and how Muslims should be integrated into the army.

Stratfor further notes: “In another major demographic change, the first generation born after the fall of the Soviet Union is coming of age. Approximately 21 percent of Russians were born after the fall of the Soviet Union. This shift has changed the mindset of the population. The new generation never knew a world dominated by Russia and the United States during the Cold War, and they were too young to understand much of the chaos of the Yeltsin era. Most of this generation's experiences occurred under a stable and relatively strong Russia under Putin. Thanks to the Internet, the younger generation also has had many more opportunities for exposure to the outside world than
were previously possible.” More than 50 percent of Russians now use the Internet, up from less than 10 percent in 2006.

Stratfor again: “Because of these changes, political discourse has become much more varied inside Russia -- something that has put extraordinary pressure on the Kremlin. Anti-Muslim sentiment, the generational changes and the expanded political consciousness all came to a head in 2011 and 2012, when large anti-Kremlin protests swept the country. The protests seemingly caught the Kremlin off guard. Moscow scrambled to respond, instituting a series of sweeping changes to government policy, demoting or purging key government members, and then cracking down on the protesters. In light of the new situation, the Kremlin has reconsidered how best to maintain control.”

Predictions

Modernization is inevitably on the move and tradition, both autocratic and Islamist, is fighting a losing game. But in the interim, conflict will be a norm. An unexplained fertility crash in the worst of these places will provide eventual relief.9

A declining population will take the stress off modernization and may well raise the status of women. In addition, Islam is facing an increasing demand for a reformation in which the religion can live with modernity. The current spate of Islamist governments in the wake of the Arab Spring is being challenged by people who do not like what they see in theocracies.10

Traditional Asian societies such as China and South Korea have made the transition to modernization successfully. It will be more difficult for the Muslim world, but the trajectory is inevitable.

But most important of all, there are predictions that today’s dysfunctional megacities will eventually adopt the city planning methods of the developed world and will have much better outcomes than those we see today.11

The first necessary change is to recognize the problems. That is happening today.

NOTES


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Europe as a Civilization
The Revolution of the Middle Ages & The Rise of the Universities *
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Introduction

Although "Western Civilization" has long been a commonly used term, the idea of "Europe as a Civilization," I believe, needs articulation. This requires both a serviceable definition of a "civilization" and a historically and conceptually rich analysis of the formation of the European tradition. As I shall argue, Europe in the Middle Ages underwent a radical transformation that up to the present has been inadequately understood and insufficiently articulated.

I start with the long neglected "Note on the Notion of a Civilization" published in 1913 by Emile Durkheim and Marcel Mauss.1 In their short essay Durkheim and Mauss hit upon three seminal ideas indispensable for the new civilizational analysis of the last three decades. Without those insights viable criteria for classifying cultural groupings as "civilizations,” or as societies, are absent. Consequently, other writers doing civilizational analysis tend to follow the pattern established by anthropologists and ethnographers who mainly try to identify any distinctive cultural group, ancient or modern, and call that group a “civilization” without utilizing the deeper analytic insights of Durkheim and Mauss. What Durkheim and Mauss noticed was that

social phenomena that are not strictly attached to a determinate social organism do exist; they extend into areas that reach beyond the national territory or they develop over periods of time that exceed the history of a single society. They have a life which is in some ways supranational.2

Here the defining criterion is a transnational or supranational emergence that goes beyond the original group that generated the symbolic capital. Consequently, the authors claim that, “A civilization constitutes a kind of moral milieu encompassing a certain number of nations, each national culture being only a particular form of the whole.”3

* An earlier draft of this paper was presented at the Conference on "The Academy and Western Civilization," St Vincent's College, Latrobe, Pa, April 11-13, 2013.
2 Durkheim and Mauss, ibid, p. 810.
3 ibid, p. 811.
This is, of course, what Europe as a civilization came to be. Moreover, Durkheim and Mauss observed that not all social phenomena have the same ability to be transported, to be universalized to other social or national groups. They laid out a major task, still unfulfilled, which is, to explain on what this “unequal coefficient of expansion and internationalization depends.” Put differently, this idea of a “coefficient of expansion” possessed by some social phenomena suggests the striking process of universalization, without which civilizations and civilizational phenomena would not exist. Moreover, it is important to consider the degree to which the universalization of civilizational complexes has been a voluntary process in contrast to an imposition by an expanding empire. From today’s perspective, we know that even those civilizational complexes that have the ability to be assimilated over time and over vast stretches of territory also have their limits; and yet certain of these phenomena, whether they be described as aspects of “Westernization” or “globalization,” seem to have still more potential to expand voluntarily around the globe.

In Benjamin Nelson’s reformulation of these seminal ideas, civilizations are composed of “the governing cultural heritages of 2+n societies, territories [or] areas which generally enjoy or have enjoyed a certain proximity” to each other. Furthermore, what gives a civilization in this sense an identity is the existence of a set of shared civilizational complexes, such as religious commitments, legal concepts and processes, intellectual categories and modes of logic. Sometimes Nelson referred to these cultural phenomena as the “directive structures” that shape human thought and action.

However, one could also refer to these internationalizing and globalizing transformations as contributions to "world culture" and "world polity." Considered in this light there have already been impressive moves in this direction, attempting to describe and understand the construction of world culture as elements of the Western tradition became firmly established in the emerging global polity.

Although the scholars working on this research program have not articulated an appropriate civilizational context, and have seriously truncated the requisite historical time frame needed to unravel these developments, they are aware of the need to "study the origins, expansion, and characteristics of the world polity," to understand how these cultural elements evolved out of Western civilization and served to create a "coherent world culture, society, and set of institutions that might plausibly influence nation [states]." Furthermore, they are keen to explore "in which substantive areas [of] world

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society norms [have] been clearly worked out, codified, and institutionalized." It remains to be seen how this agenda could be fulfilled without paying much more attention to the early legal foundations of international law that underlie virtually all international business and diplomatic negotiations worldwide. Furthermore, it is evident that, though the exponents of this research program refer to "world culture," they point out that the participants recorded in the datasets of international organizations come "mainly from Europe and North America." This suggests that in fact this "world culture" is basically "internationalized" European culture among countries that have historically been part of "Europe overseas." The task of studying the spread of European (or global culture) to non-Western civilizational areas, to China, the Islamic world, Russia, Central Asia, and the Indian subcontinent, has hardly begun.

That said, it is evident that serious scholars with highly sophisticated methodological techniques have lent considerable currency to this effort of exploring how transnational phenomena expand across the world. The task remaining is to focus on intercivilizational encounters and transmissions.

In what follows, I have attempted to synthesize several strands of European history that coalesced at the core of the European experience, and in doing so, laid the foundations for Europe's institutional uniqueness and civilizational design. That was, above all, rooted in its unparalleled legal structure. Unfortunately, many scholars who have written with great insight and authority about this period have entirely neglected the singular legal history of Europe and its centrality to all the developments of that era. Hopefully in the future that history, which includes the foundational ideas of human rights, due process of law, and constitutional democracy, will not be so neglected.

The Revolution of the Middle Ages

Any broad evaluation of the social, legal, and political development of Western Europe that took place in the twelfth and thirteenth centuries will show that it witnessed sweeping legal reforms, indeed, a revolutionary reconstruction, of all the realms and divisions of law - feudal law, manorial law, urban law, commercial law, and royal law -

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and therewith the reconstitution of medieval European society. It is also true that neither Islamic law nor Chinese law passed through an equivalent radical transformation. Consequently neither of those systems of law ever recognized the broad variety of competing legal jurisdictions found in Europe; for example, commercial, urban, public, and professional jurisdictions were recognized throughout Europe.

In any event, it is this great legal transformation that laid the foundations for the rise and autonomous development of universities, but also the pursuit of modern science, the rise of constitutionalism and parliamentary democracy, the foundations of what we know as due process of law, the very idea of elective representation in all forms of corporate bodies, the legal autonomy of cities and towns, and a vast array of additional legal forms unique to the West.

At the center of this development one finds the legal and political principle of treating collective actors as a whole body - a corporation (universitas is the medieval Latin term). The emergence of corporate actors was unquestionably revolutionary in that the legal theory which made them possible created a variety of new forms and powers of association that were distinctly European.

Furthermore, the legal theory of corporations brings in its train organizational principles establishing such political ideas as constitutional government, consent in political decision making, the right of political and legal representation, the powers of adjudication and jurisdiction, and even the power of autonomous legislation. Aside from the scientific revolution itself, and perhaps the Reformation, no other revolution has been as pregnant with new social and political implications as the legal revolution of the European Middle Ages. By laying out the conceptual foundations for new institutional forms in legal thought, it prepared the way for the two other revolutions--the scientific and the economic.

Consider for a moment what this idea of “autonomous legislation” means. It means that some public body -- some corporate entity, some group of citizens -- is capable of composing and promulgating new laws that transcend Biblical injunctions, customary law, Quranic legal prescriptions, or even edicts issued by an Emperor in China. But of course, that power of autonomous legislation did not exist either in Chinese or Islamic law of the early modern period.

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10 This assessment was first announced by Harold Berman in his landmark study, *Law and Revolution. The Formation of the Western Legal Tradition* (Cambridge: Harvard University Press, 1983).
11 I discussed these different legal systems in *The Rise of Early Modern Science: Islam, China and the West* (New York: Cambridge University Press, 2nd edition 2003), especially chapters 4 and 7. I am currently working on separate essays to outline these differences more completely.
Some Phases of Development

Let me now sketch out some stages of the European legal and social revolution. Because this period has not been studied sociologically and systematically as a case of social, political, and intellectual revolution, it is difficult to determine where one should begin. So let me start in AD. 1000.

Around 1000 AD commerce began to revive in southern Europe and then to spread northward. This was conjoined with the rise of commercial fairs and the rise of new cities and towns. But there was also a profound wave of economic growth in the Hanseatic cities in the north centered on Hamburg and which expanded south and eastward at the same time. First, however, we need to focus on some earlier far-reaching intellectual developments.

As we may recall, back in the early 6th century A.D. the Emperor Justinian told his legal experts to radically trim down and consolidate the existing Roman legal code, and especially to prune away the unending commentary of judges and scholars. The end result was the Roman Corpus Juris Civilis (the Roman Civil Law) that Justinian put into effect across the empire in 534 A.D. However, the code did not fair well in the Western empire because it was collapsing. Consequently, with the collapse of the Roman Empire in the West (after 476), the Corpus Juris Civilis was lost, not to be recovered until about 1070 AD. But when it was found and recovered it jolted legal scholars into action.

At first the scholars did not understand it and so commentators known as the Glossators set about writing marginal commentaries, perhaps correcting grammar, explaining the new conceptual terminology, but most of all, trying to master the 2000 pages of this extraordinary legal system. But they also began teaching it. It is in the circle of these early legal scholars that we indeed find the earliest seedbeds of the universities. Notice also that these legal scholars were civilian or secular scholars who were free to move around as they were not committed to a particular town, much less a building. They were a community of scholars and students, most of whom came from outside town and

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even outside Italy. They could move on a moment's notice to another town where social, legal, and economic conditions might be better.\textsuperscript{14}

By 1200 these legal scholars had become a distinct literate class of specialists; they had mastered the Roman legal corpus, and in a great many ways, had modified, systematized and transformed it into a new legal science which was now to be taught for the first time in universities across Europe. The initial leading center of this new science of law was at the university in Bologna. There, legal scholars taught the new science focused on secular issues and everyday social and economic causes.

But at the same time, a scholar and monk by the name of Gratian took it upon himself to rethink the whole great amorphous body of laws then known to him, and to create what he called a Harmony of Discordant Canons--first issued in about 1140. Here the word canons simply means "rules," but especially rules that had been adopted by the Christian Church, which in a very short period of time became a standard legal text used all across Europe, though the Church never officially promulgated it.

What Gratian had done was to collect legal texts from Church councils, papal letters, the writings of Church Fathers, passages from the Bible, and a host of secular sources such as Roman and German law. His great effort was designed to point out the contradictions in these legal rules, to remove them, and to find the underlying legal principles that ought to prevail.

All of this is an example of what the great German sociologist, Max Weber (and many other scholars) called the rationalization process; i.e., the process by which legal rules and procedures were made more coherent, consistent, and rationally explicable.

So now Europeans had a new legal science based on new texts, all of which became what legal historians call the ius commune, the common law of Europe that began to spread from south to north, to Germany, Britain and Scandinavia. Moreover, law students across Europe now had to learn both the Canon Law and Civil law, because (1) the Church universal had courts all across Europe, and (2) lawyers specializing in the civil law might be called upon to defend a case in an ecclesiastical court.

Here then we have the first and second legs of this medieval revolution. First we have a new legal science that was being taught in the free floating schools (later universities) and applied across Europe in both secular and ecclesiastical courts. To the degree that

this new legal system established new institutional foundations for the emerging European civilization, it was legal scholars in the schools who underwrote this whole development.

Second, the medieval legists recognized the legal rights of collective actors, that is, legally autonomous entities, sometimes called "fictive personalities." Among these we find cities and towns, charitable organizations, professional associations of doctors and lawyers, as well as merchant guilds— all of which could create their own rules and regulations. These new entities were treated as collective individuals, and they had a whole new bundle of rights: the right to own property, to sue and be sued, to make their own rules and regulations, i.e. to act as legislative entities. Such entities had the right to be represented by attorneys in courts, and before the king's court regarding taxation.15

Furthermore, these entities were said to be governed by the principle of, "what concerns all should be considered and approved by all" -- a Roman maxim.16 While today we think of corporations as primarily significant for commercial enterprises, their original impact was in the sphere of public law, where their presence radically transformed the whole basis of political, constitutional and economic life in Europe. For it was the presence of these new entities that established the foundations for parliamentary democracy. Indeed, the first European parliament was founded in 1188 in Spain quickly followed by many other regional parliaments in Spain, then in Portugal, Sicily, southern France, Paris in 1298, then the Estates General in 1302 as parliaments became a pan-European institution.17 Indeed, the effort to establish constitutional regimes in which the people were deemed to have a legitimate voice was a great struggle carried on broadly across Europe from the Middle Ages onward with the final culmination in the revolutionary new political thought of Scotland, Holland, France and then England in the 16th and 17th centuries.18

Third, the canonists and civilians established new principles of due process of law that applied to all individuals who were involved in legal proceedings. By the end of the 12th century this new system had been formally articulated as the ordo iudiciarius (the

16 Berman, Law and Revolution, especially p. 221; and Gaines Post, Studies in Medieval Legal Thought, chapter 4, and pp. 51ff.
system of legal procedures).\textsuperscript{19} According to this legal doctrine (which was established in court cases and Papal decretals), every trial must involve a plaintiff and a defendant, advocates for those two parties, the appearance of witnesses, the presence of court recorders such as clerks, proctors and notaries who record the names of those present at the trial, what each person said, and if written evidence were presented, it too would be redacted into the court record. Again, this was established legal procedure by the end of the 12th century-- all worked out by legal scholars usually attached to the schools and emerging universities. Such formal legal procedures did not exit in Islamic or Chinese law then or later.\textsuperscript{20}

In addition, the procedures established the right of any accused person to be notified of a complaint, the \textit{right} to appear in court and testify, and, above all, to be represented by a legal expert. By 1200 it was firmly established that anyone appearing in a court could elect to have legal assistance and was well advised to do so. But if he did not do so he was forewarned, as one writer put it in 1169

\begin{quote}
If someone is brash enough to presume to rely on his own devices even though he is inexperienced and does not wish to have an advocate, let him do so. Everyone is free to muck up his own case.\textsuperscript{21}
\end{quote}

Here then we have the outline and details of due process of law, assumed to be universal, that must be applied in all legal proceedings -- all set out by the end of the 12th century.

