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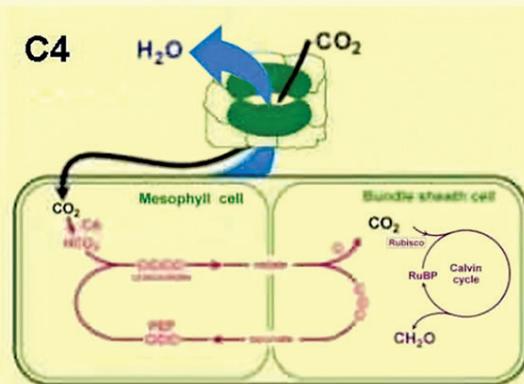
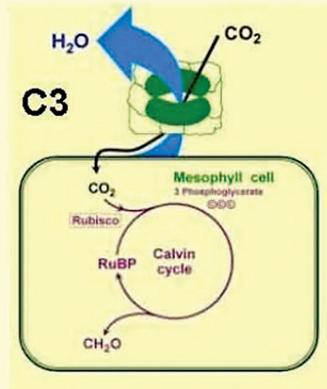
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Superpowers Make 11th-Hour Effort To Avoid Global War
How Abandoning Science Has Led to Economic Collapse
Questions To Be Answered in Benghazi 9/11 Investigation

Scientific Breakthroughs Will Transform Agriculture, End Hunger



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EIR

From the Managing Editor

The unifying theme of this week's issue is *Science*, beginning with our cover story, which reveals the stark contrast between today's reality: "World Grain Shortage: Famine Ahead Without Glass-Steagall Shift," and what is possible with a scientific approach to global food production: the second part of Dr. Robert Zeigler's report, "Rice: Scientific Breakthroughs To Transform Agriculture."

The focus on science carries through to *Physical Economy*, where two members of the LaRouchePAC science research team discuss "How Abandoning Science Has Led to Economic Collapse," an excerpt from the April 17 LPAC Weekly Report, following by an Appendix, "What Creates Wealth? Production vs. Overhead."

A *Science* section looks at "Planetary Defense: Progress and Enormous Challenges," in which LPAC'S Benjamin Deniston reports from the International Academy of Astronautics' Third Planetary Defense Conference, held in Flagstaff, Ariz. April 14-19.

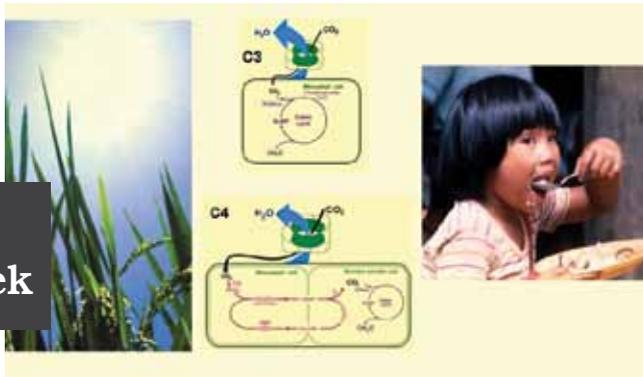
Our *Conference Report* continues this scientific outlook into the realm of Classical art, with speeches from Panel 5 of the April 13-14 Schiller Institute conference on "The Future Paradigm: Toward a Renaissance of Classical Music and Science," featuring presentations by Russian historian Andrey Fursov; Schiller Institute founder Helga Zepp-LaRouche; Italian opera singer Antonella Banaudi; a lively discussion with Lyndon and Helga LaRouche concludes the panel.

Two additional sections cover the most important news developments of the day: *International* begins with the war-avoidance efforts by the U.S. and Russia, "Israel Strikes Syria: Superpowers Make 11th-Hour Effort To Avoid Global War"; followed by updates from Europe on the continuing disintegration of Euroland; and the formation of new anti-euro movements in Greece and Italy. In *National*, you will find an exciting report on LaRouchePAC's Week of Action, aimed at cracking open the resistance in Congress to the immediate reinstatement of Glass-Steagall, with rallies and meetings in Washington, and across the country. As the political heat builds to end the coverup what really happened last September in Libya, we present the "Questions To Be Answered in the Investigation of Benghazi 9/11."



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IRRI/Gates Foundation

4 World Grain Shortage: Famine Ahead Without Glass-Steagall Shift

The consumption of grains of all kinds now exceeds the volume of global production, and the gap can't be made up. Allowing the continuation of the policies—dictated by the imperial financial cartel—which have led to this disaster, and to at least a billion people worldwide already going hungry, is not an option. The solution is a shift, and fast, to Glass-Steagall.

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WORLD GRAIN SHORTAGE

Famine Ahead Without Glass-Steagall Shift

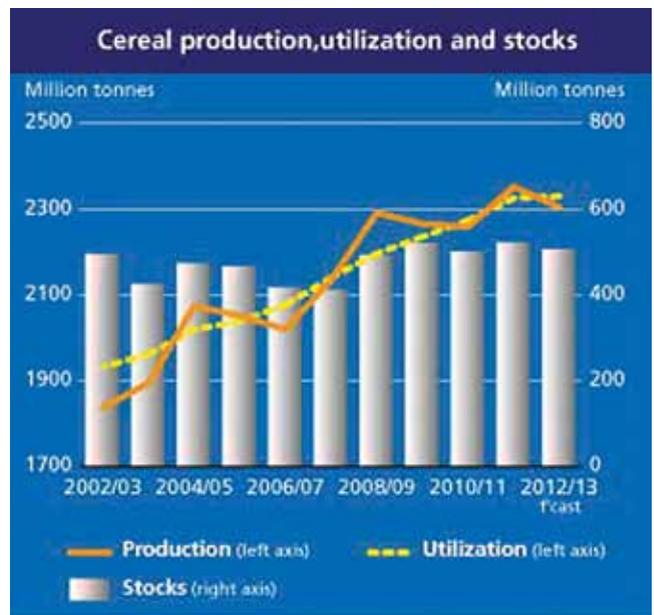
by Marcia Merry Baker

May 13—The level of worldwide yearly utilization of grains (all kinds)—for direct human consumption, live-stock rations, seed carryover, biofuels, wastage, etc.—now exceeds the volume of global production; the gap can't be made up. This means just what you think it does: We are in trouble. The policies behind this are insane. Allowing them to continue means that there is no hope for the billion people already going hungry in the world, and no hope for the future anywhere.

Figure 1 gives a snapshot of the grains production/consumption crisis; it was released May 9 by the UN Food and Agriculture Organization's "FAO Cereal Supply and Demand Brief." The agency reports that total world grains (cereal) production for 2012-13 is expected to be 2,306 million metric tons, which is less than the 2,332 mmt expected utilization. This isn't the first-ever occurrence of such an imbalance, but with effectively no reserves, no recourse, and no policy change, the import is deadly.

Bad weather in several key farmbelts (as the FAO reports) is a contributing factor to seasonal shortages. But the global *vulnerability* of present-day agriculture to weather extremes has been a deliberate aspect of the "free markets" regime foisted on the world for decades by globalist financial, commodity, and political networks best known as the British Empire. *Their intention is food scarcity and depopulation.*

FIGURE 1



FAO

A recent expression of this appeared in a December 2012 report from London's Royal Institute of International Affairs (Chatham House), titled "Resources Futures," which decreed that the "new normal" consists of price shocks from over-population pressures on scarce resources, for which there is no solution. Governments

must form a “coalition of the committed”—an R30 (Resources 30), to ration the scarcity.

What does the Obama Administration have to say about crop prospects ahead? “Don’t worry. Planting, weather, and yields will be good. Empty bins will refill.”

Beef, Milk Sectors Hard Hit

The impact of world grain shortages means that the animal protein supply in the food chain is among the first food-types to suffer drastic decline. Shortages and spiking prices for corn, hay, soy, and other feed for animals are hitting ranchers and dairymen hard, in the midst of drought in southwestern North America, northern Australia, New Zealand, and elsewhere.

Cattle numbers are way down in Texas, Oklahoma, and Kansas. In northwest Queensland in Australia, graziers held a “crisis summit” May 7. In these and other places, ranchers are told that the current system of “markets” must prevail, which means producers are faced with receiving prices below their costs of production.

World milk supplies—for-export are contracting down to nothing. In New Zealand—a major source for milk-product exports—drought conditions have drastically disrupted milk output. World stocks—for-export are now practically nil for whole milk powder, as well as skim milk powder and butter.

In California, the largest U.S. dairy state, over 350 high-yield milking operations were shut down in the last few years, leaving barely 1,500 total, with many in trouble. Last Fall, California dairy farmers protested in Sacramento. On May 1, the State Assembly Agriculture Committee held a hearing; on May 20, the California Food and Agriculture Department plans another hearing on the crisis.

Glass-Steagall, Science

What is required is a radical shift away from the policies that brought us to this pass—the recent five decades of globalized food “sourcing,” and all other kinds of speculative money markets for agriculture, instead of nation-serving food security through credit programs for land, water, and power improvements, parity-based food pricing for farmers, and general support for family farming and processing.

The immediate requirement is to re-institute Glass-Steagall banking, in order to re-establish credit for family farming and agriculture-infrastructure build-up. In this spirit, short-term emergency measures can be launched immediately, to rescue family-farm opera-

tions through grants, credit, and debt moratoria. Although food is scarce, resources can be found to distribute to points of dire need.

The crisis situation for farmers and ranchers in Australia exemplifies what is happening, with varying particulars, in agriculture centers around the globe. The Australian wheat and beef sectors are threatened with ruin; both are critical to the present world food-supply system, as well as domestically. The specifics are reviewed in the accompanying statement, issued May 10 by the Citizens Electoral Council (CEC).

