

Animating Creativity: The Functioning of a Healthy, Human Mind

by the 'New Astronomy' Animations Team,
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In March of this year, our team of four members of the LaRouche Youth Movement (LYM) assembled at the *EIR* office in Leesburg, Virginia, and spent a week and a half working in both Leesburg and the Library of Congress, developing a draft version of the animation called for by Lyndon LaRouche in his "Travel Among Cities" piece from the Dec. 30, 2005 *EIR*. The results of that preliminary work can be seen on the LYM website at: <http://www.wlym.com/~animations/travel/index.html>.

When we received word in July that we would be heading back to Virginia to do more work on economic animations, and that we would be working under the personal, hands-on direction of LaRouche himself, our minds started churning, thinking about more work to do to extend what we had begun in March.

Little did we suspect that the "Late July Group," as we called ourselves, would soon become the "July-August-September Group," and that we would be going back to the year 1609 to understand economics today. The focus of our work was not to be on animating transportation infrastructure at all, but rather on animating creativity. On the day that we arrived, we were talking over ideas, when LaRouche dropped off a draft copy of his "Re-Animating an Actual Economy" (*EIR*, Aug. 4, 2006) and told us to have fun with our assignment. We began reading, and realized quickly that we should trade in our Library of Congress cards for a telescope. In the section of his paper titled "Understanding Business Cycles," LaRouche wrote:

Since all competent modern physical mathematics is based on the pioneering achievements of Johannes Kepler, the argument to be made, in explanation of the intrinsic incompetence of statistical mechanics for economics, will employ the image of a planetary orbit, as defined by Kepler's uniquely original discoveries, to define a forecastable quality of true long-term cycles in an economy. That lesson, from Kepler, for economics today, is the best source of remedy for the failures intrinsic to the consistently failed methods which have been employed by economics statisticians generally during the recent decades. . . .

Currently, I am working with a selection of talented young adults of exceptional promise for their future contributions to relevant scientific accomplishments. My included purpose in the immediate project, on animations, is to demonstrate to intelligent professionals, and to others, the proper methods of approach in use of computerized animations of county-by-county data, that over periods of two or three generations, in showing the determining factors in cause of catastrophe or recovery in the U.S. economy (in particular) today.

This work is premised, at its first stages, on the way in which Johannes Kepler defined cycles within the Solar System, and the way in which Kepler thus defined the need for developing both the infinitesimal calculus uniquely developed by Gottfried Leibniz, and the successive development of elliptical and higher (hypergeometric) functions by Gauss, Abel, Riemann, et al.

The crucial topics treated under that approach, include the functionally determined relationship between the general basic economic infrastructure of whole



EIRNS/Brian McAndrews

The LYM "July-August-September Group" works on computer animations for the Kepler project. Left to right: Jason Ross, Delante Bess, Will Mederski, and Brian McAndrews.

economies, and the productivity of agriculture, manufacturing, and rates of tangible (physical) growth in the so-called private sector of an economy taken as a unified whole. However, the crucially underlying objective of these studies, is to discover the principal factors which are determining, or might determine either net growth, decline, or stagnation in the rate of the performance of the economic phase-space considered, or a national or larger economy as a whole. The latter task, the uncovering of the principal determining factor, is the functional requirement essentially lacking in the approach to defining animations in the exemplary case represented by Nordhaus's¹ report.

The most suitable pedagogical approach to this crucial feature of the study, is that modelled on the most essential distinctions of Kepler's referenced discovery: the discovery of the principle of the "infinitesimal." This is the distinction which is apparently beyond the comprehension of today's commonly encountered academic classroom and related productions respecting the principles of physical scientific and related investigations.

It didn't quite sink in at first that we had a huge job in front of us: We were to animate Johannes Kepler's discovery of the infinitesimally acting principle of universal gravitation! After we read through the paper, LaRouche came in to talk to us, stressing the Pythagorean comma in music, and the need to search for discontinuities in statistical methods to find true principles. Kepler is the beginning of modern science, and his work, combined with Fermat's work on least-time pathways of light, prompted Leibniz's discovery of the truly infinitesimal calculus, he told us, also pointing to the work of Napier on logarithms and Gauss's determination of the orbit of the asteroid Ceres.

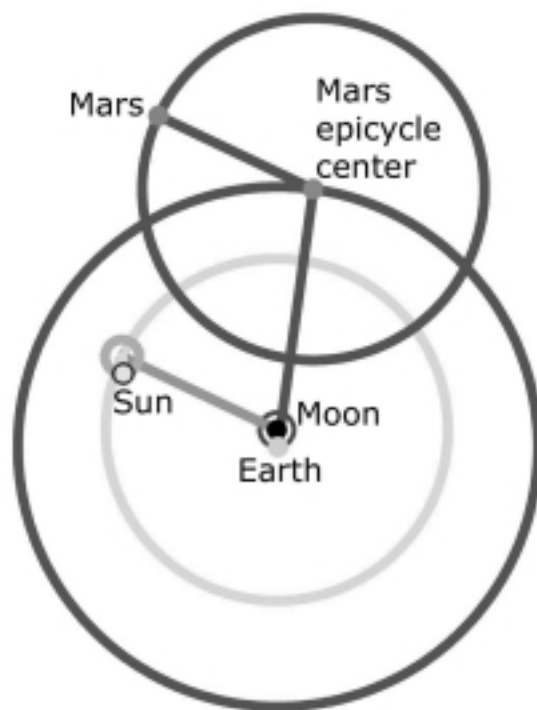
We began by acquiring copies of Kepler's *The New Astronomy*, and looking for the specific sections of the book that seemed to address our task, but soon recognized that we would have to read the entire work. Being a huge book, this task itself took us about a week. It was becoming clear that we weren't going anywhere for a while.