But -- fourth-- this process went even further toward the establishment of additional legal principles that applied to the Prince and Pope alike. The most important case establishing that these principles applied to the Prince as well as ordinary citizens concerned King Henry of Luxemburg and Robert of Naples. In 1311 King Henry moved to be crowned Emperor of the Holy Roman empire and in doing so intended to displace Robert of Naples and his kingdom. In the process Henry condemned King

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\textsuperscript{20} I have set out some of these strong differences in "The Rise of Europe and Institutional Divergence," Paper presented to the University of Zurich (Applied History Lecture: The European Miracle. Vorlesungen über die Europäische Epoche der Welt), October 18, 2012. For the complete absence of such formal safe guards of due process in contemporary China, see the August 2012 case of Madame Gu, accused of murdering a British business man. At her trial her lawyers were removed, no defense was possible, and no court recordings (written or voice) were permitted. Andrew Jacobs, "Fast-Paced Trial in China Leaves Shadows," \textit{New York Times}, August 9, 2012, p.1.
\end{flushright}
Robert, declaring him to be a traitor and an outlaw to the Empire. Pope Clement V did not agree with these declarations and tried to mediate between the two parties.\textsuperscript{22}

Luckily-- or unluckily-- Henry died (in 1313) before he could move to displace Robert forcefully; but Pope Clement V stepped forward with legal opinions curtailing such presumptuous condemnation of an adversary. The Pope solicited opinions from the best legal scholars and all of them averred that the right of self-defense, both physical and legal, was a right granted by natural law and it could not be taken away. Hence King Henry's rulings were without merit and were annulled. Furthermore, Pope Clement went on to issue several more legislative rulings, clearly stating what due process of law entails and how it must not be abridged. In his final ruling, indeed a constitutional document called \textit{Saepe contingit}, he established these principles, which of necessity must be upheld by the Prince. Legal scholars have concurred that this legal ruling of the very early 14th century was "the most important single piece of medieval legislation in the history of summary judicial procedure."\textsuperscript{23}

In a word, by the opening of the 14th century, European law had established legal principles restricting the actions of the Prince, but not only that, the Pope. The principle that the Pope too is subject to natural law and may not abridge a defendant's right of self-defense was established in a notorious case involving the Medici's and the attempt of the Pazzi family to eliminate them violently. The result was that Pope Sixtus IV (who had condemned Lorenzo de Medici without a trial) had to back down while acknowledging that, just as Adam of the Bible had to respond to God's summons to judgment, so too "neither Pope nor Prince could dispense with this part of the judicial process because no one can ignore a precept of divine law."\textsuperscript{24} In other words, the earlier legal principles that restricted the actions of the Prince applied in the same way to the

\textsuperscript{22} This case has been spelled out in considerable detail by Kenneth Pennington in "Due Process, Community, and the Prince in the Evolution of the \textit{Ordo iudicarius}," \textit{Rivista internazionale di diritto commune}," 9 (1998): 9-47; and Pennington, \textit{The Prince ad the Law, 1200-1600: Sovereignty and Rights in the Western Legal Tradition}.

\textsuperscript{23} Stephan Kuttner, "The Date of the Constitution 'Saepe'...," \textit{Melanges Eugène Tisserant IV} (1964): 427-452, p. 427. Technically, the ruling concerned "Summary proceedings" which are special proceedings held in unusual circumstances, possibly entailing threats of violence and or public harm.

\textsuperscript{24} This is the judgment of the 15th century legal scholar Francesco Accoli, said to be the greatest legal scholar of his time; as paraphrased by Pennington, \textit{The Prince and the Law. Sovereignty and Rights and in the Western Legal Tradition}, p.188. Also see Lauro Martines, \textit{April Blood. Florence and the Plot Against the Medici} (Oxford, 2003).

This case occurred in 1478 and concerns what has been called the Pazzi Conspiracy. This bloody episode took place in April 1478 when members of the very wealthy Florentine banking family, the Pazzi's, tried to assassinate the Medici's while in Church on a Sunday. They did kill one of the Medici brothers in the Cathedral, but the leader of the family, Lorenzo the Magnificent, escaped and proceeded to declare war on his enemies, including the Papal State. However, some of his supporters kidnapped an Archbishop, who was soon hanged. Pope Sixtus IV summarily condemned and excommunicated Lorenzo without a trial, despite Lorenzo's claim that he was innocent.
Pope. Neither he nor the Prince could issue summary judgments without actually holding a trial. Here again we find unique European contributions to international legal development and above all, the idea of legal restraints on the highest officials.

Now in recounting this legal history I do not suggest that the people of Florence in the 15th century were particularly law abiding -- they most definitely were not. Nevertheless, a precedent had been established and future rulers who wished to be regarded as lawful occupants of elective or appointed office had to abide by such rules. Of course, it took time for the rule of law as we understand it to become widely and deeply established; nevertheless, the institutional apparatus had been constructed, civil and ecclesiastical courts had been established all across Western Europe. And let us not forget that the lords of England forced King John of England to submit to the *Magna Carta* (in 1215) which, likewise, restricted his sovereign powers and required the establishment of a jury system for legal proceedings.

**Law, Commerce, and Self-government**

Before we get to the universities more directly, it is important to note that the revolution of the Middle Ages that I announced at the outset, was indeed a society- or civilization-wide transformation. This new legal regime had powerful implications for every aspect of social, political, and economic action, so I need to say something about the impact on ordinary business transactions. Of course, the new legal science, both Canon and Civil, spread unevenly across western Europe, but the trend and result is clear.

As we know, it is imperative for those engaged in business dealings that they have a secure sense of their rights to ownership, the possibility of regulating trade, and the availability of legal officials who can authoritatively adjudicate business conflicts. As legal scholars know, the very foundations of business transactions establish what are sometimes tedious conceptions that set out what kinds of transactions can be carried out, the limits of individual and collective action, what happens to collective assets when people die, and so on.

What happens, for example, if a business partner dies? Islamic law dictates that if any partner dies or withdraws, the partnership and the enterprise completely dissolves, whereas European business partnerships and corporations have lives of their own.

Moreover, economic historians have shown that during this same period of time, the 12th and 13th centuries, and especially in Holland and the Low countries, villages and urban conclaves were forming in which people were acting collectively to self-govern,

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to regulate collectively-owned grazing grounds known as "the commons," to regulate grinding mills, riverways, and other assets that were considered jointly owned by the community. Such communities formed their own judicial bodies; bought, sold and rented property; hired clerks, even an occasional police officer and other agents who worked for the collective public enterprise.26

To us moderns this seems normal, but the fact is that this kind of legitimate communal self-organization, bound by law with articulated rights and prerogatives, was a wholly new thing not witnessed elsewhere. This whole new legal arrangement proved to be a boon to the rise of early modern capitalism, to the whole commercial revolution of the 13th century and 14th centuries that would include all sorts of new collective trading entities. These would include extra-familial firms (otherwise known as legally recognized companies), as well as joint stock companies and formally organized banks whose records constituted legal documents available to public scrutiny.27 Clearly, the legal revolution of this time had very far reaching consequences for political, economic, and intellectual development.

Indeed, recent scholarship has added considerable weight to the assertion that Europe's legal revolution in all its dimensions contributed measurably to the economic ascendance of Europe in the early modern period in comparison to other parts of the world.28 Whether one attributes a causal link between the new legal science or the rise of the universities and the teaching of the new legal system, the evidence suggests that the availability of the new legal conceptions, lawyers, and courts greatly facilitated economic growth in Germany and other parts of western Europe.29

28 For estimates of world economic development, see Angus Maddison, *Historical Statistics of the World Economy*, 1-2008 (http://.ggdc.net/maddison/Maddison.htm)
Universities and the Scientific Agenda

As the previous discussion has suggested, the universities were both a product of, and agents of the great legal revolution that swept across Europe during this era. Ever since the late 19th century, scholars have referred to this great revival and renewal as "The Renaissance of the Twelfth Century." One aspect of that renaissance was the rise of the universities which was the product of a demographic and educational revolution that has no better description than the following:

At the beginning of the century [i.e., 1100], numerous urban schools appeared in Western Europe to challenge the supremacy [that] monastic schools had enjoyed since the early Middle Ages. These new schools dominated the intellectual scene until the beginning of the next century, when those at Bologna and Paris were transmuted into universities.

We should recall that the Cathedral schools taught the seven liberal arts (i.e., grammar, rhetoric, and logic along with arithmetic, geometry, music and, astronomy), but a new crop of scholars, drawn from all over Europe began traveling to the centers of learning, usually the cathedral schools where they had heard outstanding scholars were teaching. This movement had begun in the 11th century, but in the early 12th we have many reports of outstanding scholars, in small towns around the periphery of Paris (such as Chartres, Laon, Reims), who were attracting these foreign visitors. It is said that the students "traveled to hear of new techniques and new texts, [as well as] the manner of applying them to the study of law, medicine, the Bible, or the nature of the physical" world. On the one hand, we have these young people showing up uninvited to study with a learned master, causing a certain amount of conflict and friction with the local townspeople in the context of the need for food, lodging and of course, drink.

On the other hand, some of the scholars themselves, including some of the tutors of the aspiring students, had ambitions to create their own following and set about doing so by challenging the masters in the cathedral schools. The most famous of such people we usually hear of was Peter Abelard (d. 1142), who first challenged Master Anselm at his school in Laon (about 30 miles outside Paris). When that did not work, he set about

making his name in Paris, starting in about 1098, by attempting to dispute and displace William of Champaux who was the leading scholar at the school of Notre Dame.

Abelard was just one of many outstanding scholars who emerged during this time and challenged the authorities with regard to every aspect of religious and classical learning. Abelard is, of course, the author of the famous *Sic & Non* -- "Yes and No" -- treatise that listed many opinions of the Church fathers and other religious texts which were clearly in conflict with each other. Some of the scholars of the time thought Abelard was just being a skeptic, undermining Church authority, whereas his real mission, he claimed, was to get to the truth, to use dialectic and the tools of reason and logic to sort out the truths of faith. As many scholars have pointed out, this band of philosophers around Paris transformed theology into "the queen of the sciences."

Among the pioneers of this movement one finds Master Bernard of Chartres (d. after 1115); Anselm of Canterbury (1033-1109); John of Salisbury (d. 1180); Hugh of St. Victor (ca. 1096-1141); and Peter Lombard (d. ca. 1160). This story of the transformation of Christian religious thought into systematic theology has been told by many scholars. 33  The thrust of this transformation, beginning in the late 11th century, is revealed by Anselm of Canterbury's bold move to use reason to demonstrate the truth of faith and to transcend the authority of Scripture. Anselm said that he took this path because of the request of fellow monks; and so he composed a treatise,

in order that nothing in Scripture should be urged on the authority of Scripture itself, but that whatever the conclusion of independent investigation should declare to be true, in an unadorned style, with common proofs and with a simple argument, be briefly enforced by the cogency of reason, and plainly expounded in the light of truth.34

This ascendance of rational argument over the plain simplicity of the Scriptures never emerged in Islamic religious thought and still remains an impediment to religious innovation in Islam.35


34 St. Anselm, *Proslogium; Monologium; An Appendix in Behalf of the Fool Guanilon; and Cur Homo*, as cited in Grant, *God and Reason*, p. 54.

35 The fundamental problem is that *kalam*, "theology," was never freed from subservience to *fiqh*, the strict legal interpretation of the tenants of Islam. It was not destined to become, as in Christianity, the *queen* of the sciences. See Huff, *The Rise of Early Modern Science*, pp. 110-11; and Huff, "Reformation in Islam?" *Society*, 44, Number 5 (July/Aug) 2007: 62-69. The stagnation of Islamic theological thought
Still another powerful spur to this rationalistic strand in Christian religious thought is found in Peter Lombard's "Sentences" (ca. 1150), pointing the way toward reconciling biblical passages with philosophical questioning. Subsequently his theological reflections became the most cited text for the next several centuries, all the way to Luther who also commented on it.36

In this sense, the 12th century witnessed a multidimensional intellectual revolution, including a "theological revolution," as scholars emerged who pioneered new ways of thinking about every aspect of law, religion and the natural world using the tools reason and logic. The result was the gathering of many students in places like Paris, which in turn attracted more scholars who created their own following of students. Nevertheless, these scholars and their students remained outside the control of the official schools sponsored by the cathedrals. These itinerant scholars coopted the teaching of many subjects, bringing new methods to bear, taking the educational process out of the hands of church officials who had dominated education up to that point.

As a floating community of scholars with lots of student followers, they could easily move on, leave Paris, or a particular location, if Church officials tried to interfere or if the locals (landlords, shopkeepers and restaurant owners) treated them or their students badly, which did happen from time to time. It was out of this fear of such flight that officials in Bologna enacted laws forcing scholars to swear an oath that they would not leave town.

What became the University of Paris was this floating community of scholars and their students (perhaps 2-3000 students at the end of the 12th century) who quietly banded together forming a corporation -- a universitas or a studium generale and that gave it a perpetual state of legal autonomy.37 With their experts on Civil and Canon law among them, the scholars knew how to use the legal instruments of the day, and thus used them to garner the masters a broad bundle of rights, such as the ability to make their own rules and regulations, to establish matters of curriculum, to sue and be sued, and of course to own property-- and much more.

Furthermore, whenever public conflicts arose the King and other officials, including the Pope, were eager to confirm the rights and privileges of these scholars, for they brought fame and recognition for Paris and to the Church. The King did so by granting various charters to the scholars that gave them privileges and immunities that also compensated

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37 Gaines Post, "Parisian Masters as a Corporation, 1200-1246" in Studies in Medieval Legal Thought, Chapter 1.
for being foreigners with diminished legal rights, though they did have what is called the *benefit of clergy*. These privileges and immunities included exemption from local taxes, freedom to teach and to move about in the city, and perhaps most important of all, immunity from the obligation to pay the unpaid bills of a countryman who had left the city in debt. Not least of all was the right to be tried in an ecclesiastical court if one should be arrested for a misdemeanor or more serious offense.

In brief, the University of Paris evolved into the most prestigious university of its time in Europe and became a model for others. Of course, there were many other patterns and different universities specialized more in one subject than another, but in all cases, whether establishing a new law school or a new medical college the same legal structures were put into place, granting the new freedoms of inquiry while encouraging the perfection of the new modes of thought that were blossoming all across Europe. From the 12th century onward to the middle of the 17th century, there was a continuous rise in the founding of universities all across Europe. If one plots the number of these institutions across Europe from that time, one will get a graph with a line rising at a step forty-five degree angle.\(^{38}\) It was a European-wide phenomenon.

**The New Curriculum**

Let us take a closer look at the curriculum that began to emerge as these new educational institutions formed across Europe. In Paris the Masters created four Faculties: the Faculty of Theology, that of Law, Medicine, and the Arts. While Paris was preeminent in the teaching of Theology, Bologna outshone it in Law, and in Medicine the university in Montpelier has generally been rated higher. Nevertheless, the great scholars in logic, philosophy, and theology in Paris carried the day in refashioning the arts curriculum so that in fact, the study of the natural sciences stood out.

In effect, the longstanding Arts curriculum (composed of the *trivium* and *quadrivium*) was transformed into the Three Philosophies: Moral Philosophy (or Ethics), Metaphysics, and Natural Philosophy.\(^{39}\) This adaptation was an equally transformative outcome that reorganized the old Arts curriculum of the cathedral schools into a progressive and indeed, scientific new orientation. It did this by introducing into the curriculum the so-called "New Aristotle" and especially his natural books. What the Europeans did was to institutionalize a whole new curriculum of naturalistic studies. These inquiries raised all sorts of questions about the natural world. The same method of compiling questions and working out answers that had been used in the study of Law and Theology was now employed with equal vigor in the study of the natural world.