Western Australia (WA) wheat farmer leader Jean Robinson is running for Federal office in the September elections, on a CEC platform to rally for change right now. She issued an emergency petition in April, circulated at a mass meeting of WA wheat growers in Merredin April 10, whose points are applicable, with little alteration, in any of today’s farm crisis regions.

“Measures should include:

“1. Completely separating normal banking of holding and lending deposits, from risky speculative banking. Complete separation can only be achieved through structural changes such as the successful U.S. Glass-Steagall Act of 1933.

“2. A debt moratorium to reorganize the unpayable debt to free food production from usury.

“3. Establishing a new Commonwealth National Credit Bank modeled on the original Commonwealth Bank and/or State Government owned banks, that will direct public credit into long-term investments in strategic industries such as agriculture and into desperately needed physical economic infrastructure. This must be done in order to revive Australia’s collapsing industrial base and economy.” (“Resolution to Save Our Family Farms,” April 2013)

Inherent in the Robinson policy statement for increasing physical-economic productive capacity, is also the outlook that the productive potential in agriculture is unlimited, because of science. The proof of principle in the case of rice was reviewed by Dr. Robert Zeigler, Director of the International Rice Research Institute, in an exciting presentation of December 2012 in Washington, D.C., which is covered in this issue (see below).

The “case of rice” thoroughly refutes the imperial greenie pack of lies that world population has “peaked,” resources are fixed, and the Earth can be saved only by “managing scarcity” and accepting depopulation.

In the United States, the push-back against destruction of agriculture is seen in the ready activation of farm

state legislators to demand that Congress act to re-instate Glass Steagall. The 18 states with such resolutions introduced so far this year, include Minnesota, Montana, Louisiana, South Dakota, and other farm states; in South Dakota, the resolution passed both chambers in February; and in Indiana, a resolution was introduced and passed by the lower House the same day, April 11.

Scale of Grains Crisis

The level of total world grain production (all kinds) required for decent nutrition for all, is roughly double the 2,003 million metric tons shown in Figure 1. This is easily achievable under improved conditions of reliable water, soil fertility, and protection from weather extremes, as well as superior plant and animal genetics.

But at present, the picture behind the snapshot in Figure 1, is of multiple problem areas for all grains and food types.

Part of the current decline in world grains production comes from the weather impact on U.S. wheat. More than half the Winter wheat belt of the southern High Plains remains in drought; on top of that, the region has had late Spring freezing. The harvest here, which takes place later, in June, is projected to be 23% smaller than last year, according to the first U.S. Agriculture Department estimate for this crop season, issued May 10. The far western Kansas wheat counties are disaster areas.

Nationwide, the U.S. Winter wheat (hard, red varieties) could be down overall by 10% at least. The FAO global wheat forecast for 2013 is for 695 mmt, which is below that of 701 mmt in 2011.

This year's world corn harvest is made uncertain by delayed planting in both the United States and China. Wet and cold weather have delayed putting in the crop in Iowa and Illinois—the heart of the Corn Belt. In Iowa, only 8% has been planted, way down from 62% last year (a favorable Spring). This is the slowest start in Iowa since 1995.

Illinois Farm Bureau economist Todd Davis said in mid-April: “There is not a large buffer of corn available to withstand weather or other production-related problems for this year's crop. Planting will start in the Midwest in the next few weeks, and the latest report, if realized, shows ending stocks to be the smallest since 1995-96” (From the American Farm Bureau Federation, April 10, 2013. “The Voice of Agriculture” report on line.)

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Australia Without Family Farmers Is Not ‘Viable’

The Citizens Electoral Council of Australia issued the following media release to summarize the scope of the agriculture crisis in the nation—a threat to the domestic and world food supply. The CEC is mobilizing for emergency action (www.cecaust.com.au).

May 10—Right now, as a consequence of political decisions, many thousands of family farmers across Australia face immediate ruin:

- 600-1,200 family farmers in Western Australia's (WA) eastern wheat belt are under siege by the banks and both the state and federal governments, which are conspiring to starve the farmers of credit, to force them off the land and/or privatize and sell their cooperatives to foreign grain cartels.

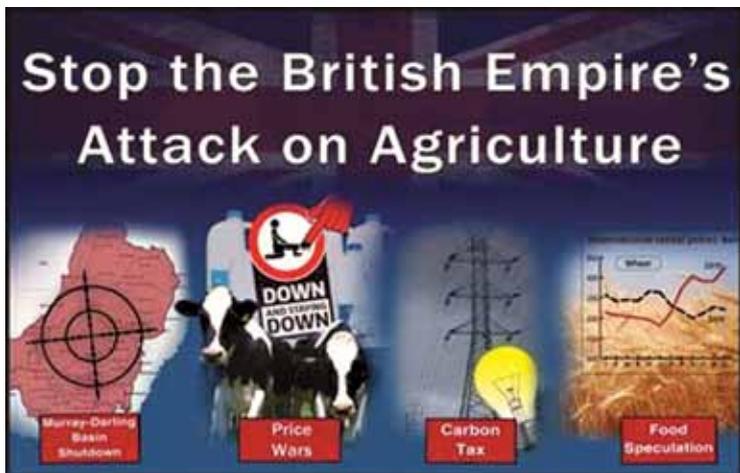
- Many hundreds of beef producers in northern Australia have been blindsided by the government's outright sabotage of their export markets, which has caused a glut of beef on the domestic market that has driven down the price of cattle from A\$500-1,000 per head, to as low as A\$20, leaving hundreds of producers bankrupt and suicidal.

- Hundreds of fruit growers and dairy farmers in northern Victoria are getting smashed by the government's policy of free trade, which is forcing the SPC Ardmona cannery in Shepparton to drastically reduce production, and has driven the price of milk way below the cost of production.

However, the government, which has caused these crises, is hammering the farmers with the message that they aren't “viable.”

The CEC exposed, in its June/July 2012 *New Citizen* newspaper, the fact that the number of genuine family farms in Australia as of 2010 hit the dangerously low figure of 40,000, down sharply from 120,000 two decades earlier in 1991, and from 204,000 in 1953.

If the people of Australia tolerate their governments, of both major parties, continuing to aggressively drive family farmers out of agriculture—whether for reasons of free trade, banker-rationed finance, or green fascism



A Citizens Electoral Council organizing poster.

(including that of the vegetarian militants who purport to speak for animals)—they face the very real prospect that *their nation* will not be viable.

The present crisis is a mortal threat to Australia's food security. Corporate agribusinesses would be lying in wait to acquire some of these farming operations, but they do not guarantee a nation's food security. Agribusinesses only produce when it suits their bottom line, and often on contract to global supply chains, regardless of domestic food needs. Only strong family farms that produce reliably, prioritize the domestic market, export surpluses, and nurture the land to pass on to future generations, guarantee a nation's food security.

The present crisis is also a threat to the global food supply. An estimated 1 billion people worldwide go hungry every day, while the two sectors where Australian family farmers are being smashed, wheat and beef, are the country's two biggest agricultural exports.

Australia is the second-largest wheat exporter, after the United States, and WA's wheat growers produce the majority of the Australian crop. The government is letting the banks destroy WA's growers, at a time when drought and freezing temperatures in the United States are expected to reduce that nation's 2013 Winter crop by 25%, and dry conditions are reducing wheat production in Russia, the world's third-largest wheat exporter.

Australia's live beef exports to Indonesia significantly increased the protein consumption of millions of low-income people in that nation. Australia's meat export markets in the Middle East include some of the nations where food shortages triggered the overthrow of national governments in 2011. Australia's self-in-

flicted crisis exacerbates a global shortage: U.S. beef production, which represents one-fifth of global output, is expected to fall sharply this year.

There is no reason for any presently struggling wheat grower, beef producer, fruit grower, or dairy farmer to lose their farms. It is entirely within the government's power to immediately:

- declare a moratorium on farm foreclosures;
- order the banks to re-negotiate farm debt at lower interest rates;
- establish a government agency for farmers to borrow at low interest to finance their crops and capital upgrades;

• impose tariffs on canned fruit imports, and announce penalties on Coles and Woolworths for further abusing their market dominance by sourcing fruit and vegetables from overseas that are produced domestically;

- establish government-to-government contracts with nations such as Indonesia, to resume the supply of beef, with our government guaranteeing both the supply to Indonesia, and the price to Australia's producers; such contracts should also be sought in the Middle East and Africa.

The only long-term solution, however, is that the government must enact a Glass-Steagall separation of essential banking services from speculative investment banking, so as to protect and prioritize credit for agricultural production. The government must then establish a national bank, owned and managed by the government, which will direct long-term credit into strengthening and expanding the nation's food production. This would include, for instance, investing in more domestic meat-processing capacity, of which the present crisis has shown Australia to be woefully short.

Citizens Electoral Council leader Craig Isherwood declared today, "The decision before the government is not a business decision, it is a national interest decision. Any family farmers that are forced off the land by this crisis will be the clear victims of the government's deliberate intention, for which the government must be held to account.

"That is up to the Australian people," he continued. "If you understand the importance of family farmers to Australia's viability as a nation, and are willing to take responsibility to fight for the nation's future, join the CEC."