As we worked and struggled, trying to figure out what makes the ecliptic different from the horizon, right ascension from declination, the mean Sun from the apparent Sun, and truth from statistics, parts of the book began to take shape. Little by little, Kepler's "vicarious hypothesis" and the failure of statistics, the equivalence of hypotheses, the development of the physical principle that set the standard for modern physical science, the species of the Sun, and the famous "Kepler Problem" to future mathematicians, ceased to be mere words or formulas, and took on the substantial form

1. William Nordhaus, *Geography and Macroeconomics: New Data and New Findings*, www.pnas.org/cgi/reprint/103/10/3510.

FIGURE 1

The 'Lunatic Hypothesis'



Source: The developing LYM animations project on Kepler's *New Astronomy* can be viewed at www.wlym.com/~animations. This one is www.wlym.com/~animations/part1/lunatic/html.

A still from an animation of the "Lunatic Hypothesis." Kepler proves at the outset of The New Astronomy that the planetary hypotheses of Ptolemy, Copernicus, and Brahe, while seeming to vary greatly, are actually equivalent. This means that experimental testing of observations cannot determine which is correct. Here, the LYM team extended Kepler's demonstration, by creating a planetary system in which the Earth, Sun, and planets all move around the Moon, and this too is shown to be equivalent! Absent a physical cause, explanations of motion can never be proven to be true, and yet the provable truth exists.

of ideas.

Although those professors who design university astrophysics curricula may disagree, work on astronomy cannot be performed competently without actually performing astronomy. LaRouche lent us the use of his telescope, and nature conspired, for a time, with clear skies, to allow us nightly observations of the moons of Jupiter, to get a sense of how the first determination of the speed of light was performed. We learned to recognize the signs of the zodiac and get our bearings at night, and to see the different motions of the planets, stars, and the Moon.

We were able to make physical models of an equant-based planetary system out of some old flooring material and

FIGURE 2

The 'Vicarious Hypothesis'



Source: www.wlym.com/~animations/part2/16/index.html

A still frame from an animation of Kepler's "Vicarious Hypothesis" in The New Astronomy. Kepler proves, conclusively, the failure of statistics to account for observed effects, let alone explain their causes, by tracing out the failure of geometric constancy as a universal, demonstrating, instead, the existence of a physical principle of constant change as the only possible universal.

a kitchen clock, and a Ptolemaic world-system. We also used ropes, laser pointers, and many zodiac printouts to work through the physical world corresponding to numbers on the printed pages of *The New Astronomy*.

An opportunity to test our comprehension presented itself with the Sept. 3-9 week of action in Washington, D.C., which the entire LYM east of the Mississippi (including Montreal) attended. After a week of rallies, singing, and visits to Capitol Hill by the LYM, and intense preparation by us, the weekend gave us a chance to present our work. The work leading into the presentation, and the presentation itself, sparked a world-wide renaissance of Kepler. We received calls from the LYM in Germany, had the Argentine LYM on live for the presentation, and sparked a unified, international conspiracy to create a movement armed with something that seems decidedly unpractical to a doomed civilization: reason.

Beyond being able to create specific paradoxes to reveal to people the errors in their conclusions, we are developing hundreds of young people capable of potently taking up the challenge of how to think.

As our work reached a close for this phase, another group of LYM members arrived to begin work on the next project LaRouche had assigned: Kepler's *Harmony of the Worlds*.



EIRNS/Dan Sturman

Lyndon LaRouche works with Brian McAndrews to fine-tune a pedagogical demonstration from Kepler's The New Astronomy.

We had a joint read-through of *The New Astronomy* with them, and did some teaching on how to make computer animations before heading back to our respective parts of the country. We can look forward to seeing the results of their work, and are presently changing the orientation of our movement in the direction that LaRouche demands and history requires: the creation of creativity, and the political fight to shape governments to make that identity a possibility for everyone in the world.

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Advice to Thinkers:

Do not read this article and think, "Oh, how nice, young people are working on something wholesome." Neither should you think (as some who opposed the space program thought): "What a waste of time and money to put effort into this when we have a serious, existential political threat to deal with." You, kind reader, most likely have no referent in your mind, of the true nature of scientific discovery, and that goes double for anyone who has studied science. It is absolutely essential that you get a copy of *The New Astronomy*² from your library (quick, before your neighbors get it!), and work through it with the animations created by this project: It will make you human.

Advice to Idiots:

But, if the stars you choose to study are found in such literary works as *People* and *In Touch*, don't let your foolishness prevent you from helping those who do intend that civilization flourish.

2. Johannes Kepler, *The New Astronomy*, translated by William Donahue (Cambridge, U.K.: Cambridge University Press, 1992).