For example, in naturalistic studies scholars asked "whether the world is round... whether the earth moves... whether it is possible that other worlds exist,...whether the existence of a vacuum is possible," etc. What the founders of the new universities did was to place at the center of this new curriculum the natural books of Aristotle which included his Physics, his books On the Heavens, On Generation and Corruption, On the Soul, Meteorology, The Small Works on Natural Things, as well as biological works such as The History of Animals, The Parts of Animals, and The Generation of Animals. It is with these books, Ed Grant observed, that we find "the treatises that formed the comprehensive foundation for the medieval conception of the physical world and its operation." This was indeed a core experience that was essentially scientific. Put differently, the Europeans institutionalized the study of the natural world by making it the central core of the university curriculum.

Moreover, this curriculum was unique in the educational history of the world because the Muslim world prohibited the introduction of Aristotle's natural books into the center of its teachings in the madrasas, while the Chinese did not have a philosophical tradition equivalent to Aristotle's natural books; nor did it mandate the study of naturalistic questions for the state-sponsored Civil Service Examinations that served to select scholars to become government officials.

Despite the impressive reorganization of higher learning in Europe during this era, some have claimed that the medieval and early modern universities inhibited the study and pursuit of science; yet when we look at this question from a comparative and civilizational point of view, there is no evidence of such retardation. By and large those who have raised these criticisms have based their claims on a faulty understanding of Aristotle and his work, and on anachronistic and unrealistic comparisons between medieval and modern universities. More plainly, the comparisons have been made on the basis of caricatures of medieval scholars rather than what the leading intellectuals actually laid out.

Moreover, if one looks carefully at the record, one will see that there is a direct continuity between many of the questions raised by the 12th and 13th century naturalists and the experimental pursuits that were carried out in the 17th century during the scientific revolution. These included experiments with magnetism and the discovery of

40 For the long list of such naturalistic questions, see Grant, A Source Book in Medieval Science (Cambridge: Harvard University Press, 1974), pp. 199-209.
electricity, the study of pneumatics, air pumps, and the vacuum, and of course, all the post mortem examinations of human bodies that had been going on in universities across Europe since the 13th century (and earlier), and were also encouraged even by Church officials.

If we look at the actual comparative and historical record, what we find is that the teachings of the universities from the 12th century onwards served to inculcate a spirit of scientific inquiry—that is, it instilled a fundamental intellectual curiosity that was to persist all the way to the present, while conversely, that same spirit of innovative inquiry did not take hold outside of Europe. In the case of European universities, one might even suggest that the effect of studying natural philosophy there, in the period leading up to 1600, was so strong that many of the pioneers of the 17th century revolution were highly educated laymen, not scholars attached to the universities. This is not to suggest that the universities of Europe had become less important, but rather that the ethos of science had jumped the bounds of strict university identification. This assertion regarding the effects of the medieval universities on scientific innovation might seem a controversial proposition, so consider the following test.

A Test Case

A few years back I came up with what I see as an acid test of this proposition. It concerns the invention of the telescope by a Dutchman in 1608. Just as soon as this invention appeared, people like Galileo, but not only he, quickly saw its importance for astronomical inquiry. It was in fact a discovery machine, though of course it had to be improved (as it was) and focused on new astronomical phenomena, which is what Europeans did throughout the 17th century as the scientific revolution unfolded.

As we recall, Galileo used the telescope to discover the rough cratered surface of the Moon, the four satellites of Jupiter, the phases of Venus, and a bold conjecture about the rings of Saturn. Consequently, the arrival of the telescope and Galileo's early astronomical announcement of his discoveries (in 1610) set Europeans on fire with excitement. They wanted to know, are these claims of Galileo true or mere fabrications? So other astronomers, religious scholars, merchants, and ambassadors quickly acquired their own telescopes and set about testing Galileo's claims. Within a year of Galileo's announcement (it was called the Starry Messenger), all of these

discoveries had been confirmed both by other scholars and Church officials. What was controversial was the claim that these surprisingly results -- the cratered surface of the Moon, the Satellites of Jupiter and the phases of Venus-- were fully supportive of the Copernican worldview, which they were.

Some Church officials disputed that, but they did not dispute the observational reports of Galileo that Roman College officials themselves had seen. Indeed, Galileo was feted at the Roman College in 1611, some time before religious reactionaries who knew nothing of Galileo's work raised a number of fundamental metaphysical concerns. The controversy went on for some time but the fact remains that the telescope's arrival provoked a new series of inquiries all over Europe, and this led to the transformation of the practice of astronomy, turning it from a slow plodding inquiry into a new science looking for more astronomical discoveries. And of course there was a race to make bigger, more powerful telescopes.46

But then, we ask the question, what if the telescope were taken to other parts of the world, to China, India and the Ottoman Empire in these same early years of the 17th century? As I have spelled out elsewhere,47 nothing happened. Telescopes became available all over Mughal India from 1615 onward; Europeans translated a report on Galileo's observations into Chinese and published it in Peking in that same year, while a new (Keplerian) telescope arrived in China in 1619; and we know that telescopes were available all over the Ottoman Empire as early as 1630 when a European merchant was executed for looking at the Royal harem with his telescope.

Yet neither the Chinese (with lots of tutoring by the Christian missionaries), nor the Mughals, nor the Ottomans found the telescope to be particularly useful as a scientific instrument. Neither did they make any improvements on the telescope or use it in any way to advance the science of astronomy as practiced in those civilizations.

This contrasting set of outcomes I attribute to the very different educational systems of Europe in comparison to China and the Muslim world. As I noted earlier, it was the unique Europe commitment to the study of the natural world that resulted in the instilling of a broad sense of intellectual curiosity that made the difference. Nothing like the broad scope of naturalistic curiosity among the Europeans was instilled in the Islamic madrassas or in the Chinese cram schools designed to teach students to memorize thousands of Chinese characters in order to past the standard Neo-Confucian state Civil Service Examinations.

Now someone might say, well this is just a one-off situation concerning astronomy. So I looked at a half dozen other fields of inquiry: optics, anatomy, microscopy, hydraulics

47 ibid., chapters 4-5
and pneumatics, and electric studies. Here again we find no advances in those fields outside of Europe in the 17th and 18th century.

If one were to make a roster of outstanding contributors to the leading edge of the scientific transformation in Europe in the 17th century and sought counterpart achievements in other parts of the world, there would be no equivalent to the advances in astronomy of Galileo, Kepler, Descartes, Huygens, or Newton; in electrical studies, no William Gilbert, Otto von Guericke, or Francis Hawksbee; in pneumatics and hydraulics no Torricelli, Blaise Pascal, Robert Hooke, or Robert Boyle; nor any counterpart in microscopy and anatomy to William Harvey, Marcello Malpighi, Regnier de Graaf, Jan Swammerdam, or Antoni Leeuwenheock. This is the short list of stellar scientific pioneers but it makes our point.

Now I do not make these assertions in order to tout the extraordinary European advances that should be well-known, but rather to correct false impressions that are conveyed by revisionist titles such as *Islamic Science and the Making of European Renaissance*;48 *The House of Wisdom: How Arabic Science Saved Ancient Knowledge and Gave us the Renaissance*;49 *The Eastern Origins of Western Civilization*;50 or *The Central Asian Origins of Science in the Medieval World*.51 Both old and young readers will no doubt be impressed by these overstated titles that bear little resemblance to the historical record.

Instead of writing improbable books about the "Eastern" sources of the West, scholars ought to be probing far more seriously the nature of the Islamic tradition, Confucianism, Buddhism, and Hinduism and asking probing questions: not just why these traditions did not give rise to modern science, but also why they did not give rise to modern constitutionalism, parliamentary democracy, due process of law, the concept of human rights and the public sphere supporting freedom of expression. Clearly Western Europe did emerge as a civilizational entity at the heart of which are a unique set of cultural and institutional structures that set it off from other civilizational entities across the world. Those with interests in comparative civilizational studies can surely find an abundance of comparative topics to study here.

Before concluding, it should be pointed out that the universities did not remain unchanged after the 17th century. After being the midwives to the scientific revolution itself, the universities in the 18th century witnessed the founding of new, more experimental, research oriented institutions, especially in Göttingen, Germany. The University in Göttingen (founded in 1737) took a more hands-on approach to medicine, for example, and went on to invent the research seminar that served as a model for other progressive universities all across Europe. This shift toward expecting both faculty and students to engage in original research in seminars was a new thing that was quickly adopted in major universities across Germany and in other parts of Europe. It resulted, especially in the 19th century, in the linking of cutting-edge research with industrial development.  

That research model, albeit with modifications, was transported to the United States after the 1870s, with the result that by end of the 1930s, American researchers, especially physicists working on quantum theory, were held on the same high level as their European peers, soon in fact to surpass them.

Conclusion: Civilizational Analysis Revisited

Over the last millennium Europe as a civilizational entity solidified around a fusion of Greek philosophy, Christian thought, and Roman law. During the twelfth to the fourteenth centuries Europe experienced an extraordinary social, political and economic revolution that fused those strands of philosophy, religion, and law into a unique civilizational entity, whose further development was guided above all else, by a unique legal system just coming into its own. The rise of the universities and their scholars were both part of that revolution and architects of it. The legal revolution created the institutional tools for parliamentary democracy, for constitutionalism, and for self-government among citizens and officials in local towns and cities. All of these developments created a far more secure situation for all sorts of economic actors, for merchants, traders, and bankers. The legal devices used by these economic actors did not exist in either Islamic or Chinese law, making it

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exceedingly difficult to see how the "East" could have supplied any aspect of the foundations for Western civilization (in law or scientific inquiry). Likewise, the legal scholars (mostly affiliated with universities) were the architects of what we rightly call due process of law. That in itself is a major accomplishment for human kind, but one that must be constantly revisited. In addition, there is now a very substantial body of legal studies showing that our Western conception of human rights was first articulated in this same period extending from the 12th to 14th centuries. The task of articulating, protecting and extending human rights is never finished, but it is a sure bet that the *Universal Declaration of Human Rights* issued by the United Nations signatories in 1948 would not have appeared without this deep historical background.

Lastly, let us not forget that there were multiple institutional locations in the West, early on, for the development of a *public sphere*, a zone of intellectual, religious, scientific and political discussion that is freely open to the public, and in which participants of all stripes are deemed capable and legitimate contributors to the public discourse. Because this zone of public discourse has not been fully and adequately contextualized, it has not been properly appreciated as another major Western contribution to modern social, political, and economic development.

No matter how we draw the shifting boundaries that constitute the core territories of Western civilization, Europe as a distinct entity has survived nationalist wars, revolutions, a reformation followed by religious wars, fascist takeovers and economic collapses, yet it has emerged as an increasingly integrated configuration, distinct from all other civilizational entities. Those who have been primarily concerned with statist rivalries and politics have overlooked this internal coherence.

There has indeed been rivalry and competition between the states of Europe, and Europe overseas: i.e., the United States, Canada, Australia and New Zealand. In this regard, the United States has served for the last century or so as the spearhead of *Western development* in every respect. And while many Americans think of the United States as the "exception" to many aspects of European culture and politics, its great success has indeed been made possible because of its thorough adoption of the Western legal, scientific, and religious heritage. That amalgam is always evolving but it remains the touchstone of all the major trends of the world, including the current phase of apparently rapid globalization, and the Web-based Information Technology revolution.

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Before one takes too seriously the alarms appearing under the heading of the "decline of the West," one should notice that in that broader category of "the West" there resides not only the European Union, but the United States, other parts of North America and the Antipodes. To take but one example of the shared achievements of that broader entity, the development of modern science: the number of Nobel Prize winners of that entity since the inception of the Prize proves to be far more than 90 percent. Put differently, "whether measured in people or events, 97 percent of the accomplishment in the scientific" sphere occurred in Europe or North America.56 A similar achievement occurred in the arts.

Civilizational analysis could profitably focus on how and why the other major civilizations of the world --Islam, China, India, and Russia, for example, and their indigenous traditions of Islam, Confucianism, Buddhism, and Hinduism -- did not give rise to modern science, but also why they did not give rise to modern constitutionalism, parliamentary democracy, due process of law, the concept of human rights and the public sphere supporting freedom of expression.

The West has indeed been uniquely productive in the creation of institutional arrangements that forwarded scientific inquiry but also preserved some of our most cherished values: democratic constitutionalism and the advance of due process of law, vital anchors for long-term economic progress. This does not mean that Western actors never fell from acceptable standards of conduct, but that over time they did establish universal values, cherished by all, that even today, are sought by many across the world.

Indeed, it remains a major agenda of civilizational analysis to trace out the early origins of "world culture," the emergence of an autonomous body of international law beyond Europe, the transformations of many local and regional legal systems so that they could encompass democratic constitutionalism, human rights and due process of law. By that latter conception one should mean "rule of law," not "rule of men." Likewise the whole history of the dissemination of the legal concept of legal autonomy in non-Western legal contexts remains a huge gap in historical studies, not to mention political science and sociology.

I read with some surprise a paper on “Civilization Defined” written by Dr. Abbey Perumpanani in the Comparative Civilizations Review issue of Spring 2013, No. 68. The author claims that he was told by members of the International Society for the Comparative Study of Civilizations that they have made numerous previous attempts at their annual meetings to generate a consensus definition of civilization—without success.

I would like to remind all those members and the author as well as the editors that a paper reviewing about 25 definitions (provided by early civilizationists and our members) has been published. My article “Towards a Composite Definition and Classification of Civilization” was also in the Comparative Civilizations Review of Spring 2009, No. 60.

Based on all those contributions, the composite definition of civilization is as follows:

Civilization is a large society living in an autonomous, fuzzy reification (invisible-visible) that is not a part of larger one and exists over an extended period of time. It specializes in labor and differentiates from other civilizations by developing its own advanced cultural system driven by communication, religion, wealth, power, and sharing the same knowledge/wisdom system within complex urban, agricultural infrastructures, and others such as industrial, information ones. It also progresses in a cycle or cycles of rising, growing, declining and falling.

A graphic model of civilization is illustrated in Figure 1.
As we see this definition is very comprehensive and thoughtful, much more isomorphic than one provided by Dr. Perumpanani, who states that “A civilization is a dynamical system that supports endogenous cultural development through economic activity aggregated across elements of its data.”

Also, the mentioned author argues for a mathematical definition of civilization. He provided two formulae for computing the rates of economic and cultural changes. It is necessary to point out that our member Stephen Blaha has published several books on the mathematical modeling of civilizations.

These works include, among others:


Also, I have published some chapters on mathematical modeling of civilization dynamics (tested upon current civilizational data) in my book entitled *Information Technology and Societal Development* (2009).

Just one of the examples of the kind of modeling used in the latter book is exemplified on the following page:
A civilization that cannot maintain its necessary level of secured resources will decline into lower stages of existence, but this decline can be arrested. A civilization can also lose its strength and pass into transition or arrest if its idle power ($P_i$) exceeds its working power ($P_w$). This is the case for the Roman (31 BC - 476 AD) and Soviet (1917-1991) civilizations. These considerations allow a definition of civilization secured power $P_s$:

$$P_s = P_w + P_{id}$$  \[1\]

A relation of the working power to secured power we will call a coefficient of power supply:

$$r = \frac{P_w}{P_s}$$  \[2\]

Hence, the working power $P_w$ is defined as follows:

$$P_w = r P_s$$  \[3\]

Inserting the expression [3] into the formula [1] we obtain a formula for secured power:

$$P_s = P_{id} / (1 - r)$$  \[4\]

If $r = 0$, the taking in of resources from the environment does not require any work. This means that the existence of a civilization depends upon the size of its secured power which only needs to cover idle power $P_s = P_{id}$. This is the case for the Islamic Civilization and its abundant oil resources at the beginning of the 21st century.
The bigger \( r \) is, the more work is needed to take in energy from the environment. This means that a civilization must take in more energy and its secured power \( (P_s) \) must be bigger.