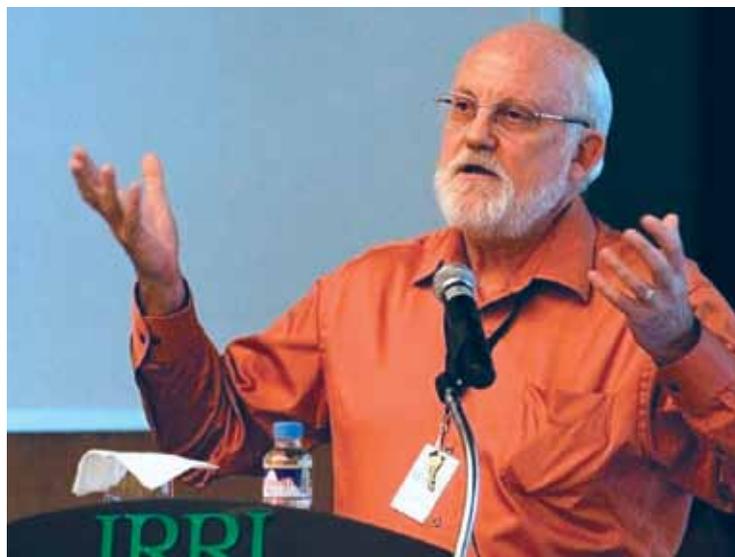
Rice: Scientific Breakthroughs To Transform Agriculture

April 8—*This is the conclusion of a presentation by Dr. Robert Zeigler, Director of the International Rice Research Institute (IRRI), on Dec. 10, 2012, in Washington, D.C. It was hosted by the Center for Strategic & International Studies (CSIS), on the topic “Promoting Sustainable Rice Production To Meet Growing Challenges.” The first part, concerning the importance and history of rice, appeared in EIR, May 10. These are extensive excerpts from the transcript, with sub-heads added.*

We are going to be needing rice varieties that deal with the problems that climate change has thrown at us. We’re going to have production practices that are much more efficient in the use of resources, and that require less labor; and we’re going to need systems that will sustainably provide us the higher yields that we know we need to realize.

I started out by talking about how wonderfully genetically diverse rice is, and I just cannot overestimate [the value of] that resource that we have at our disposal. It is the secret to solving many of our problems in the future, and we have, in our institute, a collection of over 110,000 different rice varieties.

It’s a tribute to the vision of the people who preceded me, that they realized that there are thousands of rice varieties being grown around Asia—most of them are fairly low-yielding—but they recognized that each probably had good traits. They also recognized that if they were successful in creating these modern varieties, that these traditional varieties could be lost. And these traditional varieties are the result of thousands of years of farmers’ selections. And so, they systematically went out and collected, all across the world, the diversity of rice. And they knew that they didn’t have the tools to use that genetic diversity in the 1960s and 1970s, but they had enough faith in science to know that some-



IRRI

“We’re trying to compress a million years of evolution into 20 years.”

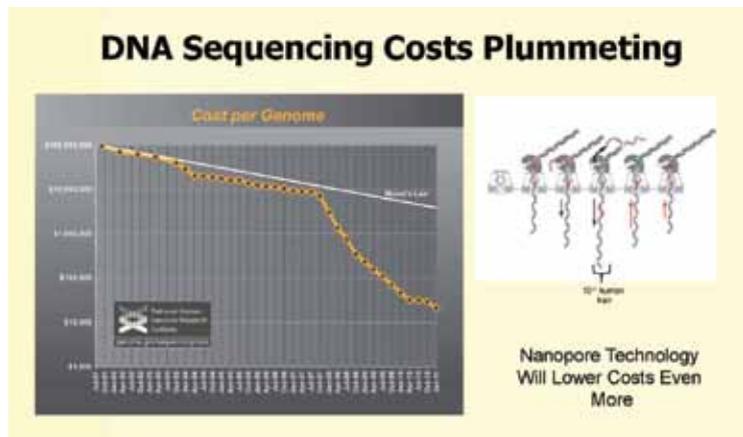
time, and probably not in their lifetime, those tools would be developed, and that we could tap the diversity of those traditional varieties.

And that is where we are today. And for the reasons that I mentioned, less than 5% of this had been used in breeding programs; but we have actually now developed at IRRI—and I won’t go through this—basically, a very well-designed program to try to understand the genetic diversity that is within the rice species and its relatives, and then analyze that in a way that we can take that through to solve real world problems.

So, it’s a way of linking very basic discovery research, that’s publishable in journals like *Science* and *Nature*, but is directed toward solving real world problems. And I’ll give you some examples of that.

One of the key breakthroughs that is giving us the ability to tap into the genetic diversity of rice, is the plummeting cost of DNA sequencing. You’re all familiar with Moore’s law: that every 18 months, the power of computing doubles, or the cost is cut in half—the

FIGURE 1

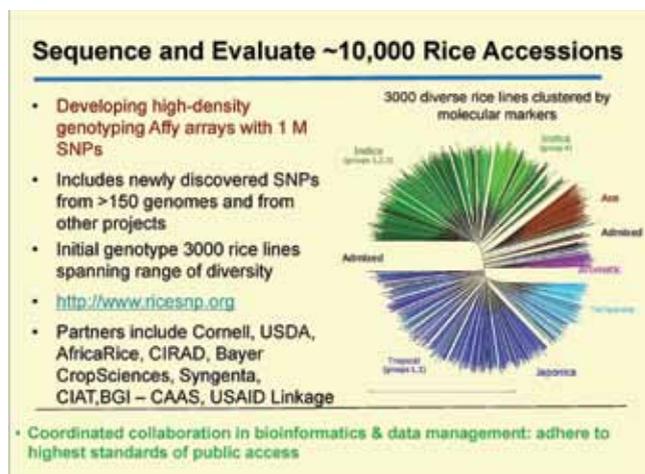


Courtesy of Robert S. Zeigler

DNA sequencing is following that law pretty closely. Recently the cost has just fallen off the roof, fell over, dropped (Figure 1), and it's becoming really, really affordable to do a large amount of sequencing. And there's a next generation of sequencing that is coming, that will allow us to do the human genome for \$100; a rice genome for \$25. So things are completely transforming before our eyes.

And we have already started to analyze the genome of rice. We're embarking on a program to sequence 10,000 rice lines from our gene bank. I keep on my desk a 2002 issue of *Science* magazine, where the cover of that magazine is a beautifully terraced rice field in China, and it was announcing the sequence of the first rice genome. It had taken over 15 years, it cost millions and millions of dollars, and I keep it there as a reminder

FIGURE 2



Courtesy of Robert S. Zeigler

that we're talking now about sequencing 10,000 rice lines in about two years.

And we've got a good start (Figure 2). Just this pretty little diagram shows how—the different lines and the branches on it are more distantly related individuals within rice, and we're starting to peel back an enormous amount of diversity; and as we understand where rice fits in those different clusters, we can ask more sophisticated questions about traits and performance.

A very important part of the rice genome work that we do to understand this genetic diversity, are the wild relatives. We have in our collection—there are, I think, 13 different genomes of rice, relatives of rice that all evolved from a common ancestor. We have all of those in our

gene bank, and they all look like weeds that grow by the side of the road. And the reason is, because they probably are weeds that grow by the side of the road, weeds in the rice fields, etc.

But they also have a lot of very, very interesting traits in them. Some of these have drought and salt tolerance; disease, insect resistance; heat tolerance; even cold tolerance. Now let me try to give you a lesson in plant domestication in a minute and a half.

Lesson: Plant Domestication

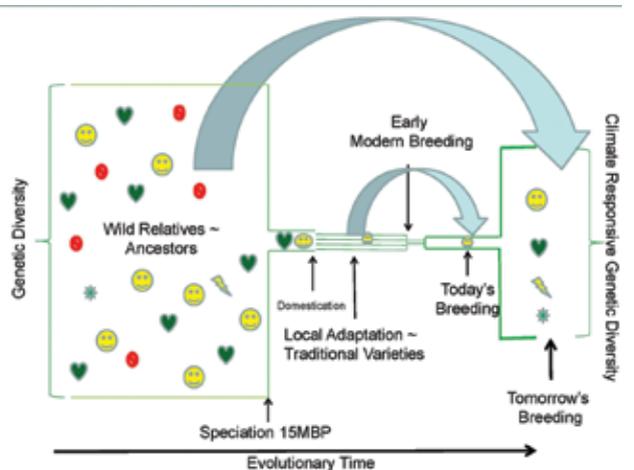
Way back in evolutionary time, there was a set of predecessors to rice. Wild relatives, its ancestors. And they had a whole bunch of different traits (Figure 3). I

FIGURE 3



Courtesy of Robert S. Zeigler

FIGURE 4



Courtesy of Robert S. Zeigler

put these in yesterday—they're really corny, I know. And some of them are really good, some of them are pretty lousy, but there's a whole bunch of different traits or genes that are in there. There was speciation which took place about 15 million years ago, when the ancestors of rice, including its wild relatives, started to diverge.

One of those ancestors was the rise of *Oryza rufipogon*, that was the wild relative from which rice was identified by our ancestors. A few of the good traits were captured. And then, with domestication, we went through a series of bottlenecks, and some of the good traits went with one variety, some with another, but they're all spread out. And then, modern breeding came along, and the bottleneck got even smaller (Figure 4).

So, as we domesticated—because we didn't know, our ancestors couldn't select what they couldn't see or directly experience and feel—they left behind a lot of things that were good. They just didn't know they were there. They were trying to leave behind what was bad as well.

And then, modern breeding narrowed that pipeline even further. Today, we're going back into the landraces that generated those 3,000 lines that I showed. We're trying to bring some of those good traits back, that were left behind, but what is really, really, really exciting, is that we now have the genetic tools to go back into the wild relatives, and bring back a whole set of

traits that were completely left behind in the original domestication event. And that, to me, is one of the most promising breakthroughs.

And just this year—and I'll show you an example of that—we finally made the last crosses; we are now able to make viable crosses between every single *Oryza* species, and domesticated rice. And basically that opens up a huge reservoir of genetic resources for us.

Traits that Came Over

Question: Do you want to just talk a little bit about the traits that came over?