If \( r \) approximates to 1, in other words, when the taking in of energy by a civilization requires vast work, then secured power approximates to infinity. This means that a civilization does not have idle power \( (P_{id}) \) regardless of how much secured power it is taking in from the environment. This is the case in arrested civilizations, such as the Mayan, Andean, Yucatec-Mexican, Eskimo, Indian, and Polynesian specimens. To a certain degree it also represents some parts of the present African civilization.

There is some surplus of power, which remains after total power covers secured power. The remaining power we will call coordination power \( P_k \):

\[
P_k = P_t - P_s \quad [5]
\]

Then, the total power \( P_t \) of a civilization can be expressed as follows:

\[
P_t = P_s + P_k \quad [6]
\]

If we substitute the expression \([1]\) for \( P_s \) then:

\[
P_t = P_{id} + P_w + P_k \quad [7]
\]

The disposable power \( P_d \) of a civilization is defined as follows:

\[
P_d = P_w + P_k \quad [8]
\]

All components of the total power are shown on Figure 1 - 12.

To survive, a civilization must produce total power no lower than its secured power \( (P_s) \), which depends upon existing civilization power \( (P_c) \). However, a civilization can reduce its secured power \( (P_s) \) by triggering changes in the environment that cause civilization power to increase. This means that a civilization may move into a territory with better resources or it may invade another civilization with such resources. This strategy explains clashes among civilizations. To engage in a clash, a civilization must spend some power, which we called coordination power \( (P_k) \).

The more coordination power that is at the disposal of a civilization, the more changes it can invoke in the environment. Mastery of information distribution and utilization are at the heart of coordination power, and it produces a positive feedback cycle: more coordination power produces more civilization power; this in turn requires less working power and less secured power. As a result, coordination power becomes bigger. This effect means that a civilization reaches its maximal coordination power and civilization power at the same time it has its minimal secured power.

This is a highly desirable situation where a civilization uses its coordination power to secure the best environmental conditions and increases its own existence timeline. In the long run, mastery of information increases awareness and knowledge, which results in wiser decision-making about all civilization system components. Most civilizations
last for many years, enduring decisions of varying quality, but information coordination
provides capacities to eventually turn data into wisdom for the benefit of a given
civilization.

As one of the results of mathematical modeling, the Civilization Index has been
developed and depicted in the following table, which has a very practical application.

Table 3-9  The Civilization Index  CI

<table>
<thead>
<tr>
<th>Civilization</th>
<th>Existence System</th>
<th>Communication System</th>
<th>Knowledge System</th>
<th>Guiding System</th>
<th>Power System</th>
<th>Logistic System</th>
<th>Infrastructure</th>
<th>Total</th>
<th>CI as % of Potential (max 77)</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western-West</td>
<td>29</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>7</td>
<td>70</td>
<td>0.91</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Western-Jewish</td>
<td>27</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>67</td>
<td>0.87</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Japanese</td>
<td>21</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>7</td>
<td>58</td>
<td>0.75</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Western-Central</td>
<td>20</td>
<td>5</td>
<td>4</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>47</td>
<td>0.61</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Eastern</td>
<td>23</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>47</td>
<td>0.61</td>
<td>5</td>
</tr>
<tr>
<td>Western-Latin</td>
<td>15</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>40</td>
<td>0.52</td>
<td>6</td>
</tr>
<tr>
<td>Chinese</td>
<td>17</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td>3</td>
<td>35</td>
<td>0.45</td>
<td>7</td>
</tr>
<tr>
<td>Islamic</td>
<td>13</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>33</td>
<td>0.43</td>
<td>8</td>
</tr>
<tr>
<td>Hindu</td>
<td>13</td>
<td>2</td>
<td>3</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>32</td>
<td>0.41</td>
<td>9</td>
</tr>
<tr>
<td>Buddhist</td>
<td>9</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>25</td>
<td>0.32</td>
<td>10</td>
</tr>
<tr>
<td>African</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>14</td>
<td>0.18</td>
<td>11</td>
</tr>
</tbody>
</table>

A comparison of civilizations at the end of the 20th century permits us to draw the
following conclusions:

1. The Western-West civilization is at the stage of "saturation," indicating that it is
either ready to expand into other civilizations or to enter into social unrest. This
civilization has an almost perfect Index: CI = 91%.

2. The Western-Jewish (CI = 87%) and Japanese civilizations (CI = 75%) are very
well developed and will approach the "saturation" point in the near future.
3. The African civilization is either at the beginning of the developmental process or at the stage of disastrous development. Taking into account its very short and tumultuous history, both statements may be correct (CI = 18%).

4. The remaining civilizations have a good prospect for further development or redevelopment. This is presently taking place in the case of the Western-Central civilization after the collapse of the Soviet civilization. Civilization Indexes of these civilizations vary from CI = 32% to 61%.

All these mentioned books take into account many more systemic components in characterizing a civilization than the two ones offered by Abbey Perumpanani. Will Dr. Perumpanani continue his quest for a better definition of civilization using mathematical modeling? Modern science develops by the additive accumulation of contributions.

Andrew Targowski
By a happy coincidence, I have been asked to comment on Dr. Abbey Perumpanani’s stimulating article, “Civilization Defined.” The coincidence is that the editors chose to print my “End Note” in the same issue with Perumpanani’s lead article of the Comparative Civilizations Review (No. 68, Spring 2013). My little essay, “Seeing Nagasaki: A Tale,” enabled one to consider what may be learned from Nagasaki about becoming “civilized” in an evolving or devolving, compassionate or brutal world.

There are many facts about the city to learn, including that the atomic bomb dropped on Nagasaki was meant to strike a munitions area, an important shipbuilding and servicing complex. Instead, winds carried the atomic bomb to a Catholic area, to the north. As a result, the bomb apparently fell on a Christian hospital and medical university. . . .

As the paragraph implies, the shadows cast by Nagasaki then have darkened and lengthened almost exponentially for the world we live in now.

Rediscovering Civilization in Nagasaki and Beyond

In the midst of that project I realized I could not well proceed without careful attention to some of Dr. Perumpanani’s main points. Two stand out -- how he began and how he ended his piece.

The “inclusive scientific definition” heading his Introduction reads: A civilization is a dynamical system that supports endogenous cultural development through economic activity aggregated across elements of its data.

It becomes quickly apparent that this physician and mathematician is an exponent of what in his conclusion (p. 19) he calls Mathematical History. This term is carefully explained in the body of the essay but at its outset (p. 9) he states it “can bring about a convergence in the widely differing historical views of civilization.”

In his conclusion, he stops short of insisting that those of us who are not proficient in math need to master the intricacies of calculus and its mysterious grammar. Several times, in fact, he illuminates his own meaning by translating the calculus into less intimidating language. Then he adds, “A more efficient approach, I believe, is to open the door from the other side—to import from other disciplines academics with an interest in history, and to foster interactions through them. Such importation,” he
continues, “has happened before, and to great success: von Ranke’s background in philology, for example, significantly energized his approach to history.” (p. 19)

In his very last sentence the doctor characterizes his interest as one of “Mathematical History—a common platform to objectively discuss our shared past.” Since my perspective is that of a Christian Humanist, the contrast between us is interesting. It may stimulate both fresh dialogue and even insight.

My approach now will be not so much a pro or con production as an inquiry into the body of what the good doctor proposes within his beginning-ending framework.

First, do I correctly understand what is being put forth?
Second, what are my points?

Here’s a partial list plus some samples of how I develop my thoughts and defend them. I do welcome Dr. Perumpanani’s clarification of his position and his supporting arguments, as well as his critiquing of mine.

1. The city of Nagasaki’s violent yet peace-producing history is parallel in important ways to the efforts of many able scholars to answer the still unresolved question: “What is civilization?” (This has become my thesis statement based in part on some translation I have done from the Japanese. That labor of love in turn has inspired me to engage in further comparative historical research.)

2. I share an important perspective with Dr. Perumpanani. I fully concur with his hope to bring about a “convergence in the widely differing historical views on civilization.”

3. However, I suspect that my own approach has more in common with thinkers such as Rob Bell, Huston Smith, Ray Kurzweil, and Eiji Hattori than with Professor Perumpanani.

4. As I see it, the issue is much more tangled and perplexing than the professor’s mathematical and scientific approach. Gödel’s Theorem seems to me to overturn some of his hopes at the outset of his project.

By means of complicated arguments using the tools of math and symbolic logic, Gödel concluded that since logic requires us to deduce every statement from some other statement, there has to be what I would call a Mother Statement. If it is derived from within a system (for example, the system of scientific methodology itself), where is the “Grandmother” of that system? Oh, of course, “outside the box”! Then we are into an infinite regress, aren’t we?
From what ultimate axioms do these disciplines derive? To the answer, “From some kind of intuition, revelation, or discovery,” a next question naturally arises. That is, “From what will any new discovery or set of axioms arise?” To appeal only to former discoveries or assumptions is not only circular, it loses the dynamic quality Perumpanani emphasizes. It has more the ring of a static deductive system. Dynamism is also weakened by the title Civilization Defined; I would have preferred Defining Civilization.¹

5. To give him the full benefit of the doubt, let us assume I have grossly misunderstood what the lead article is saying. Dr. Perumpanani may only wish for us to face the fact that a “perfect” definition ever eludes even the best minds and that, in a calculus-like way, we may move forward without ever touching any graphic perpendicular. In that case we simply have to settle for a real-life graph in which we arrive by infinitesimal jumps closer and closer to what we need until we reach what suits us “for all practical purposes”.

6. Let us then use this “dynamic” interpretation to peer through an intellectual microscope at Dr. Perumpanani’s seeming dismissal of comparative historians indebted to Toynbee’s work. Did not Toynbee suffer from a far too simple assurance that civilizations must be “the creative response of people to physical challenges imposed upon them, in other words, a pattern imposed by geography”? (p. 18). If Toynbee—or any other writer on civilization—is a geographical determinist, I am on Dr. Perumpanani’s side of the debate. Any definition that has geography as determinant (deterministic?) may be claiming either too little or too much.

We do not need calculus or even algebra to understand this. Two technical terms in definitional logic, denotative and connotative, should help us. To use a trite example, if I say, “All men are mortal,” and you ask, “What do you mean by men?” I might answer with some synonym such as “people” or “human beings” or I might point to Sue or Joe as examples of what I mean. I would then have given a denotative meaning of meaning. You might understand that I had displayed two members of some kind of set (or collection) of individuals, but in exasperation, you might respond, “That is not what I meant by mean! I recognize Joe but your Sue may be some kind of realistic robot. How do you characterize the entire set of what you call “human”?

Now matters become really messy. How close does a robot or “artificially intelligent” device need to approach the way we are and the way we behave to be

¹ For scientific progress alone all theories and procedures may be regarded, not as true or false, but simply as useful until improved or replaced by subsequent developments. This pragmatic interpretation is fine, but I assumed from the title and some of the text of “Civilization Defined” that Dr. Perumpanani was seeking truth not simply usefulness.
included with us under the designation “human” and/or “intelligent”? I do not believe that science or social science will ever do full justice to either “human beings” or “civilized human beings.” Consequently I do not believe either Dr. Perumpanani or I will be able to say exactly how right or wrong, adequate or lacking, a prolific writer such as Toynbee is in his approach to the meaning of “being civilized.” Characterizations, brief or long, always veer toward saying too little or too much.

As a person trained in the humanities and social sciences I will probably always remain unsure as to whether Dr. Perumpanani’s conclusions do justice to Toynbee’s total vision—a vision that involved the arts, humanities, and religion in an inclusively global perspective. Nevertheless I sincerely believe that there is something of both descriptive and normative value in the second part of the definition that reads “... development through economic activity aggregated across elements of its data. I would like to invite Dr. Perumpanani to explain what these words mean. He has succeeded in giving such explanations in other parts of his essay.

7. I tend to see most definitions as too simplistic in the sense of being out of touch with reality as a complex dynamic process, which I view as an increasingly paradoxical system retreating or advancing into more and more darkness, mystery, and perhaps miracle.

Nagasaki itself is a paradox of hatred and love, toleration and martyrdom, war and peace. Its history reveals an exercise of human reason, scientific and medical commitments, and a wide range of deep empathy with others.

The Rotarian for November 2012 carried an important interview with Harvard’s Professor Steven Pinker on his latest book The Better Angels of Our Nature: Why Violence Has Declined. One trait that the evolution of cities has bequeathed to us is the invention of treaties; city states give humanity longer and longer pauses between wars. In the objective sense this has given students of civilization one criterion for civilization’s definition. But “being civilized” can carry the humane and other connotations that enter the moral and value realms. They transcend the purely descriptive, quantifiable forms of definition which Dr. Perumpanani seems at times to demand.

Even the history of Nagasaki contains surprises: “saintliness” spreading because of the crucifixion of saints; tolerance and cooperation arising after very competitive, violent struggles among religions—to name only two of the more obvious examples. The Perumpanani tools include: the written and spoken language of English; mathematics ranging from simple arithmetic through algebra all the way to calculus; and technical languages suited to such fields as medicine, economics, and history.
8. There is a remarkable and somewhat disturbing parallel between understanding “civilization” academically and understanding each other’s native languages.

Somewhere in the earlier part of my academic career I became fascinated by Japanese language, history, and culture. For a number of years I have found pleasure and frustration in moving back and forth between English and Japanese. It has amazed me how difficult it is to enter another culture or civilization from the standpoint of one’s own background. This difficulty, I believe, must be squarely addressed in “defining civilization”.

My contention is that change is so fast and unpredictable that without time-lapses for attention to local variations in custom and culture, understanding each other will always be a bit tardy even if just for practical purposes such as in business. Native Japanese speakers use their word for “Yes” in a quite different way from American business negotiators who have often, to their grief, understood the word to be a simple yes. They suppose the Japanese hai is an equivalent to our Yes. However, depending on context, the Japanese word can mean yes, no, I’m paying attention, or simply maybe. In a business situation “yes” or “hai” may sound like “Let’s sign the agreement and go out for a game of golf”! On Japanese ground—and sometimes even in New York City—a smiling Japanese negotiator may only mean, “We understand what you are saying” even when the “understanding” is a mirage. In any case the word for “yes” almost never means, “Let’s draw up the contract before we go to lunch.”

Even more confusing is the lack of verbs in many Japanese sentences as well as the paucity and ambiguity of pronouns such as: I, you, they, or it. The uninitiated may scratch his or her head and wonder, “Who indeed said or did that?” Or, “What does that Japanese speaker think is happening?” I am, of course, referring to an utterance in which the speaker uses no verb.

Fumiki-san, the author of “Seeing Nagasaki,” illustrates some of what I am saying in an even more dramatic but literary and aesthetic fashion: A pine-covered hill was visible in the foreground of the painting, and in the far distance, the blue-green ocean seemed to frame the islands that dotted the scene. I remembered a poetic quotation from an eight-volume collection of joyful, auspicious poetry. Here’s the quotation:

Toward the interior of this brightness there is a simplicity,  
an artlessness as the koto is played.  
The sound must emulate Autumn’s beauty.  
In such stillness the koto seems to tingle.

I, Fumiki Narita, enjoyed this stillness while it lasted.
Further Reflections On Defects In Any Purely Mathematical Theory Concerning Life or Civilizations

Note that Fumiki’s interest in stillness is explicitly mentioned only in the last line of the poem. Fumiki is speaking of his feeling as he enjoys a pictorial representation of scenery. Since there are fewer Japanese kanji (Chinese characters) than usual in this poem and more Japanese phonetic symbols, we may infer that the poet was a woman. Only men were supposed to be educated enough to use Chinese characters. Some ladies knew quite a few of these kanji but were demure or canny enough not to go public about their achievement.

We should add that the wording of the poems is so difficult and archaic as to suggest a quite early date in the evolution of written Japanese. Some historians have even hypothesized that the second bomb would not have been dropped on Nagasaki were it not for a linguistic misunderstanding between the leaders of Japan and the U.S.!

In addition, feelings do not easily or adequately yield themselves to quantifiable mathematical expression.

More important still is the fact that science itself seems more and more to be yielding, facing up to self-contradictory findings, as fully problematic as any in religion.

A number of years ago I wrote out a sixteen-page doubled-spaced lecture on the question, “How Nearly Identical Are Religion and Science?” My tentative conclusion was probably fairly modest when I first presented it in Japan, Hong Kong, and Singapore. Even then I agreed with Allen Watt’s Zen-like observation, “When someone draws attention to the implicit unity of polar opposites we feel something of a shock.” (Alan Watts, The Two Hands of God (New York: Collier Books, 1969, p. 46)

Allow me to add the word “science” to the word “technology” in the following quotation from Fritz-Joachim von Rintelen’s Contemporary German Philosophy (Bonn: G. Bouvier u. C. Verlag, 1970, p. 171) and you have a sentence remarkably prophetic of my position in 2013: “The preeminent philosophic task of the present is to unite a high estimation for the actual, inner human values with a mastery of modern science-technology and its possibilities.”

In today’s world I believe this would lead not only to movement toward Dr. Perumpanani’s goal of a convergence of understandings about civilization but also to a whole basketful of “impossible possibilities” in the advance of scientific knowledge.

To face a true ethical dilemma in von Rintelen’s sphere of human values is not like putting potatoes on a scale to determine which is heavier. Nagasaki’s Dr. Takashi Nagai illustrates dramatically the continuing relevance of the city’s history, as intimated in
Point 1 above. His *The Bells of Nagasaki* explains this scientist’s awareness that his research into the medical uses of radiation for treatment purposes could also be turned astray for hugely destructive purposes. Surely civilization’s ethical cognate “civilized” is in an entirely different category from measuring the weight of potatoes.

To *be* civilized is to *estimate* the amount of good one’s actions will bring as opposed to harm. At first, Dr. Nagai, along with the rest of us, had no idea how close the world’s top scientists were to being able to develop an A-bomb. His ignorance of what lay ahead made his decision to continue a merely academic inquiry into the beneficial, even benevolent uses, of radiation relatively easy. Should he have dropped this mere academic stuff for the urgently needed preparation in first-aid and the saving of life? That would be an unreasonable ethical expectation in the light of his total ignorance of the pending tragedy.

Ignorance allows all of us to disregard ethical quandaries about the *honest* weighing of potatoes (before the existence of merchants or quantitatively accurate scales); by the same token, before the evil consequences of nuclear developments were existentially experienced, Nagai could in no way be held ethically accountable for horrors not yet known or even generally imagined.

When Dr. Nagai’s healing services were hopelessly disturbed -- in fact, virtually wiped out -- what he and other survivors faced was almost too high a mountain to climb, “a possible impossibility” if you will. I put the word “possible” first because, with his leadership, the almost “walking-dead” among his medical students and first-aid staff rallied to form a working group, then saved lives, bound up terrible wounds, reduced pain and, when possible, helped the dying die with some awareness of loving care. They even respectfully handled the remains of the dead though it was all but largely impossible due to scattering and loss.

When we approach the self-contradictory discoveries of modern science, they may seem trivial compared with nuclear threats to us and our environment.

Rob Bell takes a mockingly frivolous approach to uninformed “knowledge” about science and religion in his critically acclaimed *What We Talk About When We Talk About God* (Harper One, 2013). His conclusions ultimately converge with God-talk and ethical sensitivity.

Before that convergence, all readers can enjoy Bell’s “quirky talking about a quirky society and culture.” One thing he undermines, at least for the general public, is “scientism”, a dogmatic heritage from the Enlightenment. To be a thoroughly modern Millie –at least a rational person—you can entertain no ultimate dilemmas or paradoxes in true science or matters of “fact”.

https://scholarsarchive.byu.edu/ccr/vol69/iss69/17

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Let’s look at a few emerging facts he has fun with.

The chair you are sitting in is made of atoms, and “atoms, it turns out, are 99.9 percent empty space.” (p. 43).

We earthlings think we have some grasp of gravity and the size of things affected by it, but the universe contains some bodies called neutron stars. These stars “have such strong gravity at work they collapse in on themselves” and “can weigh more than two hundred billion tons—more than all of the continents on earth put together. . . . and fit in a teaspoon.” (p. 27)

“If an atom were blown up to the size of a stadium, the nucleus would be the size of a grain of rice, but it would weigh more than the stadium.” (p. 33)

Can “scientific” rationality survive one more conundrum? Niels Bohr and other quantum physicists “realized that particles are constantly in motion, exploring all of the possible paths from point A to point B at the same time.” (p. 36)

They literally are not anywhere until you ask where they are now or next, so. . . . “They’re simultaneously everywhere and nowhere.” (p. 36)

While Bell is the first to admit that he not a scientist and hence “only” secondary source, his notes and bibliographies at the end coincide what I have independently discovered in the literature. In order to prepare us for something of a shock when we at last come face to face with most recent developments in physics and religion, Rev. Bell uses two metaphors, your antique car and hum.

He introduces us to the comic absurdity of much of our antiquated 21st Century talk about science, God and ethics. At least some of our readers still enjoy tinkering with and even driving an antique Oldsmobile to car parades or public shows. Yet the same individuals wouldn’t dream of substituting their precious toy for their 2011 Ford Focus just in order that they might daily experience the thrill of driving it in TODAY’S heaviest Los Angeles traffic.

Bell continues his satire on God-like Oldsmobiles with this story: “My friend Cathi recently told me about an event she attended where an influential Christian leader talked seriously about how he didn’t think women should allowed to teach and lead in the church. Cathi, who has two master’s degrees, sat there stunned.” (p. 6) Increasingly, as we’ve illustrated above, scientific discoveries are being made that have profound implications for this century and even for our future lives on this planet and in the cosmos.
What is that *hum* I hear? Is it the antique Olds in my shop-garage? Or is it “what Jane Fonda spoke of, being drawn to faith, because I *could feel* reverence *humming in me*?” Bell speaks of his love of that phrase because “it speaks to the experiences we all had—moments when we’ve found ourselves deeply aware of the *something more* of life, the *something else*, the sense that all of this might just mean something, that it might not be an accident, that it has profound resonance and that it matters in ways that are very real and very hard to explain.” (p. 10). A humming resonance!

I predict that infinite—at least mysterious—non-circular reasoning will become more and more of a challenge in dealing logically or scientifically with either the past or the present. What about the future? (Some of the most recent controversies that have raged concern the “God-particle”).

Consider what the *Economist* editors have to say on p. 85 of their May 25, 2013, issue.

*For time to be “real”, in Mr. Smolin’s sense, it cannot be relative. But nor can it be absolute in the Newtonian mould, where the future already exists, by dint of inexorable logic. This leads Mr. Smolen to some audacious ideas. He challenges not only Einstein’s relativity, but also the very notion of natural laws as immutable truths. He also questions the usefulness of mathematics in modeling the universe in its entirety. Models shed light on processes which recur; the universe, by definition, happens just once.*

It would appear, then, that neither logic nor science can lead us beyond *controversy*. Progress in either discipline seems to lead us ever deeper into paradox and fruitful but never fully resolved controversy. In the same *Economist* article on the future of physics, “Beyond Numbers,” the future of science is addressed by this brief listing of sources. Just the titles seem at some odds with each other, don’t they?

*The Universe Within: From Quantum to Cosmos.*
By Neil Turok. *House of Anansi Press; Faber and Faber*

*Farewell to Reality: How Modern Physics Has Betrayed the Search for Scientific Truth.*
By Jim Baggott. *Pegasus; Constable*

*Time Reborn: From the Crisis of Physics to the Future of the Universe.*
By Lee Smolin. Houghton Mifflin Harcourt Lane

*Beyond Numbers*
I wish to propose to Dr. Perumpanani the following exchange. If he’ll try to explain to me in non-mathematical language what he means by the phrase (from his definition of civilization), “economic activity aggregated across elements of its data,” I’ll try to communicate to him why there may be a reverence that vibrates in all of us, though it cannot be weighed. Perhaps it resembles in some ways that deep trembling that we feel when those mysterious “plates” slide against each other. . . .
Book Reviews


Reviewed by Laina Farhat-Holzman

It is fascinating that a book so specifically devoted to looking back to how the anti-modernist fever in the first half of the 20th century led to something as nightmarish as World War II, the Holocaust, and the deaths of millions of people around the world. But what made this book even more interesting to me was its relevance to our own time, and our own fever of anti-modernism that is causing war, deaths, and enormous human misery.

While we are all aware of the negative consequences of such anti-modernism, Rosner notes that these movements are a response to a natural and understandable human emotion: the longing for certainty in the face of what many see as loss of everything familiar and sacred. Such longing takes form in nostalgia, romanticizing the past, and some kind of wish to reconnect with the natural world.

David Rosner is a philosopher, a specialist in German philosophy, a discipline that has given much serious scholarship to the world. But it has also given something else: philosophy that gave heft to the formless fear of modernity that gave rise to Nazism.

In his preface, Rosner asks:

When longstanding ways of life are extinguished and new paradigms have not yet been offered to replace them, how is the world now experienced and constituted by the individual subject? What happens when the only explanatory framework a culture has ever known is slowly eroded? Interwar Germany’s cultural collapse involved a number of serious concrete problems specific to Germany at this time, such as a devastating financial crisis and a sense of national humiliation in the aftermath of World War I associated with the treaty of Versailles. Yet often accompanying such external factors in a cultural collapse are the signs of the loss of an entire value system. Thus, the crisis of Weimar signified the deeper loss of a spiritual center, a sense of wide-spread pessimism and confusion, felt not only in Germany but throughout the West after the *fin de siècle*.

Rosner talks about the *aporia* of modernity, a term that he defines as alienation, a sense of loss, of homelessness. For many, modernity brought with it great gains: the discoveries of the scientific revolution, industrialization, the lessening of the hold of
traditional religion as a force for explaining the world, the emancipation of women, and the opening of political participation to those who were never included before. But these optimistic values were dashed by World War I, when civilized Europeans descended into mindless horror. Empires collapsed, a whole generation of young men died or were horrifically maimed, and everything familiar had changed.

From 1500 to 1950, the traditional world changed with ever-increasing speed, at a rate too fast for ordinary people to understand and accept. There have been many times in human history that such changes took place (the collapse of Rome, barbarian invasions, the sudden rise of Islam, the discovery of the New World, the religious wars); however, the changes in the 19th and early 20th century were the most rapid of all, and the outcome of World War I threw millions of people into a world with no rational explanation for why things happen.

Although Rosner focuses on Germany, this book can be read as an explanation for the current *aporia* of so many people: conservative and sometimes neo-fascist movements in Europe and the US, as well as the most obvious of all, the crisis within Islam, the struggle between the modernizers and those who violently reject modernity.

The German philosopher Heidegger, who struggled with the loss of all that was familiar in traditional rural Germany, is the key philosopher whose trajectory from despair to his shameful romance with the Nazis makes him the central figure in this book. Rosner not only reviews the work of Spengler, Schmitt, Jünger, and others who were influenced by earlier Romantic movements, but in his scholarship he also cites numerous important modern philosophers and analysts of the interwar period.

Rosner looks at secularism and its discontents: the sense of “disenchantment” that Max Weber noted. For the disenchanted, the loss of the magic implicit in religion is a great loss. With the loss of this transcending value come high levels of social decadence, Rosner notes, such as “the sexual revolution and widespread drug abuse, both of which left many shattered lives in their wake.”

In his final chapter, “Fear and Hope in Post Modernity,” Rosner explores the angst of those who feel that their world has lost all values, all things worth having. But he also looks at the solutions sought by some groups, and provides pros and cons for these solutions. He explores Fundamentalism, the attempt to return to the roots of one’s religion for answers to all problems. This process provides an absolute and unchanging moral code that gives certainty to some; it provides a strong sense of community (something lacking in reason and secularism); it affords a feeling of moral superiority, a feeling of being among the “elect” and it provides a firm grounding in tradition and longstanding religious practices that have stood the test of time.
But on the negative side, he says that the absolutistic reactions can be even more nihilistic than the original problem itself. He cites the violent excesses of Muslim terrorists, some Israeli Jewish settlers, and Christian murders of abortion doctors. He also notes that religious fundamentalism is a closed system, in which one must accept a number of simplistic assumptions.

He then examines Stoicism as a possible solution: just living and taking in stride that there is no meaning to be found, but that one should live as though there were. On the con side, Stoicism has been seen as “tired.” It is never going to have great appeal.

His best solution seems to be seeing the sacred within the secular. He notes that “…the Eco-philosophy movement has taken on an urgency rarely felt in the usually rarefied circles of academic philosophy.” But even here, this movement has within it “archaism,” an attempted return to an almost mythic ethos that is impossible to reclaim at this late state in history.

Rosner concludes, as have many philosophers (going back to Socrates), with the only possible solution: looking within. The sacred is within us, they have said. Finding the authentic core of oneself is the best protection against despair and of either railing against or getting caught up in mindless modernity.

Where I would argue with Rosner is that a case can be made that our modern world is not just soulless, materialistic, and selfish. There is pure magic in the unfolding work of scientists exploring the mysteries of the world and the universe. One can still feel the magic of a full moon that is not spoiled by knowledge of the moon’s geography. One can still marvel at the beautiful complexity and interconnection of our global systems of oceanic streams, winds, and volcanism that global satellites are unfolding for us. And one can have a magical experience looking at a newborn, in all of its perfection. Knowledge just opens up more areas of wonder and the magic is by no means gone.

I would have liked more in the book about the phenomenon of hatred for cities and their cosmopolitanism. The back-to-the-countryside philosophers, such as Heidegger and earlier in German Romanticists, found cities alienating, in direct contrast with those of us, from civilization’s beginnings, who find cities lively, exciting, providing us with a fascinating mix of peoples. Great cities have always attracted great art, great ideas, and tolerance of the new.

There is a connection between city hatred and focus on prominent Jews, who were examples of cosmopolitanism and high culture. The Nazis honed in on this hatred and they detested Berlin, their own cosmopolitan capital, for this very reason. Urban-Rural antipathies are still a major source of violence in today’s Third World alienation. Despite this, Rosner does go a long way toward explaining the fear and hatred and sense of loss fueling the crisis of alienation.
Conservatism and Rationality: Reflections on David Rosner’s *Conservatism and Crisis, The Anti-Modernist Perspective in Twentieth-Century German Philosophy.*

Reviewed by J. Randall Groves

David Rosner has written a cogent account of the conservative response to modernity in the Weimar Period. In this paper I examine the conservative arguments discussed in the book and Rosner’s ultimate embrace of the anti-modernist critique. I will defend modernism and its postmodern progeny and argue that conservatives’ responses to modernity not only fail; they are dangerous. I will offer two responses to the problem of modernity, a Nietzschean response and an eliminativist response.