Zeigler: Okay. The traits that came over were [related to] yield; were the ability of the rice grain to stay on the head, rather than falling off—because for a weed, or a wild plant, distributing grain is the best thing; for a farmer, it's the worst thing for it. Grain size. Something called shattering, the ability for the grain to stay fixed. The ability to flower at a certain time. Many different traits like that.

Here's an example of a really tremendous breakthrough (Figure 5): *Oryza sativa*, which is the rice species that has something called the A genome, and it's a diploid. This *Oryza coarctata* is a tetraploid, and has two different genomes that are very different from rice's genomes. Here's a modern rice variety grown in normal water. Here's a rice variety grown in what is salty water, almost seawater. Here's its little wild relative growing

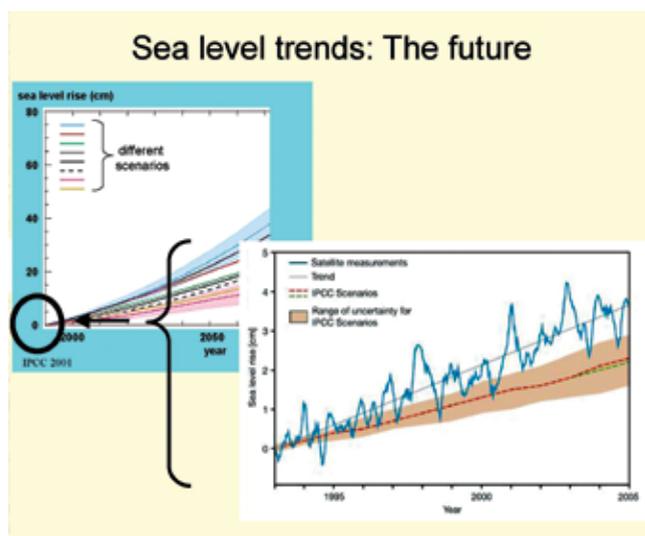
FIGURE 5

Transfer of natural salt tolerance from *Oryza coarctata* (KKLL genome), a wild species that grows well in brackish water



Courtesy of Robert S. Zeigler

FIGURE 6



Courtesy of Robert S. Zeigler

quite happily in what is effectively seawater. And our breeders—well, one and his team—have actually succeeded in making a cross between the domesticated rice and this wild rice, and it’s looking pretty scrawny, but it’s a whole lot better than being dead, okay?

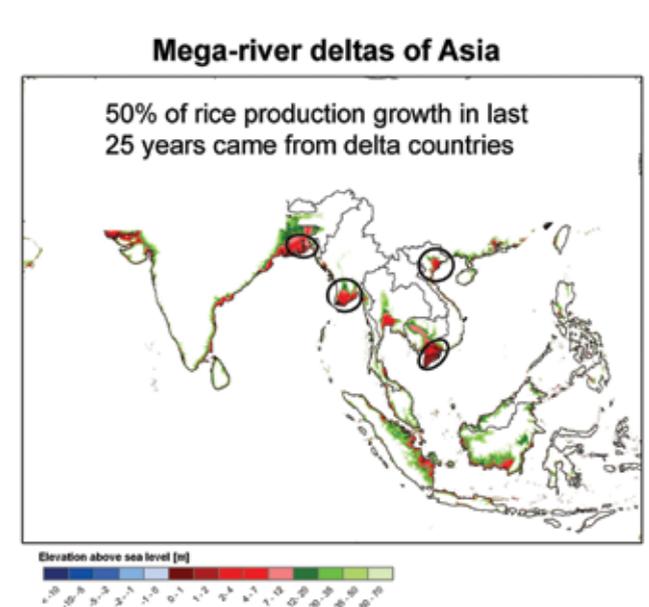
And this is something that required just an enormous amount of work. They do something called embryo rescue. They do the crosses. They do thousands and thousands and thousands of crosses. They look at each one under the microscope. They see where there is a little bit of signs of life. They cut that out, they put it on a hormone-rich growth medium, and if they’re lucky, a plant grows. To get that one plant—this one is the second from the right—they had to do 15,000 embryo rescues. They got one plant.

So, it is a tremendous investment. But once you’ve got it, then you’ve got a bridge to go back, and it’s just an enormous breakthrough. I get all goose-bumpy about it.

And that’s really important, because if we look at sea-level rise—this was the worst-case scenario of sea-level rise in the IPCC [Intergovernmental Panel on Climate Change] study in 2001 (Figure 6). Here’s where we are today. Sea-level rise is actually worse than was predicted in the worst-case scenario.

And sea level is pretty important, because rice is grown across Asia in these mega-deltas, and a delta is, by definition, at sea level (Figure 7). And so if sea levels rise, we have more salt water intrusion. So, we’re

FIGURE 7



Courtesy of Robert S. Zeigler

going to have to deal with salinity in a big way, and I believe we have the tools to do it. People thought it would be impossible, but I think that is the case.

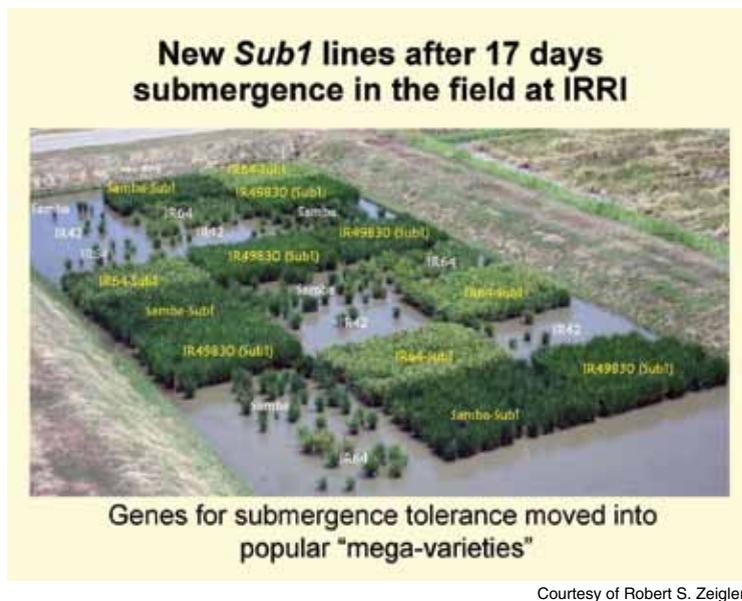
Flood and Drought Tolerance

Now, associated with sea-level rise in some areas, and also a problem rice farmers have been facing since time immemorial, is flooding. And we have very large areas that are exposed to floods every year. You’ve read about them in Thailand last year, but they are events that occur on a regular basis; about 10 million hectares per year are lost to floods. Even more favorable areas will experience short-term flooding, so it’s a problem. And our breeders identified rice material in 1978, from eastern India, that was tolerant of floods. You could submerge it and it would survive. And they spent a couple of decades trying to get it into a rice variety that people would like to eat, and would be worth growing.

Unfortunately, they spent two decades or more trying to do this with virtually no success: low yields, poor grain quality. They produced the first variety they thought was good, and they gave it to people, and they said, this rice is so bad that the dog wouldn’t eat it. And, so, back to the drawing boards, so many times.

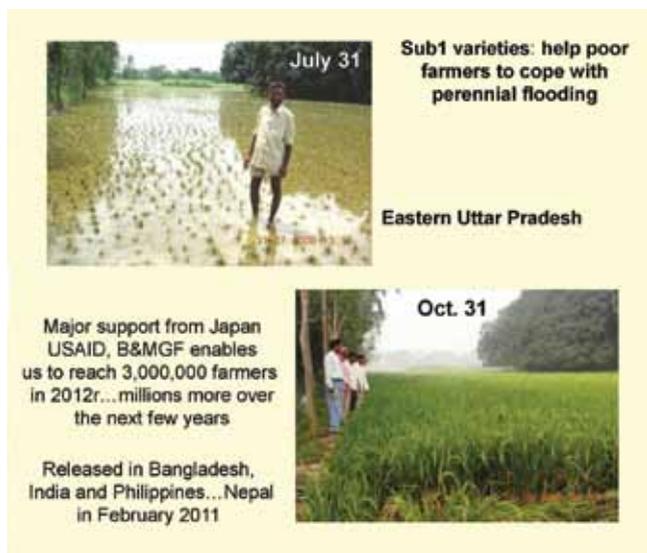
But eventually, using some molecular techniques—non-GMO, sad to say—they were able to identify the

FIGURE 8



Courtesy of Robert S. Zeigler

FIGURE 9



Courtesy of Robert S. Zeigler

gene in that, FR 13A, and move it into backgrounds that farmers liked, the varieties they liked.

And here's an illustration of an experiment in IRRI, where that gene, called Sub 1, Submergence 1, is put into the background of a number of highly desirable rice varieties (Figure 8). The varieties without the gene in it are in white, and ones with it are in yellow. You don't need to be a statistician to tell you which one is working, and which one isn't.

We took that out to eastern India, in 2008, and put it out in this farmer's field—we just had a couple of kilograms, that was it. This farmer's field experienced two, possibly three floods (Figure 9). His neighbors basically laughed at him, and told him that he should plow that up. That's what that field looked like on Oct. 31. As expected, it completely recovered.

And we got very good support from the Bill and Melinda Gates Foundation, USAID and Japan, and this variety is now reaching 3 million farmers in South Asia this year.

I'm going to go out on a limb, and people are always talking about how we need a second Green Revolution. I have gone on record, today, and in a letter to the Gates Foundation, I'd say that the second Green Revolution has started; that it started on July 31, 2008 at 1:17 in the afternoon, when this picture was taken, and that farmer decided not to plow up that crop, and

give it a chance.