There is no way to avoid living in an anti-foundationalist world, so any attempt to conceptualize the world or to live according to some imagined foundation is bound to take us into irrationality as well as lead us into inauthenticity and a loss of autonomy. It also prevents us from embracing new truths that science and, yes, philosophy, discover. Nietzsche tells us to embrace life without foundations. Those that do not embrace their freedom or the new truths are Nietzsche’s “last men.” The antimodernist is therefore simply an apologist for the last men.

Eliminativism, a view in the philosophy of mind and of science, tells us that we must embrace new ways of thinking about human behavior. As science undermines what the eliminativists call “folk psychology” we will have to reconceive how we think about all mental life, just as we have embraced scientific developments concerning non-mental phenomena. The eliminativist does not lament the end of the soul, God, the afterlife, foundationalism or enchantment; these are all illusions anyway. And we even know why we came to have just those particular illusions.

The eliminativist embraces a probabilistic universe in which wisdom consists in adherence to the best argument, which is whatever the most recent science says is true, even if this means an end to long-held traditions. The eliminativist is happy, even thrilled with this continuous updating because the world is always interesting. The world of science is one that should inspire as much awe and respect as the world presented by any religion or tradition. The eliminativist also knows that the failure to understand or to accept what science tells us not only decreases our knowledge, it decreases our autonomy. Without understanding the determinants of behavior, we are unlikely to be able to take control of our lives. The Nietzschean and the eliminativist both reject the anti-modernist critique. We not only can live without foundations, we should.

David Rosner’s *Conservatism and Crisis* is a concise treatment of the problem of modernism, particularly as it is manifested in the German philosophy of the Weimar
Period. The treatment, however, is a bit too concise. Rosner could have done much more in the way of setting up the philosophical background. Kant’s conceptualization of the modern as the trifurcation of reason and of its inherent limits began a dialogue that worked its way through Hegel, Nietzsche and Heidegger, and this discussion, which Rosner references, particularly the work of Robert Pippin, should have been filled out. The logic of the conversation from Descartes to Nietzsche seemed to lead from the assertion of certain foundations, a questioning of all foundations and, inevitably, to a sense that there is a disconcerting groundlessness to reason, to all things ultimate. It would have helped the argument if these moves would have been rehearsed in the book. This philosophical conversation is often linked to historical events that came to a head with the Weimar Period and its aftermath in horror, so it is important to get it on the table.

On the other hand, the Weimar period was afflicted by much more than a philosophical problem. It is to Rosner’s credit that he notes that one might well give a rather more convincing economic argument for the events of that time, but Rosner, nevertheless, still holds to the tradition that there is a connection between the philosophical and political history of the time.

After Kant’s transcendentalism made the grounding of reason a serious problematic, Hegel proposed a dialectical justification of reason that was only complete with the development of absolute spirit. The massive metaphysical commitments of Hegel led to a vigorous response from Nietzsche, who asked that we just admit to the groundlessness of reason, that there are no facts, only interpretations. Nietzsche, more than any other philosopher, made nihilism a philosophical problem. With Nietzsche, there is no truth or meaning to be discovered, it must always be created. Nietzsche was not so naïve to believe that the majority of the people could live such a groundless existence. Most people do not have it in them to be “heroes” of valuation, creating value out of nothing. Most people require an established tradition to help them make choices. After the death of God, anything is possible, and for many, that is too much possibility. There is a flight from such freedom.

Yet there are those who embrace the Nietzschean “overman” as a model for living, who do try to live their lives according to values that they choose autonomously. Such people are highly experimental and artistic. Indeed, art becomes the foundation of all things as all reasons become aesthetic preferences. The decadence of the modern is to be found in this experimentation. The experimentation of the modern is rather unnerving to those who still cling to the old ways. Weimar decadence produced a violent conservative reaction, ultimately issuing in the assertion of assertiveness characteristic of the Nazis.

It is in this context that Heidegger’s philosophy and behavior come to the fore. Heidegger was well aware of the Nietzschean challenge. As Rosner points out, it was
Heidegger who interpreted modernity as a narrative of loss, and who seemingly glossed over the possibility of living a Nietzschean life without falling into the trap of a return to origins, foundations or paradise. Heidegger’s philosophy of being or Dasein acknowledges the thrownness of human being. It also makes us aware that human existence is highly temporal, and haunted by finitude, or being toward death. Authenticity is difficult under such circumstances, particularly because modern life is so determined by technology. And it is Heidegger who shows us why conservatism is so problematic, for it seems too easy to fall into a totalitarianism from an overly empowered conservatism. Heidegger’s quest for authenticity, for the truth of being, led him into a false authenticity, the bald assertiveness of will.

Heidegger’s three mistakes were (1) to be completely tone-deaf to the modernist critique of premodernism and (2) to ignore the Nietzschean possibility, or at least the early Nietzsche’s possibility--that one could create one’s own values. Heidegger does indicate that art reveals being in a primordial way, but he seems unable to get out from under his sense of loss and embrace an aesthetic existence as a return to authentic existence.

But the third mistake, and the most serious, is that the whole edifice of Dasein as a central concept rests on a mistake. Heidegger believes that the first person perspective reveals something more primordial than the third person perspective. The point of view of intentional beings is to Heidegger more basic than the third person point of view of subjects toward objects in the world (the world as presence). While phenomenal experience is one source among many for understanding the human mind, there is little reason to suppose that introspection will avail us more fruits than a system with epistemological safeguards. This is the eliminativist view. In fact, the eliminativist suspects that there is nothing special about introspection, seeing it as a source of information about the mind that has all the faults that afflict ordinary perception without the safeguards. Heideggerians will object that Dasein is distinct from introspection, but attention without an object is almost definitionally introspection. On the other hand, several of Heidegger’s points are worth considering, particularly his notion of temporality. But even that can only be provisional. We need to test any claims about the human experience of time with empirical research.

Rosner follows tradition in arguing that Heidegger’s philosophy is uniquely applicable to the problems of modernity. But this author finds such a tradition problematic. One wonders what role Dasein could possibly have as a sort of thing or intention that could be undermined by an historical phenomenon even if the historical phenomenon was profound. Heidegger’s status as a critic of modernity is problematic since the problem begins with Plato and because Heidegger does not think the development of technological existence could have been avoided.
Heidegger’s first mistake is his failure to understand the benefits of modernism as an advance over pre-modernism. Robert Pippin writes, “Nowhere does Heidegger seem sympathetic to the modern experience of an intense and well-motivated disappointment with the pre-modern tradition, the experience of long-entrenched and spectacular error, or with the consequences of ‘methodologically unsecured’ belief.” For Pippin, science “marks not a radicalization of metaphysical self-assertion, a final forgetting of being, but a way of avoiding a disastrous, centuries-long self-forgetting” (1991, 141). It is incumbent upon critics of modernism to show how their answers to modernism do not fail to address the motivations for modernism in the first place. One could argue, for example, that the Greeks’ development of a metaphysics of presence was essential to the eventual development of modern science and thought. Modernism may have its problems, but it was an advance on pre-modern traditionalism.

The reason for Heidegger’s second mistake is that he did not fully understand Nietzsche. Although the Darwinism of Nietzsche’s philosophy is sometimes overplayed, one cannot neglect Nietzsche’s understanding of Darwin in interpreting Nietzsche’s philosophy. Nietzsche saw in a flash, as the brilliant often do, the deeper meaning and the long term implications of a new way of seeing the world. Nietzsche’s Darwinism would always keep his overman humble. Consider the passage in the On Truth and Lie in an Extra-Moral Sense (1883), “In some remote corner of the universe, poured out and glittering in innumerable solar systems, there once was a star on which clever animals invented knowledge. That was the highest and most mendacious minute of ‘world history’—yet only a minute.

After nature had drawn a few breaths the star grew cold, and the clever animals had to die....But if we could communicate with the mosquito, then we would learn that he floats through the air with the same self-importance, feeling within itself the flying center of the world. There is nothing in nature so despicable or insignificant that it cannot immediately be blown up like a bag by a slight breath of this power of knowledge; and just as every porter wants an admirer, the proudest human being, the philosopher, thinks that he sees on the eyes of the universe telescopically focused from all sides on his actions and thoughts.

Heidegger never understood Nietzsche’s Darwinistic humility. If in creating value we must really be “little gods,” as he suggests in the Madman passage from the Gay Science, then nihilism will be the result, for none of us is capable of creating such grand meaning out of the events of our lives. And that is how Heidegger understands Nietzsche. But if Nietzsche, instead of saying we are little gods, is instead saying that we are mere mosquitoes who temporarily discovered reason and need to create some rough guidelines in order to get through 70 or so years, then life does not become nihilistic. But living this way can be messy, especially with previous value systems hanging over our heads, constricting the lines of possibility. And it can breed a very conservative backlash as the old values are trampled upon in the course of modernist
experimentation. And we must remember that the “smallness” of the humble Nietzschean response is a problem.

People want their lives to have meaning in the grand scheme of things, not just a meaning that will satisfy a reasonable person trying to make the most of a short time as a living human being. But this is the modernist mistake. The postmodernist makes it very plain that grand narratives are no longer viable. But Heidegger never understood this, never understood how it was possible to be both small and meaningful. And so Heidegger fell in with Nazi “bigness,” the Volk. That was the philosophical mistake that led to Heidegger becoming a Nazi. And it was ultimately a conservative mistake: it failed to understand the need to embrace the radical truth, that there is no grand narrative waiting to replace the failure of foundationalist modernism. Instead, Heidegger and Germany embraced a fake substitute and the rest is history.

And this is the deeper problem with conservatism: the philosophy of the fake substitute. Conservatism, somewhere deep in its subconsciousness, understands that the foundations are no longer tenable, but it can’t imagine living without those foundations, so it casts around for replacements. But there are no replacements, so any replacement is a lie, possibly a noble lie, but a lie nonetheless. Conservatism senses that it is lying to itself, and it replaces rational deferment with blind assertion. Most of the time this is relatively harmless, but in times of economic distress, it can become dangerous. Is the murderousness of some small modern religions, particularly some micro-sects of Islam at this point in history, a matter of a hysterical rejection of the obvious failure of religion to hold up to rational criticism?

Adorno, another critic of modernist Enlightenment, shows us another mistake in the critique of modernism. Adorno is well-known for his criticism of jazz as irredeemable mass culture. Adorno and Heidegger, like many critics of modernism, fail to see the gains and the possibilities that come with modernist standardization. For Adorno, the tendency of jazz to utilize organizational formulas completely undermined the possibility of real creativity. But Adorno was simply wrong. Jazz went on to become one of the most creative activities one can engage in. Standardization of harmonic forms enabled the development of great improvisational sophistication, a sophistication impossible without modernist premises.

Conservatism thrives in spite of the fact that it is almost definitionally opposed to beneficial mutation. In biology that is simply a death sentence. In the realm of culture, however, Conservatism always has adherents resisting the future at all costs and so manages to avoid the fate of extinction. How is this possible? Conservatism must always lose in the end—as all evolutionary dead ends must, but the potential for another temporary resurgence resides in every economic downturn, natural disaster or personal crisis.
Qualia of dissatisfaction can attach to any belief, no matter how rational, if it is possible to just associate it with pain. This may require obfuscation of the true causality, but no matter, humans do not operate rationally anyway. Or rather, there is no guarantee of rationality and a whole lot working against rationality. Human thought is not conducted by a syntactic machine with an empirically defensible perception of the world. The human mind is a connectionist network that works by association of broad patterns. These patterns are not necessarily scientifically defensible. They are the result of our earliest associations, and have been selected merely because they useful to adherents in some way—but not necessarily in the way it is imagined.

Daniel Dennett argues that there is a fallacy of misguided semantic precision that undermines our ability to understand thinking vi. Our thoughts are a mess. We can see this most clearly in all early examples of categorization. Think of yin and yang in which femininity, yin, is associated with slow, soft, yielding, diffuse, cold, wet, passivity, water, earth, the moon, and nighttime. This makes no sense to us now, but we grant the ancients slack because they had no real science available to them. But notice that it reveals a connectionist sort of associationism. Primitive people make all kinds of crazy associations. In the experience of early peoples these associations probably made sense. They were even selected for in a perverse fashion. We are victims of this primitive associationism. It can rear its head at any time as we witness on all sides of the political spectrum, but more on the conservative side recently.

More sophisticated conservatives utilize education to carry on a complex but ultimately fallacious scholasticism of apologetics for tradition, at least according to my view. From their point of view, they understand both the limits of society and human nature more clearly than the liberal. But conservatism, even intelligent conservatism, always stays too long at the party. It is in the nature of conservatism to not change a position once a position has been taken. Any quick changes violate the virtue ethic of steady character.

It is the case that a certain percentage of the population is going to be genetically disposed to latch onto traditional and particularly religious doctrines. We know that a certain percentage of people’s brains have a greater amount of certain chemicals which cause them to see the world with an aura of sorts. It is the same effect people otherwise constituted so that they do not have an overactive amygdala are able to duplicate with drugs like alcohol, marijuana and LSD. In any case, thanks to mirror neurons, such people with this condition appear to have charisma, which seems to be able to create a good feeling that comes with the aura even in those not so easily disposed toward religious consciousness.

This is a prettier world than the rest of us live in. Ideas which affirm this prettier world get strong purchase in such people. It also affects others—conservative ideas are
powerful even without the genetic assist, but this visceral appeal of conservatism would probably be enough even without the genetic component of the explanation.

What would have to be true for the conservative tendency to be a rational response? The world would have to only intermittently lend itself to human control. If we really cannot control nature or society without disastrous consequences, or at least without suboptimal consequences, we should therefore keep our organized interactions with the order of things to a minimum. If the world is like that, resistant to our best efforts, with losses outweighing the gains from change, then conservatism follows. But if the world is malleable, if we can change people’s circumstances to improve their lives without generally making them worse off, then we ought to do so. I will not try to decide that fundamental and difficult question here.

Although conservatism is conceptually defensible depending on the factual dispute about the nature of the world and of people, conservatism is still resistance to the best argument when the best argument is critical of the status quo. At its most defensible, conservatism is resistance to the quick implementation of actions based on the best argument if that best argument is too recent. How can that be a good thing? In the past, we have had some hare-brained ideas, so it is likely that a fair percentage ended spectacularly mistaken when quickly implemented. Conservatism is good at preventing worst case scenarios of this particular type. But this scenario only obtains part of the time, and it cannot be regarded as a permanent condition because after a certain amount of consideration we can no longer be said to be rushing things.

Rosner correctly points out that the 19th century conservative thinkers were responding to the collapse of traditional values and subsequent problem of nihilism. These thinkers made the wrong choice, and Rosner follows them in making the mistake. Rosner writes, “Rorty’s neo-pragmatist solution is, again, an epistemological version of Musil’s modernism—that is to say, piecemeal, tentative answers are all we’ve really got, and all we can hope for and all we really need....Perhaps it would be easier and preferable with tentativeness and uncertainty, with piecemeal answers, with spiritual aporia, with a void of ethics. But unfortunately I am not. I believe the human mind requires a fixed point of belief, a coherent grounding of its assumptions and world-view.” (96) Rosner and the conservative are mistaken. They could have seen modernity as a liberating renaissance, but instead let their disappointment with reality cloud their analysis of modernity. From the conservative point of view, the radical liberty of the Weimar libertine was too much. Weimar had the conservatives’ “hare-brained idea” detector flashing red. It was too radical for them. It seemed to confirm their conception of human nature and to indicate that tradition was not a world well lost.

The narrative of loss is a deep culprit in the conservative critique of modernity. With Heidegger, it is a perversion of being itself, the West having taken a wrong turn at some point and yielded to what the Frankfurt School calls technological or instrumental
reason. The loss is the loss of an unmediated relation to Dasein or being. But how likely is it that we had a special relationship with Dasein and then lost it to a dominating technology? What is this Dasein and what does it have to do with one’s attitude to modernity? Heidegger seems to indicate that modernity undermines the possibility of authentic Dasein. This would be a deep loss indeed if Heidegger is correct in his assessment of the importance of Dasein. But it is unlikely that Heidegger is correct. Human perceptions and orientations to the world come from senses that evolved from systems for something else. They are askew to the world. There is nothing like a perfect fit between organism and world. Evolution can work wonders, but design is not one of them.

The evolution of consciousness has yielded a phenomenal aspect to human life that is quite rich, but we would be wrong to think that other creatures don’t also have a rich phenomenal life. It is true that they do not have a consciousness for which Dasein is a question, but that is a much higher level consideration anyway. This creates a dilemma for Heideggerians: If Dasein is basic, it is something that cannot be in danger from modernity. If it is a higher level consideration of a being living a middle class German life in Weimar Germany, then it is not so basic after all.

It should be noted that Weimar conservatives are responding to modernity at a very bad time. Weimar Germany was wracked by the Versailles Treaty and subject to overwhelming inflation and unemployment. I believe that part of the negative reaction of Heidegger and others to modernity is because in their view it was ill serving them and because economic and political woes tended to reinforce the groundlessness. Rosner, to be fair, notes this economic and political dimension, but I think much more needs to be made of it. One thinker conspicuously missing from many discussions of modernity, including this one, is Marx. Marx too addresses modernity and provides an answer: unalienated labor. Marx would argue that the meaning of human existence is to be found in unalienated labor, labor that fulfills Hegel’s Master-Slave dialectic in which the slave (laborer) wins the ultimate recognition through the embodiment of the laborer’s ideas in material (or ideal) reality.

The problem with the Marxian answer is similar to the problem with Heidegger’s, namely historical refutation. Stalinism and Maoism discredited Marxism as a real option for modernists just as Nazism did much to discredit Heidegger. But we can separate Marx’s account of alienated labor from his theory of history and the theory of the dictatorship of the proletariat. We need a “small” Marxist answer to modernity, a Marxist answer shorn of its grand narrative clothing. A “small Marxist answer” to modernity is to find a way of making a living that is not only adequate to one’s needs, but personally fulfilling.

Marx also gives us a better and less confused understanding of the relationship of consciousness to technology than Heidegger. Heidegger imagines modern technology
to mark a major break with previous forms, but he also imagines that technological reason to be a necessary result of the metaphysics of presence, which Heidegger traces back to Plato. What Heidegger misses is the extent to which the evolution of technology and of humanity have been complimentary. We started becoming human when we began making stone tools, and the tools made us smarter, made us more than we were. We became more human yet when we acquired the tool of language. We have been in the process of becoming fully human ever since, and our relationship to technology has been incredibly important at each stage. Marx is right that the history of the social forms can be understood partly as a result of changing technology. Marx’s understanding of technology is therefore more consistent with contemporary archaeological and anthropological understandings which link cognitive development with tool use.

Marx also provides us with a start towards a response to tradition. Marx, like Hegel, is a historical thinker. Understanding any form of life must first place that form of life in its historical context. This aspect of Marx’s philosophy supplies an empty spot in Nietzsche. Nietzsche never came up with an adequate way of engaging with tradition and history when creating values anew. There is no view from nowhere. Both Hegel and Marx knew that we must start from somewhere. Unlike Marx, however, I would avoid economic reductionism and look for the lessons to be derived from key periods and episodes of intellectual history. Like Habermas, I read history as a learning process. We can build meaning from a view of history.

The conservatives of German philosophy and Weimar turned recently discovered existential truths into starting points for the conservative critique of modernity. But those same existential truths are sometimes taken as liberating, as they were by Nietzsche. In fact, one could argue that the Nietzschean response is more appropriate to the premise of nihilism—the idea that there are no objective values. But the choice between the Nietzschean and Conservative responses in a given person might very well ride on how good or bad his or circumstances have been recently. The Conservative is the person who, when thrown in the water, senses nothing to hang on to and drowns, while the Nietzschean just starts swimming. Yes, it is true there is no firm spot on which to stand, but that does not mean we cannot get from point “a” to point “b.”

The critique of modernity consists in the fact that it does not supply a replacement for the loss of meaningful values that comes with the modernist victory over pre-modernism. But what counts as meaningful? If the only thing that will count as a meaningful value is one that has the status of the former eternal verities, then no, modernity cannot supply that. However, part of modernity’s message is a call to a greater humility. We are not eternal souls on trial before God for our actions and thoughts over a lifetime. Human life is not so grand as that.
We are simply human beings with 70 or so years to come to terms with our finitude. And that’s it. What does any single human life matter in the cosmic scale of things? Not very much at all. But it matters a bit, if only to ourselves. And it is that humble bit we must first accept if we are to come to any proper understanding of things. That is what Nietzsche learned from Darwin. But this is precisely what Conservatives cannot do. They want that loud, low bass note on the root of the chord signifying resolution that says they are important, of even cosmic significance. They want to be with God forever and they want to be at the center of God’s perspective. And they want justice: they want the evil in the world to end in hell forever. And they want Truth: they want what is true in the past to be true forever. But our smartest, deepest thinkers have told us to settle for rather less than that. And many people are perfectly fine with a changing landscape, especially those directing the change or gaining by the changes, but also those who can ride the wave, so to speak.

Modernity can replace our former values with something much better anyway: a glimpse of some very powerful ways of looking at the universe, and boundless awe at what we see. Ask any scientist if their view of the universe does not inspire them to ecstatic heights of appreciation. The reason for their rejection is that they are asking modernity for something it refuses to supply. It will not supply the undifferentiated lifeworld and the magical feeling of tradition, the secure feeling of belonging that comes with the pre-modern, uncritical acceptance of one’s social role. The problem is believing that an undifferentiated lifeworld and static social roles are good things. They are not.

Habermas characterizes modernity as the tripartite division of the lifeworld into three types of reason: scientific, aesthetic and moral. This has been the Enlightenment’s self-understanding since Kant. The Enlightenment understood that it was a good thing to break Humpty Dumpty, as it were, into three pieces. Otherwise we will confuse our categories. But splitting the world this way took all the magic out of things. The German people wanted the magic, but they were unable to put Humpty Dumpty back together again. So were the German philosophers. But who needs Humpty Dumpty anyway?

David Rosner has written an excellent brief treatment of the critique of modernism in Weimar Germany, utilizing primarily the philosophical perspective, but also giving economic factors an important role in causing the groundlessness that the antimodernists reject. Working primarily with Heidegger, Rosner explains quite clearly why he believes modernism is deeply problematic. This work will be useful for students and researchers interested in the conservative critique of modernism. Although I have tried to show the mistakes of the conservative critique of modernism, Rosner is adept at presenting the conservative argument, and that makes the book a worthwhile read.
References


Reviewed by Michael Andregg

This book is a *magnum opus*. It is the climax work of a pair of social scientists who take the word “science” seriously. Lynn is a psychologist and Vanhanen an emeritus political scientist, who have labored for decades to bring light to a long taboo domain – relationships between intelligence and social phenomena like wealth and health and political institutions and such. Mindful of these taboos, and that some scholars rebel against any definition of “intelligence” much less its measurement by IQ or any other metric, the authors are rigorously and relentlessly quantitative, which makes parts of the book a tough read for those who may be allergic to correlations or numbers.

It is well worth the effort, however, because the authors are very well aware of the difficulties of definition and measurement of any psychological or sociological variable, much less the explosive IQ, and of the limitations of correlation analysis. So they use the tools of their fields as meticulously as possible. They are also extremely ambitious, setting out to unify the disparate social sciences around a core concept of intelligence (both individual and national) much like physics was unified by first, identification of fundamental forces (mass, gravity, energy, etc.) and, later, by the theories of relativity and quantum mechanics.

So they do not limit themselves to IQ and the Wealth of Nations (the title of a previous collaboration by the authors, published in 2002) but rather ask whether significant correlations can be found between IQ and educational attainment, criminal proclivity, religion, public health and many other socioeconomic or cultural variables that have been measured by others across individuals and nations.

Since it is so quantitative, the book includes 15 figures and 61 tables dense with data and meticulously referenced to over 500 sources. Their bibliography alone takes 66 pages. So the work would deserve a place in any social science library on its merits as a meticulous review reference alone. But it is much more than that. It is a serious attempt to break through a taboo that has stunted several social sciences for at least two generations. That is the taboo on systematic (much less quantitative) discussion of intelligence as a meaningful variable, and of IQ as a way to measure that variable.

Their prose is clear, concise, and much easier to read than the rafts of tables and regression charts. They are quite frank about critics without being unduly defensive or judgmental. They appear to me to be relentlessly sincere about their overarching mission, which is to unify the disciplinary chaos that now constitutes social “science”. Their most determined critics would still benefit from the wealth of data and references they present to support their theses.
Since they think that “intelligence” is fundamental to many social variables of interest, the authors cast a wide net to find correlations between IQ and (brace yourself; this list is long): economic development, educational attainment, poverty, income inequality, unemployment, political institutions, democratization, gender inequalities, corruption, national health statistics such as life expectancy and infant mortality, crime, cognition, liberalism – conservatism, religion, happiness, and indices of human conditions developed by the UN and others. Each of these sections introduces literature by other scholars who have tried to define and quantify such difficult variables. Those are then correlated with and sometimes regressed against the authors’ (and other scholars’) estimates of national average IQs.

This is a genuine magnum opus that strives to break out of the self-imposed box canyon of social science created by those who reject the very concept of “intelligence” as intrinsically unknowable. We are all intimately familiar with fears that racism might contaminate statistics or that sinister political goals might compromise clear-eyed consideration of sensitive subjects, like the obvious fact that intelligence varies among individuals and across groups. But we also be should be brave enough to face the wealth of evidence that intelligence matters, both for individuals and for groups as large as nations.

Richard Lynn and Tatu Vanhanen are brave enough, and they have done the very best they could to pass decades of study of these difficult topics on to us. Whether their core concept results in more unity among the disparate social sciences is up to others. But I recommend “Intelligence: A Unifying Concept for the Social Sciences” to all serious scholars and research libraries, without any reservations at all. Be prepared to learn a lot about the real world of human beings and institutions that we share.

Reviewed by George Von der Muhll

Laina Farhat-Holzman’s *Worldchangers* is an ambitious book. In barely 90 pages she sets out to make a case for her selection of the ten technological inventions that most profoundly and extensively changed the course of human history. The range of her conspectus is broad indeed. It encompasses the globe, and its chronological scale runs from the Stone Age forward. Expositing the nature and significance of each invention she highlights obliges her to display some familiarity with the science underlying it as well as the more general state of contemporary scientific knowledge in that epoch. Moreover, her titular commitment to showing that the innovations she is discussing changed “everything” presupposes familiarity with many key elements of the diverse social orders impacted by the innovations she chooses to examine. In all, her project entails identifying the broadest, deepest, and most powerful currents giving form to world history. To an impressive extent she succeeds in her quest.

In pursuing this goal she throws in sidelight observations and intriguing connections that materially add to the stimulus of her central argument. She moves confidently and comfortably from Phoenician explorations to the Viking slave trade, from ancient Harappan irrigation projects in the Indus Valley to the invention of multi-staged fireworks rockets in 16th century Germany and to an evolutionary explanation for a possible selective genetic advantage enjoyed by women in learning second languages. She displays a sharp eye for striking statistics. Her concise, unpretentious, readily accessible prose enables readers to undertake long journeys in short order. Whatever prior knowledge they may have of the subject, they are likely to be grateful to an author who instructively and provocatively draws together so many informative insights in so undemanding a format.

Farhat-Holzman’s declared objective differs appreciably in its emphasis from many earlier histories of technology. Rather than dwelling on the intrinsic importance of the inventions she examines, why these inventions occurred at a particular time and place in world history, and the previous developments required to make them possible, she takes them as points of departure for tracing the shock waves they generated in moving toward ever more distant outposts of the societies within which they were brought to fruition. Her central thesis is that technological innovations have too seldom received their due as progenitors of many of the most fundamental transformations of the worldwide social order. Though she does not explicitly say so, she bypasses the challenges posed in such studies as Abbott Payson Usher’s *A History of Mechanical Inventions* and (for the most part) S.C. Gilfillan’s *The Sociology of Inventions* to align herself with the tradition founded by the young Marx and carried forward in Lewis...
Mumford’s classic *Technics and Civilization* and David S. Landes’s *The Unbound Prometheus*.

Her starting points for developing this argument -- i.e., her list of ten “world-changing inventions” -- will not startle most readers. The criterion she uses to determine that status is the extent to which the invention functioned as a “game-changer” in the history of humanity. An invention had this impact, she writes, to the extent that it gave “rise to all sorts of smaller technologies that enlarged what human beings can do” (2). Thus the first such invention--the “domestication” of fire through devising wooden fire drills to start fires when needed (and only then!)--was obviously in itself an intrinsically significant development in human history insofar as it provided protection at night from predatory animals, warmed dwellings so as to make living in cold climates tolerable for “naked apes,” and extended lifespans through enabling humans to cook raw meat before consuming it.

More crucially to her thesis, however, the invention of the fire drill led over time to improvements in weaponry (fire-hardened sticks for use in hunting), to boiling and stewing food (through hardening clay cooking vessels into non-porous pottery), and to parching wild grains so as to render them edible for humans. At some later point, Anatolians and their neighbors discovered the art of putting fire to use in smelting metals, thereby dramatically refining and extending the range of tools and weaponry that smelting could produce and the undertakings in which they could be put to use.

Similar analysis leads to placing the adapting of wild plants to the nutritional needs of human beings on her list; in conjunction with what she calls “water technologies”, these adaptations made possible the “agrarian revolution” that provided the infrastructure for settled agrarian societies that in turn could support cities as stable sites for diffuse innovations. The printing press and the telescope make an expected appearance in her discussion of the origins and efflorescence of the European Renaissance. Inventions permitting communication at a distance, the systematic development of new forms of energy, their controlled application to transportation, and the invention of the computer bring her list to a concluding, broadly inclusive tenth category embracing the prospective societal impact of innovations in space rocketry, brain “geography,” medicine, and molecular biology.

Claiming to have identified “the” ten innovations with the greatest qualitative impact on society predictably raises questions transcending whether her “tenth” category in fact expands her list to half again its declared length. Was the invention of the telescope, for example, more qualitatively significant, whether as mechanism or as metaphor, than the mobile mechanical clock (which curiously receives no mention in these pages)? To be sure, telescopes stimulated a lens-grinding industry in the Lowlands. They aided sea captains in their explorations and military commanders on the field of battle. They notoriously contributed to the anti-scientific drift of the Vatican Counter-Reformation.
But these in themselves were hardly world-historical transformations, and the telescope’s role in them was neither as a necessary nor as a sufficient factor. It was certainly not as far-reaching and pervasive a “game-changer” in its societal impact as were the possibilities opened up by increasingly reliable clocks that made possible precise coordination of terrestrial with celestial movements among thousands of interdependent human beings out of view of one another, and the complementary meshing of decisions with initiatives in military strategies as well as in the “satanic mills” of the Industrial Revolution.

However enticing and instructive such disputations might prove in individual cases, this reviewer will not pursue them further here. It seems almost axiomatic that such debates will arise while reading a work as ambitiously comprehensive in geographical scope and chronological scale as this one. More instructive issues are raised by the instability of Farhat-Holzman’s causal variables. Her chapter on “water technology” illustrates a specific form of a more general problem. The chapter begins with a discussion of irrigation (surprisingly making no mention of Karl Wittfogel’s celebrated thesis that control of irrigation gave rise to “oriental despotism” and later to Soviet Communism).