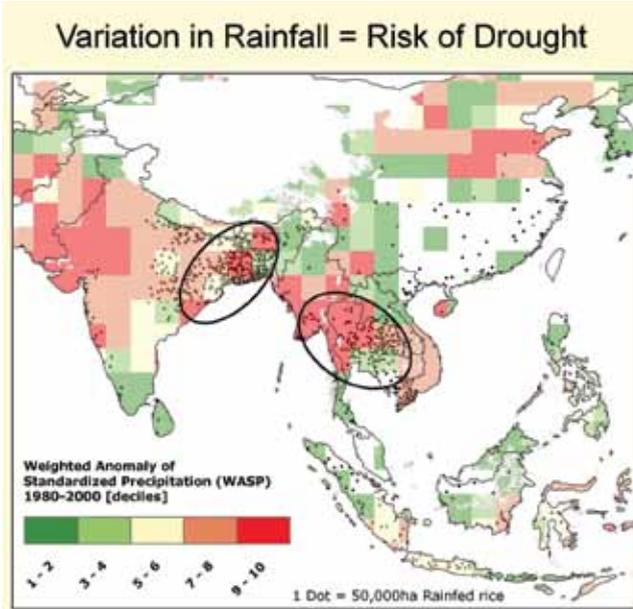
Now, drought, another problem facing rice farmers (Figure 10). This is an example of areas that are expected to have much more problem with drought in the future. We've been working quite a bit on that. We just got back some data this year from eastern India, and we've got rice varieties that have pretty reasonable drought tolerance—not quite as spectacular as the flood tolerance, but better than a kick in the teeth. And the farmers really like it. They like the way it tastes. Interestingly enough, the buffalo really like the straw—they seem to prefer the rice straw. So, it may end up, we might have a two-fer, in which case we could have improved the milk production; and what's best is, our breeders have combined these drought tolerance genes with flood tolerant genes of the same variety.

When I joined IRRI in 1992, I headed up a program that was focused on these very difficult environments. One of our breeding targets was to develop drought- and flood-tolerant varieties in the same variety. People thought we were completely nuts. It was 20 years in the making, but it's been done. And it's again an enormous breakthrough.

Poor Soils, and 'Convenient Convergence'

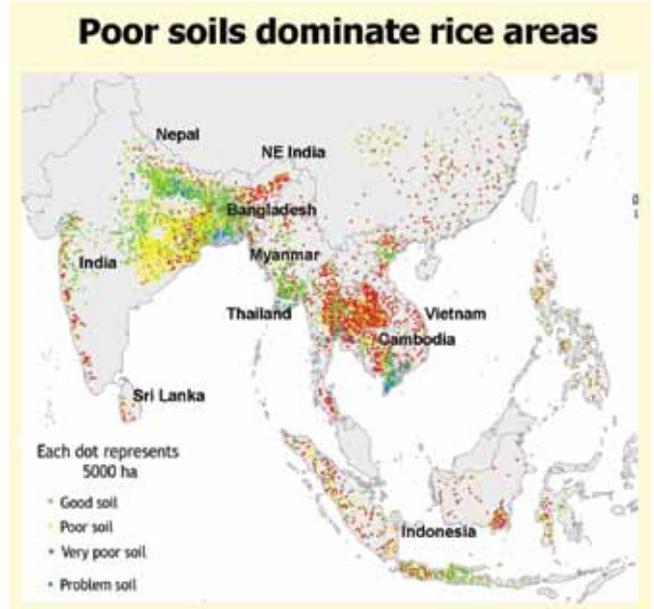
Poor soils (Figure 11): Another problem—the take-home message here is that green is good, all other colors are bad—that is the problem across very large areas of

FIGURE 10



Courtesy of Robert S. Zeigler

FIGURE 11



Courtesy of Robert S. Zeigler

rice production. Our scientists just published a paper in *Nature*, last September, in which they were able to demonstrate that they have actually isolated the gene that does confer tolerance to low-phosphorous soils, and it is related to root growth. And so they've got a trait, and a mechanism, which is extremely important.

The Sub 1 gene was published in *Nature* in 2006, I believe, and I don't want to go into this, but it's a pretty significant breakthrough, and it's nice for rice, but problems with phosphorous are really serious for maize and legumes. And if we can get that gene from rice to function in maize and soybeans or Phaseolus beans, it could have a massive impact on agriculture, particularly in Sub-Saharan Africa.

So, when we look at climate change in terms of rice varieties, we've got a number of traits that need to be improved, and we're making very good progress on a number of them.

And, way back in the day, back in 2005, it occurred to me that the challenges that are being presented to us by climate change, are the same ones that the poorest farmers experience every day in their fields. And I came up with the term a "con-

venient convergence"—and this was before Al Gore came out with his show, so then, I felt that people would think I stole it from him. He didn't steal it from me. Anyway, so I can use it again now.

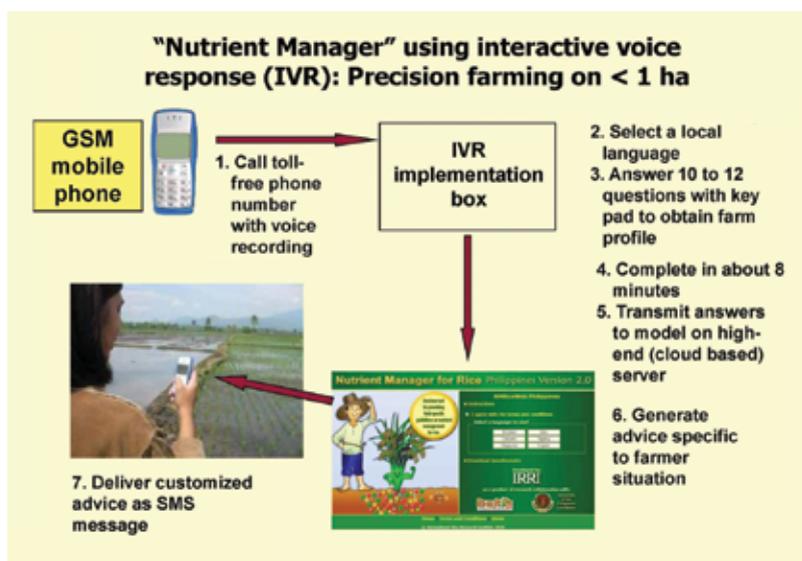
But it is. It's a very "convenient convergence." We can deal with problems of today's very poor people, at the time as we're anticipating problems that will be more widespread in the future.

FIGURE 12



Courtesy of Robert S. Zeigler

FIGURE 13



Courtesy of Robert S. Zeigler

tions about their fields, and get a specific fertilizer recommendation for their particular field. It sounds too good to be true, but it's working actually very, very well (Figure 13).

And we're actually rolling out apps based on html-5 that will work on any platform, and this is going out. It's already rolled out in the Philippines. It's in the last stages in Indonesia. I was with the Secretary of Agriculture in India; he wants a big effort to try this out in India, to see if we can get site-specific nutrient management in India.

So, again, translating many years of research into ways that they can be used by farmers. And we're developing country-specific, and really, region-specific applications of this across the region, and even in West Africa.

Crop Management

I'd like to switch gears a little bit towards crop management. Since about the early 1990s, we started asking questions about, how do you tell how much nutrient a rice plant needs in a particular situation? So, my colleagues set up a number of experiments across Asia. They're very carefully monitored, and we asked the question: What is the right amount of fertilizer for rice, and how do we know what it is?

Now, I just want to highlight something here before I forget. This is work that was started in '92. Remember, the work that identified the impact of night temperatures started in 1963. The Sub 1 work started in 1978. So, we're talking long-term programs here. You don't have quick fixes to big problems.

Anyway, they started to look at these, and they came up with all kinds of great tools, and great science, and came up with tools that they thought were available for farmers, and the problem was, that it was great stuff for scientists, but no farmer ever adopted any of it. It was just too complicated for them (Figure 12).

So what they've done is, they recognized that, while farmers don't necessarily like to flip through books, and can't access the Internet, almost all of them had cell phones now. And basically, they connected some very, very sophisticated backroom software to cell phone apps, where farmers can actually work with an ag agent, and answer very few, a dozen or so ques-

But to me what's really exciting about this cell-phone technology, or smart-phone technology, is, I think it is a transformational technology, in that it can replace the defunct extension systems that we see across the world. The extension systems were built in the 1950s and '60s; they were great at the time. They're almost without exception in very bad condition now.

What I see is the development of an ag service industry in the private sector, with small entrepreneurs; and they will be able to build business models on this. And we've got a lot of interest in access, not just to a fertilizer recommendation, but to credit, access to credit linked to a fertilizer recommendation; access to crop insurance. I think the world is the oyster of innovators who want to create new business opportunities for themselves, and opportunities for farmers. So, I'm pretty excited about this.

And I was inspired by how a farmer can better apply fertilizer to his or her crop, but it's growing organically to answer a whole other, much broader array of issues.

Now, just a word, to let you know: In a knee-jerk response to the food crisis we had a few years ago, there's been a lot of pressure by governments to increase rice production. And it's almost a panic. And so that pressure has transformed into, instead of growing one crop a year, grow two; instead of growing two, grow three; add more fertilizer, spray pesticides, get as much as you can out of the field. And we're actually

finding what we would have predicted: it's actually causing severe disruption in the fields.

So, we can't just go whole hog-wild, and get the highest yield we can, because we disrupt the ecological balance in the rice paddy. I could talk for an hour about that, but I just wanted to let you know that we're not blindly thinking about yield. We know that it has to be done in a sustainable way.

And after forever ignoring rice production, the private sector is starting to pay attention. And we've been working with some companies to develop standards of best practices. We know that they're taking a commercial interest in rice; that's something completely outside our control. But if the big guys are going to move into it, at least there should be some standards by which their participation can hold them accountable.