It then shifts to the special advantages enjoyed by inhabitants of the European peninsulas at the western end of the Eurasian landmass in developing sea-going commerce; but advances in waterborne transport in this instance are presented more as productive adaptations to geomorphological configurations than as autonomous innovations with an independent impact on societies. After an intrinsically interesting discussion of the phenomenon of piracy that seems to have rather little to do with “water technology”, the chapter concludes by inviting attention to coming “water wars” in the arid Middle East and the flooding of Bangladesh—topics that once again are associated with the importance of water as a commodity but not with innovations in water technology and their impact.

An inherent problem in designating any invention as a “game-changer” lies in showing that a particular invention thus singled out was more causally crucial in promoting the stream of innovations that followed than other inventions that chronologically preceded, succeeded, or were nearly contemporaneous with it. As a practical matter, patent offices must struggle with such questions all the time. Occasionally, a single invention stands out so dramatically—one thinks of the Wright Brothers’ first mechanically-driven flight at Kitty Hawk, the first atomic bombs in July-August of 1945, and yes, Galileo’s use of the telescope he devised—that most observers will not quarrel too long over what was special about the invention and what further improvements and ancillary technological developments to attribute to it.

But when, exactly, was the computer produced, and at what point did its potential impact as a “game changer” become clear? With the mechanical embodiment of binary number systems in calculators? With the creation and refinement of silicon
information-holding micro-chips for such machines? With Shannon and Weaver’s development of information theory to the point at which “computers” ceased to be calculators limited to providing answers to problems formulated in a numerical language? With the production of affordable personal computers and the institutionalizing of the Internet?

Allied with an image of “an” invention as distinct from a set of interacting and mutually reinforcing technological developments is the temptation to simplify and over-dramatize the role of such inventions in societal change. Thus many historians became intrigued by the proposition that the invention of the stirrup produced medieval European feudalism because it enabled heavily armored knights to ride their steeds into battle. Farhat-Holzman is not free from this temptation. It is to be found in several chapters, but perhaps most conspicuously in presenting the telescope as the key progenitor of the 17th century scientific revolution in Europe (40-41).

This tendency leads to what might be described as an unbounded evolution and expansion of themes in her chapters. Thus the chapter that begins with the impact of the telescope on European society ends a few pages later with a section on death rates in childbirth and the consequences for women of the displacement of servants by the washing machine. The chapter on “water technologies” ends with a section on the role of “heavy water” in the production of the atomic bomb.

Attributing long chains of outcomes to a single specific invention also obscures what has often proved to be the single greatest impact of a technological innovation—its demonstration that a widely recognized problem is soluble through technical means. The historic importance of Edward Jenner’s demonstration that inoculation—not incantations or consuming ground-up precious stones or burning witches—can be the key to checking the spread of infectious diseases lay in its role in stimulating widespread searches for analogical techniques for eradicating other diseases while generating feedback loops improving the original innovation itself.

Such models would seem to serve better than straightforward chains of cause and effect to explain the “lumpiness” evident in the history of technology. They account for the nearly simultaneous outburst in the Industrial Revolution of inventions centering around the steam engines. They help us to understand the rapid advance in the early 19th century in precision engineering—whether in producing clocks or Colt pistols—in Switzerland and Connecticut, and later the emergence of Wilhelminian Germany as the leading technological center of Europe through a multitude of interdependent inventions derived from systematic and sustained use of chemical analysis to produce new products with specified properties.

The societal “impact” of an invention therefore cannot be described in terms of Newtonian necessity as a straightforward function of its properties. As studies of the
Industrial Revolution have shown, that impact may well depend much less on the metaphorical “mass” and “force” of the invention itself than on the structure of the economy in which it is invented and the coexistence of other technological advances with which it is interdependent and for which it creates a demand. As the history of the last two centuries has shown, patent laws, military procurement practices, and the degree of institutionalization of technological research in universities and large corporations are likely to play critical roles in transmitting, accelerating, and diffusing (and thus determining) the impact of an invention.

It must also be acknowledged, however, that taking full account of many of the points raised in this review would require a book of at least twice the length of this intentionally slender volume. Taken for what it is and aspires to be, then, reading WORLDCHANGERS is an enriching experience not only in itself but for the questions that linger in the mind long after one has reached its last page.
Orlando Figes, *Natasha’s Dance: A Cultural History of Russia.*
*New York: Picador, 2003.*

Reviewed by Mariana Tepfenhart

Orlando Figes is the author of many best-selling books and a professor of history at the University of London. He is also a contributor to such major newspapers as The New York Times and The Washington Post.

*Natasha’s Dance* received outstanding reviews from some of the most important newspapers and literary personalities of the United States and Great Britain. “A sweeping cultural survey of Russia … thought provoking” (The Economist), “A big bold interpretative cultural history” (Foreign Affairs), “Stunning and ambitious” (The Atlantic Monthly), “Staggering” (Los Angeles Times), “Captivating” (The Washington Post) “Breathtaking” (Independent on Sunday), and “Awesome” (The Times). And the list goes on and on. It is difficult to find new words to express admiration for this book.

The title of the book was inspired by a famous scene in Tolstoy’s masterpiece, *War and Peace*. Natasha Rostov, an aristocrat from the elite society of St. Petersburg, visits her uncle who lives in a wooden cabin in the forest. There she is treated to Russian specialties and folk music. When the music performed by the serfs of her uncle starts, Natasha instinctively starts to dance, although she was totally unfamiliar with this style. Tolstoy’s idea was that there is a national consciousness that surpasses class differences and unites a people. Like Tolstoy, Figes is interested in presenting the inner life of the nation as it is perceived not only through monuments of art, but also in customs, beliefs, religion, myths, habits that were passed down from generation to generation.

Figes divided his book into eight chapters that cover the time period from Peter the Great to Brezhnev. Each one of them focuses on a specific theme. The author is not so much interested in following the exact chronology as in rendering the main trends of a period. To achieve this, he uses different individual lives as memories that would define a certain period.

The first chapter, European Russia, deals with St. Petersburg, Peter’s “paradise.” The new capital of the empire was built with specific instructions from the tsar regarding the style, the construction materials and even the colors. It was intended to be “a negation of medieval Muscovy,” a city rooted in spiritual traditions of Eastern Orthodoxy, dark and backward. St. Petersburg was very European, vast, with bold colors. In terms of scale and grandeur, St. Petersburg’s magnificent waterfront has few equals. The canals and rivers are like mirrors, reflecting facades of the palaces.

The city offers a fusion of architectural styles but the author focuses on The Fountain House, the palace of Nikolai Petrovich Sheremetev, one of the richest men in the world.
The palace was decorated with European wall paper, sculptures, and paintings and had a library with over 20,000 books. It was not only a residence but a cultural center of the city where concerts and plays were performed on a regular basis.

Peter’s reforms generated a huge debate regarding the identity of the Russians. Do they belong to the West or to the East? Peter was revered and eulogized by the liberals who envisaged him as a champion of light against darkness. The Westernizers, as they were known, considered Peter a hero who took the country from a backward stage to a modern era in a record time. For the educated Russians the West was their ideal, the source of inspiration. Russia should develop in the context of the Western civilization, not in opposition to it.

The Slavophiles considered that Peter destroyed the true principle and way of life of the Russian people. One of the Slavophiles, Alexander Herzen, a nineteen century writer and philosopher, said that Petersburg is an artificial copy of the West, and that it “differs from all other European towns by being like them all” (Figes, 9). The West was corrupt and false. Gogol stated that Paris had “only a surface glitter that canceled an abyss of fraud and greed” (Figes, 65). For the Slavophiles, the Russian future lay in the return to native principle, in overcoming the dying West.

The year 1812 marked a turning point in the cultural trends of Russia. It is the year when Tsar Alexander I defeated Napoleon, after a long and devastating war. But disenchantment with the French culture started earlier, during the reign of Catherine the Great. Although she considered herself an enlightened monarch and was in contact with the most important philosophers of the time, the bloodshed of the French Revolution turned her against the French and their Enlightenment.

Alexander I, Catherine’s grandson, was also educated in the spirit of the Enlightenment, but he also changed when he saw the consequences of the French Revolution and, later, the imperialistic policy of Napoleon Bonaparte. The year 1812 brought a patriotic climate. The use of French was frowned upon. Fashion, house decorations, entertainment, cuisine, music, literature and art had to be Russian. There was a conscious effort to assert Russianness. It was the beginning of a quest for Russian nationhood.

The officers who accompanied Alexander to Paris realized Russia’s backwardness and its lack of basic rights. They wanted a constitutional monarchy. Those officers were disappointed with Tsar Alexander, who gave the French a very liberal constitution, but not the Russians. They formed a revolutionary group that came to be known as Decembrists. The rebellion failed because they lacked strong leadership and had little social backing for their ideas, which shows the feebleness of the Russian middle class at that time.
The next chapter focuses on Moscow. After the building of St. Petersburg, the population of this old capital declined and it became more a provincial city. Pushkin compared the city to a faded dowager queen, in purple mourning clothes, obliged to curtsey before a new empress (Figes, 153). But many looked at the city as the embodiment of the spirit of the old Rus. For instance, Mussorgsky found Moscow to be a “realm of fairy tales” for its Russianness (Figes, 175). Moscow was a Russian city while St. Petersburg was a foreign city. The difference between Moscow and St. Petersburg is well defined by Gogol:

Petersburg is an accurate, punctual kind of person, a perfect German and he looks at everything in a calculated way. Before he gives a party he will look into his accounts. Moscow is a Russian nobleman, and if he is going to have a good time, he will go all the way until he drops, and he won’t worry about how much he’s got in his pockets. Moscow does not like halfway measures…. Petersburg likes to tease Moscow for his awkwardness and lack of taste. Moscow reproaches Petersburg because he does not know to speak Russian… Russia needs Moscow, Petersburg needs Russia. (Figes, 157)

The chapter “The Peasant Marriage” presents life in the country, the patriarchal nature of the peasant family and its impact on the culture. Traditionally, the rights of husband over wife were enforced through the Church, customs and the civil laws. The husband had absolute authority over the family. According to the Digest Laws of 1835 the duty of the wife was to “submit to the will of the husband” and to stay with him under any circumstances (Figes, 251).

Wife beatings were not only common but recommended. The 16th century manual for the household, Domostroi, contains rules of how to tame the wife and keep her obedient. There were proverbs, with advice and justifications for violence. For instance:

1. Beat your wife like a fur coat, then there will be less noise (Figes, 252).
2. A wife is nice twice: when she is brought in the house (as a bride) and when she is carried out of it to her grave (Figes, 252).

The same chapter introduces the reader to a new trend in Russia and Europe, the neo-nationalists. The artists of this trend are fascinated with the folk art, primitive and exotic elements. The trend is exemplified by the famous Ballets Russes--The Firebird, Petrushka, and The Rite of Spring.

The Rite of Spring, presented in Paris, 1913, was conceived as a re-creation of pagan human sacrifice. The music was composed by Igor Stravinsky, costumes by Nikolai Roerich -- an artist of prehistoric Slavs, and the choreography was created by the world-
renowned ballet dancer, Nijinsky. It was powerful, exotic and shocking. The West had never seen anything like this.

Chapter 5, “In Search of the Russian Soul,” is dedicated to the influence of Christianity in Russia. The Russians formally accepted Christianity from Constantinople around 988. The Byzantine influence was not limited to the Christian church but permeated all aspects of social and cultural life. Some church historians argued that religion retained a superficial hold on the masses who remained heathens in their daily practices and convictions. The author also presents different interpretations of concepts like death, immortality and God, as they were perceived by writers like Dostoevsky, Tolstoy, Chekov and others.

The influence of the Mongols in Russian history is the focus of Chapter 6. For over 200 years they ruled Russia. There is no consensus regarding the role of the Mongols in Russian history. Some point to the devastation and the destruction brought by the Mongols. Others proclaimed the fundamental affiliation of Russia with Asia. They emphasized the transforming of Russia from weak and divided to a powerful autocratic state. It was also a reaction against the rejection of the Russians by the West; they were labeled “Asiatic barbarians.” The intelligentsia turned back to the ancient times to stress their Scythian roots and be proud of them. They saw the world of the Scythians as a realm of spiritual beauty which could be a source for the regeneration of the West.

Chapter 7 deals with World War I, the Russian Revolution, World War II and Stalin’s terror. Through the life and work of Anna Akhmatova, the reader is introduced to the events that destroyed an entire civilization, to the harsh conditions under which people lived during the wars and the Bolshevik regime. Unlike others who fled the country, Akhmatova remained and struggled to survive the ordeal. She was a symbol of endurance and human dignity. The fate of those who left the country is the topic of the last chapter. The author traces the lives of some of them, their alienation, their longing for Russia and poverty. The Russia they knew was no longer. They lived with their memories.

_Natasha’s Dance_ is superbly written and documented. The style resembles more a fiction book than a history book, but the reader will derive more information about Russia from this book than from a regular text book.
Call for Papers

44th Annual Conference of the International Society for the Comparative Study of Civilizations

June 11-15, 2014
Monmouth University, West Long Branch, New Jersey, USA

Can Collective Wisdom Save Civilization?

Jonathan Lear, in his book *Radical Hope* (2006), wrote:

“We live in an age of deep and profound angst that the world itself, as we know it, is vulnerable and could break down...We are confronted with global warming, nuclear conflagration, weapons of mass destruction...and even the demise of civilization itself...events around the world – terrorist attacks, violent social upheavals...have left us with an uncanny sense of menace. We seem to be aware of a shared vulnerability that we cannot name.” (p. 7)

What is the way out of this deep sense of contemporary crisis?

What exactly is “wisdom” and how can wisdom be promoted on a global level to deal with a number of serious crises now facing the future of civilization?

What have been some different definitions of wisdom? This is an ancient topic, but how can it be specifically applied today?

What, if anything, can be done to solve these problems collectively?

Some applications may be (but are not limited to) the following questions:

- What exactly is human nature and how is this relevant to civilizational futures?
- What are some possible solutions to overpopulation and the related problems of over-industrialization, resource-depletion and environmental degradation?
- What are some possible solutions to the problem of inequality, economic and otherwise?
- Why do a few have so much while so many have so little? Do rich nations have any responsibilities to the poor ones?
- Is Capitalism really working today? What did the “occupy” movements signify? Why are many western economies currently floundering?
- How have technological advances (especially increasing automation) contributed to the current jobs crisis?
- Does material accumulation really bring happiness? Why/why not?
Is humankind naturally prone to conflict or cooperation? How are organizations like the United Nations faring with regard to international responses to regional problems?

What is a Utopia? Dystopia? How are these terms relevant today? What roles do utopias and dystopias play for the future of society?

Have our leaders run out of inspiration? Is fear now the main rhetoric?

In the 20th century, humanity saw the rise of several grand ideologies: Communism, Fascism, Liberalism, etc. We also saw the dismantling of many of the institutions built on these grand visions. Have today’s leaders given up on grand visions? Is narrow self-interest and small scaled-down retraction now the trend? If so, what are the implications of this? Is this ‘realpolitik’ or just the politics of disillusionment?

And of course, papers concerning all questions relevant to civilizational studies are also welcome!

These could include:

- Studies of great civilizationalists, e.g., Spengler, Toynbee, Sorokin, Quigley, etc.
- Analyses of particular civilizations and/or comparative studies of civilizations.
- Decline and progress of civilizations.

Please send abstracts via email by April 1, 2014 (300 words) to:

Prof. David J. Rosner
Metropolitan College of New York
ISCSC President and 2014 Program Chair
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