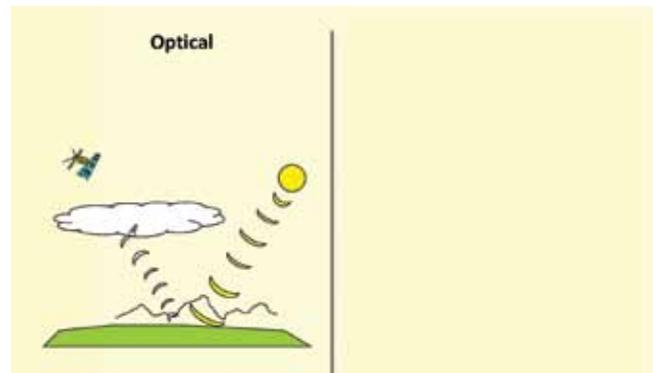
And so we're working to develop, with UNEP [United Nations Environment Program], a set of best practices, and then develop some kind of program—it's still very unclear—where, as multinationals and regional companies enter in more aggressively into the rice business, they actually have some standards that they can try to enforce.

Policy Questions: Global Rice Supplies

Now, when we think about global rice supplies, which I think about a lot, it's a big policy question. What do policymakers need to know? And when do they need to know it? And we need a lot of real-time information, if we can get it. But we don't. What we have today are data that are two years old, and it's very difficult to make immediate policy decisions. In particular, we need to know, what is the area we expect to harvest this year? And when will it be harvested? When was it planted? What do we expect the yield to be? Do we have any estimates of that?

And we're working on remote-sensing tools that are allowing us to ask some very, very interesting questions, and get some more interesting answers. And up until recently, we've been dependent upon optical satellite imagery, where you're depending on reflected sunlight, and if it's cloudy, you don't see anything. Remember, rice is grown in a monsoonal environment, and it's cloudy most of the time, so you're not seeing

FIGURE 14

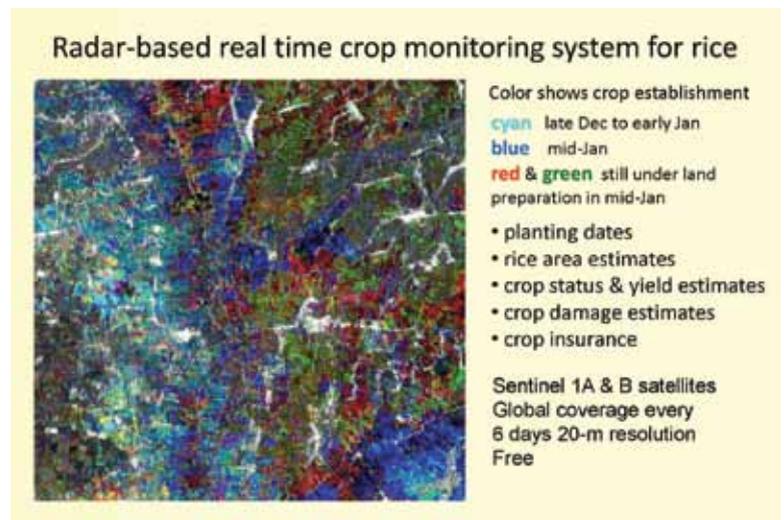


Courtesy of Robert S. Zeigler

anything. So it's very difficult to get remotely sensed imagery (**Figure 14**).

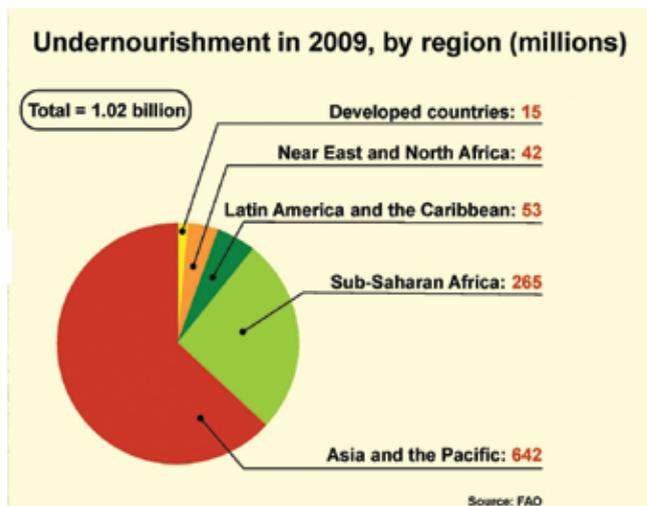
But what has come on the market now, that's affordable, are radar satellites, or microwave. Basically, they're cloud penetrating; it's like the cloud isn't there. It bounces back. You get a signal from the Earth, and by the very nature of rice, and the differences between bare earth and vegetation and water, through radar imagery, you can map out very accurately where rice is growing. And we're rolling that out in the Philippines, and this is what our radar maps look like (**Figure 15**). Each of those little tiny pixels is a rice field, and we're down to about a 20-meter resolution, which is much smaller than any rice field, and the colors are different

FIGURE 15



Courtesy of Robert S. Zeigler

FIGURE 16



Courtesy of Robert S. Zeigler

dates of planting. And we know that when you plant at different dates, because of day length and sunlight, and all the other things that we've known about for years, you've got a pretty good idea of what the yield's going to be.

We're working with a Swiss company, a bunch of geeks in Switzerland, to work out the algorithms that translate this incredible volume of satellite information, and the European Space Agency has launched two satellites, Sentinel 1A and 1B. 1A is radar imagery, and the imagery is going to be completely free, and we're going to get coverage of the Earth every six days at that very fine resolution. So, we're going to have a very dynamic picture of what rice production is like in the world, and that is going to be an incredibly useful tool.

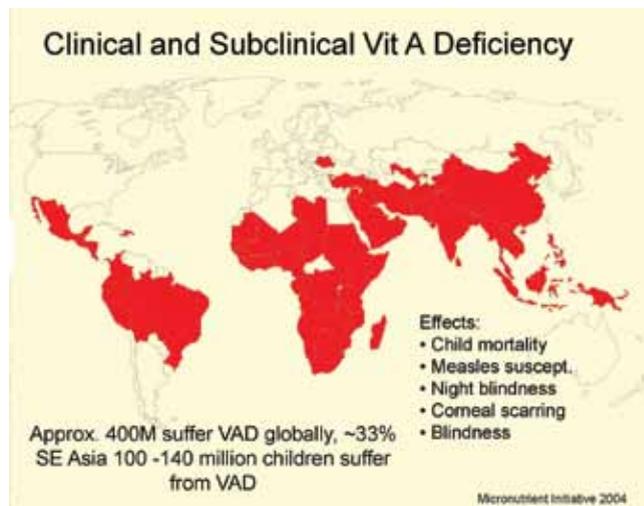
That will feed into a global rice information system that we're developing, that will allow us to get a very big picture of what's happening with our global food supply. And it's going to feed into policymakers, but obviously, people who trade rice, etc., will use that information. We talk to our Indian and Chinese colleagues, for whom these data, rice area, etc., are state secrets, and they sit there scratching their heads about what does this mean, as this information comes on line and becomes available.

Nutrition: Golden Rice

Now, just a quick word about two big areas that I want to make a point about. One is nutrition, and the other is really pie-in-the-sky stuff.

Undernourishment is obviously a horrible problem

FIGURE 17



Courtesy of Robert S. Zeigler

that I talked about earlier, a consequence of poverty. Asia and the Pacific—despite the headlines and pictures of Sub-Saharan Africa—Asia and the Pacific are really where the problems still are in this world (**Figure 16**).

Vitamin A deficiency is particularly bad (**Figure 17**). In Southeast Asia alone, anywhere from 100 to almost 150 million children suffer each year from vitamin A deficiency. And the consequences of vitamin A deficiency are well known, and they are severe. Night blindness: several hundred thousand children a year go blind from vitamin A deficiency. A year later, half of those children are dead. It's a horrific problem that we've been trying to solve with supplements for decades, and it is still an enormous problem.

In 1986, a friend of mine suggested that if we could develop a rice that had vitamin A in it, or beta carotene, to be more precise, we could solve one of these horrible problems. Ingo Patrykus started doing this in the late 1980s, out of ETH (Swiss Federal Institute of Technology) in Switzerland, and actually did create golden rice in the late 1990s, a prototype (**Figure 18**). It was GMO transgenic; and the question was always, if you could produce the golden rice, would it produce enough vitamin A to be nutritionally significant? And Greenpeace had a field day. The original announcement was that the rice produced a very small amount of vitamin A, of beta carotene, but a small amount is a heck of a lot better than zero. And basically, it was a proof of concept.

Well, our colleagues kept plugging away to increase the levels of beta carotene, and now, we have very good

levels of beta carotene in rice. A study that came out last August, published in the premier nutrition journal, the *American Journal of Clinical Nutrition*, demonstrated that the beta carotene in golden rice, was as effective as the dissolved beta carotene that is commonly distributed as supplements. And that one bowl of golden rice, normal serving size, would provide more than half the vitamin A required. So, it's an enormous, enormous demonstration.

We're working with the Bill and Melinda Gates Foundation, and the Helen Keller International, to roll out golden rice, in late 2013.

Again, remember, the idea started in 1986.

Improving Photosynthesis

Now, just one last pie-in-the-sky sort of thing—back to a little evolution: The grasses are all related, but they have a different kind of photosynthesis. There are crops like maize and sugar cane that have a more modern photosynthesis, which is how they capture the sunlight, and convert it to grain. Rice has a more primitive photosynthesis.

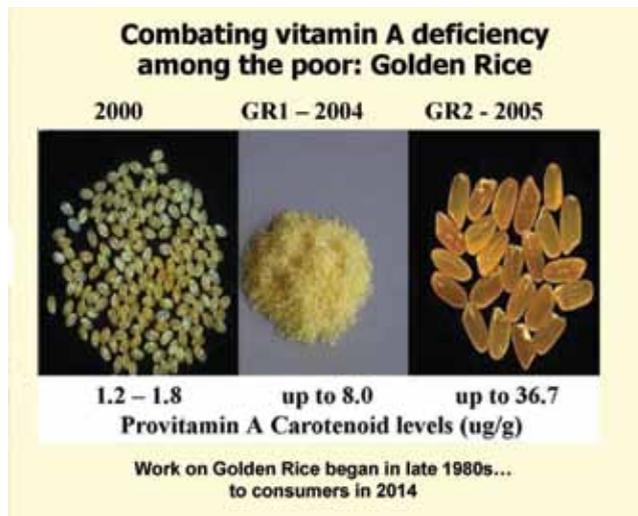
The newer, C-4 plant—which this is called in maize—for the same inputs, you can get 50% more yield, much higher fertilizer-use efficiency, much higher water-use efficiency. So, we are undertaking an effort to convert rice from a photosynthesis of a C-3 plant to a C-4, and that is a real pie-in-the-sky sort of thing (**Figures 19 and 20**).

And basically, we're trying to compress a million years of evolution into 20 years. Basically, can we direct evolution of photosynthesis in the new rice plant?

I won't go into this, but it's quite a complex undertaking; but what's very interesting, and what gives us reason for optimism, is that the trait of that different photosynthesis evolved independently over 60 times in the plant kingdom (**Figure 21**). So, it can't be that difficult. Sixty different times it evolved. It's like having different kinds of eyeballs—not just eyeballs, but entirely different kinds of vision, converging and developing, independently around, which actually has happened.

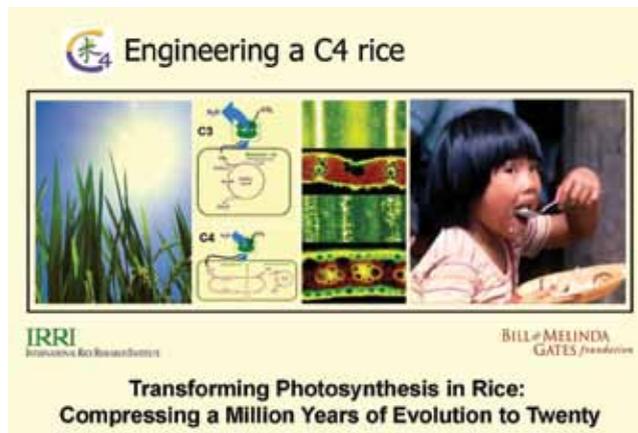
So, again—this is kind of a geeky way of saying it—but Roland Sage has said that with this kind of thing happening, it's one of the most amazing examples of convergent evolution in history. So, as I said, it can't be that difficult. We're just going to try to accelerate it a little bit.

FIGURE 18



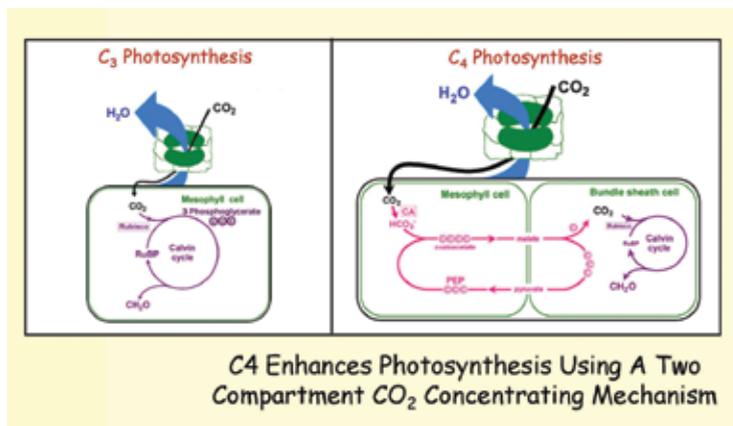
Courtesy of Robert S. Zeigler

FIGURE 19



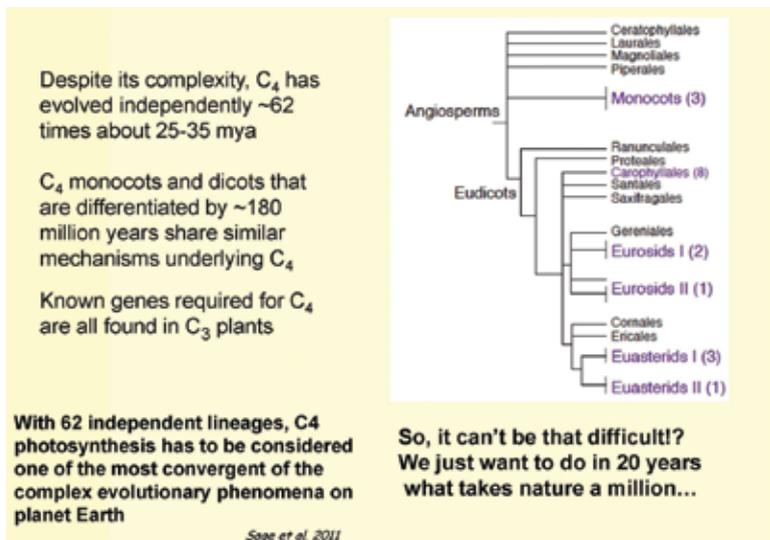
Courtesy of Robert S. Zeigler

FIGURE 20



Courtesy of Robert S. Zeigler

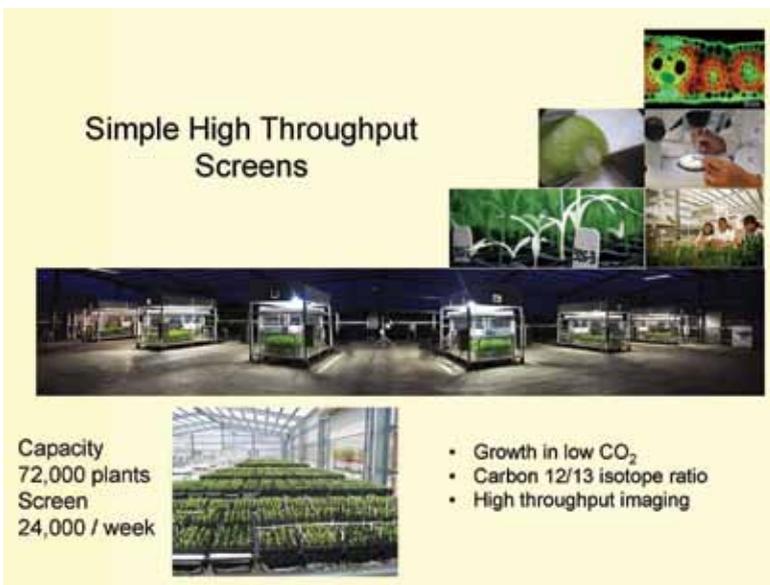
FIGURE 21



And we know that all the pieces, all the parts, are in rice and its relatives already; we just have to put them together to get them to work in the right way. It's some pretty neat stuff, and I won't go into it, but we've had to build some entirely new kinds of equipment to do this (Figure 22).

But the best part is, we've brought together the finest minds in photosynthesis around the world. We were able to convene the people. These guys were

FIGURE 22

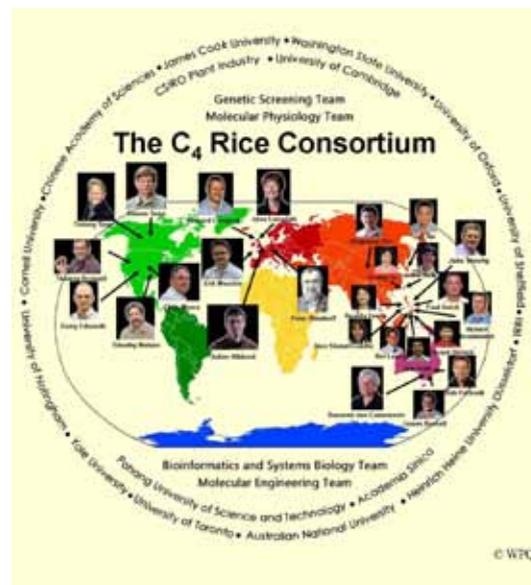


awash in money. They've got so much NSF [National Science Foundation] or equivalent money, they don't need to work on this project, but the opportunity to see their best science transform agriculture is really exciting to them, and it's great actually meeting at IRRI with this group (Figure 23).

So, just to summarize: Pretty obvious. We've got a lot of work to do. We have to address all the problems that climate change is throwing at us, plus our overall problems. History gives me a reason for optimism. I think that if we make the right investments, we can actually solve a lot of these problems, but it's got to be done by a next generation of rice scientists. Old guys like me are not going to do it. And we need a good link between, I think, science and policymakers, so that policymakers see that science is a worthy investment.

And we really need to excite the next generation of scientists, that agricultural plant science research, agricultural research, is cutting edge research. You don't need to go into finance. You don't need to go into biomedical pharma; you can actually have a tremendous career and gratifying life in agricultural science. So, with that—I went on probably longer than I should have—but I just wanted to share some of the exciting work that's happening. It's a great time to be involved in research.

FIGURE 23



ISRAEL STRIKES SYRIA

Superpowers Make 11th-Hour Effort To Avoid Global War

by Jeffrey Steinberg

May 12—When Israeli airstrikes against Syria one week ago brought the Middle East, and the world as a whole, to the very edge of war, high-level circles in Russia, the United States, and China intervened at the 11th hour to prevent an eruption of a general conflict. The clearest indication of this war-avoidance effort was the May 7 Moscow meeting of U.S. Secretary of State John Kerry with Russian President Vladimir Putin and Foreign Minister Sergei Lavrov.

Following a three-hour, closed-door discussion, Kerry and Lavrov announced that the U.S. and Russia will convene a conference before the end of May, to bring together the Syrian government and the opposition to negotiate a ceasefire and succession plan based on the June 2012 Geneva framework. That framework was signed by the U.S., Russia, Britain, France, Turkey, Qatar, and other nations with the intention of bringing the two-year conflict to a peaceful conclusion. However, in the intervening year, zero progress was made, as the U.S., U.K., France, Turkey, and Qatar continued to press for regime change, and provided arms and other material support to the rebels, in their effort to bring down the Bashar Assad government.

Recent events, led by the pair of Israeli bombing raids on Syrian government targets, brought the situation to the very edge of a conflict that was sure to spill over into neighboring countries, and would ultimately draw in the three superpowers—the U.S., Russia, and China. Gen. Martin Dempsey, the chairman of the Joint Chiefs of Staff, who is scheduled to visit Moscow in

mid-June, became a target of venomous attack by Sen. John McCain (R-Ariz.) and others who insist that the United States should intervene militarily to overthrow Assad, through the establishment of a no-fly zone, a liberated area, and other measures. Dempsey has repeatedly told President Obama and his national security team that there are no viable military options, and that the U.S. cannot replay the Libya War of 2011 on the shores of the eastern Mediterranean.

Dempsey's outspoken opposition to any U.S. military action was strongly supported today by former Secretary of Defense Robert Gates. Appearing on CBS's *Face the Nation*, Gates said that the so-called "Arab Spring" needed to be re-assessed; that the countries going through this revolutionary process are artificial creations of the European colonial powers who created synthetic countries, divided internally along ethnic, religious, and tribal lines. He reminded viewers that in the past 250 years, the American Revolution was the only successful revolution. He recalled his strong opposition to the no-fly zone in Libya, a dispute with the White House that led to his early resignation in June 2011. He made an even stronger case against any such no-fly zone in Syria, adding that during the time that he was Secretary of Defense, the United States carried out two regime-change invasions, both of which bogged it down in a decade of war.

Kerry's Shift to War-Avoidance

Lyndon LaRouche took careful note of the Kerry meeting in Moscow, as a crucial push-back against the



State Department

Secretary of State Kerry's trip to Moscow, where he met with Russian President Putin and Foreign Minister Lavrov, furthered the prospects for a peaceful solution to the Syrian crisis. Kerry and Lavrov are shown here, at the Foreign Affairs Ministry, on May 7.

momentum towards general war. He observed that Obama is “going down,” and that Kerry is enough of an opportunist to recognize that fact and move into the war-avoidance camp. Indeed, in Moscow, Kerry made a strong case for a strategic partnership between Russia and the United States—like the World War II alliance that saved the world from fascism. He emphasized the grave danger of war, and made clear that Washington and Moscow would work in partnership to bring the warring parties to the table to end the Syria crisis through diplomacy, not war.

Not everyone was pleased with the outcome of the Moscow meeting. British Prime Minister David Cameron raced off to Moscow, and then on to Washington, to insert Britain in the middle of the plans for the new Geneva meeting, unquestionably to sabotage it before it takes place. Turkish Prime Minister Erdogan also jumped into the fray, continuing to assert the now widely discredited claims that the Assad government had used chemical weapons against the Syrian people.

Even after UN investigator Judge Carla Del Ponte told the Swiss and British media that preliminary UN findings indicated that the Syrian rebels, and *not* the Syrian Army, had used sarin gas, Erdogan continued to press the lie that Assad had crossed President Obama's “red line” on the use of chemical weapons. Even as the charge that Assad has used chemical weapons was discredited, Erdogan continued to stoke the fires against the

Syrian government, blaming a May 11 terror attack in southern Turkey on Syria, despite the fact that the only parties arrested were Turkish nationals.

The Turkish prime minister is to meet with President Obama in Washington on May 16, and he, too, will undoubtedly press for a U.S. military intervention, and seek to sabotage the joint Russian-American peace effort.

While Israeli Prime Minister Netanyahu insisted that the Israeli missile strikes on targets inside Syria were aimed only at Hezbollah, and were not part of an Israeli intervention on behalf of Syrian rebels, the fact remains that Israel is a wildcard factor in the greater Middle East conflict, and any further Israeli strikes on Syria or Lebanon could be the trigger for all-out war.

War Avoidance Means Dump Obama

In recent weeks, Syrian Army forces have taken back control of crucial choke-point transit corridors, leading to the Lebanese and Jordanian borders. The Syrian rebels have been stymied in the recent period, and following the Kerry trip to Moscow, a number of Syrian rebel leaders denounced the United States for “selling out” their cause, accusing the U.S. of withholding weapons and ammunition from the rebels, thus allowing the Syrian Army to win several battles for strategic territory.

The fact is that the rebels cannot defeat the Syrian Army at this time, and the tide of battle has turned for the time being. Frantic calls for outside military intervention from the likes of Senators McCain and Lindsey Graham (R-S.C.), and other American hawks, have not swayed the Joint Chiefs. And McCain's repeated and pointed attacks on Dempsey, accusing him of misrepresenting the Syrian military capacities because he “does not want to fight,” are only likely to harden the resolve of the military and other anti-war forces to hold their ground. The Gates intervention today is a good example of the intensity of the fight now underway.

With Cameron and Erdogan in Washington this week, the danger is that Obama will ignore the sage advice of his generals and go with the British Crown's war plans. Between Obama and Netanyahu, the war danger remains great. As LaRouche has emphasized, the only ultimately reliable war prevention policy is Obama's removal from office.

EU Prepares Grab For Bank Accounts

by Helga Zepp-LaRouche

May 11—European Union Internal Market Commissioner Michel Barnier is prepared to offer the “Cyprus model”—the expropriation of bank deposits in case of bank failures—to the entire EU, *Focus* magazine reports. After the taboo-breaking and “red lines” that no one ever wanted to cross, it cannot be excluded that soon every bank account, from the first euro on, will be fair game, and the October 2008 promises of Chancellor Angela Merkel and [Social Democratic Party candidate for chancellor Peer] Steinbrück on the alleged government guarantee on deposits up to EU100,000 are just wastepaper today. Rumor has it that such a Europe-wide “bail-in” was already on the agenda at the most recent meeting of EU finance ministers.

Given the “derivatives bomb” of several trillion in outstanding derivative contracts, and even more tension in the financial markets than there was before the collapse of Lehman Brothers, it is not surprising that the publicly owned bank Kreditanstalt für Wiederaufbau (KfW), has simulated the worst-case scenario of the financial system: the collapse of a “too big to fail” bank, with a subsequent global chain reaction and the collapse of the Eurozone. In this case, the printing of money to an even greater extent than is already being done by the central banks would not be sufficient, and it would be necessary to move in on the deposits of account holders and savers. This is the Cyprus model, of which the head of the Eurogroup, Jeroen Dijsselbloem, had spoken. After creeping expropriation by the inherent hyperinflationary effect of the bank-rescue packages—for some time now, the banks’ interest rates have no longer offset the depreciation of their deposits—now we are threatened by open expropriation by means of the bail-in.

The final hours of the euro are here, as shown by the fact that former advocates of the European Monetary Union from both sides of the political divide, such as the former finance ministers of Germany’s Schröder government, Oskar Lafontaine, and of Britain’s Thatcher government, Nigel Lawson, are now simultaneously abandoning the euro and the EU, along with the growing opposition to the euro in virtually every EU member state. French economist Jean-Pierre Ves-

perini writes in *Le Monde*, for example, that the presently emerging German-French tragedy could only be averted with the termination of the euro, since that tragedy has its roots in the euro’s creation.

A Monetarist Coup

There is no doubt that the financial oligarchy is planning to apply the time-tested theory of Carl Schmitt,¹ that only those who can manage the emergency actually have power. Very soon the Draghis and Dijsselbloems of this world will try a coup and issue the threat: Either the EU member states agree to immediate fiscal and banking union, as well as the pooling of sovereign debt, or the euro will break up, with terrible consequences—in combination with the expropriation of bank accounts and savings deposits, of course.

The head of the European Institute of the London School of Economics (the elite of City of London monetarism), Paul de Grauwe, argues that Europe now has no choice other than to push through a fiscal union and pooling of debt, or else to accept the (supposedly) catastrophic consequences of abandoning the euro. De Grauwe had the audacity, writing in the blog [Project Syndicate](#), to compare the debt pooling demanded by the EU with the transformation of war debts from the American Revolutionary War into a credit system by Alexander Hamilton (a measure which played a crucial role in creating the United States as a full monetary, fiscal, and political union—a sovereign nation).

But nothing could be further from the truth, because Europe (which, thanks to EU policies, has become deeply disunited under the heel of the oligarchical bureaucracy in Brussels), and young, republican America are as different as night and day. A European fiscal and debt union is pure monetarism, i.e., the virtually unconditional sacrifice of the real economy and living standards, as we currently experience it with all its horrors in southern Europe. The credit system created by Alexander Hamilton, quite the contrary, was the engine of the industrial revolution and the concomitant dramatic improvement of living conditions in America and, indirectly also, in Europe, Russia, and Japan.

What is happening today in Greece, Cyprus, Italy, Spain, and Portugal is the shame of Europe, and the EU will break up in its current form—the sooner, the better. In Greece, 31% of people live below the poverty line; doctors can no longer perform surgery; 2.5 million

1. Schmitt (1888-1985) was the “legal” apologist for the Nazi dictatorship. See profile in [EIR](#), Jan. 6, 2006—ed.

people no longer have health insurance and cannot afford a visit to the doctor; patients must wait 18 months for cancer surgery; and children are no longer vaccinated. The unemployment rate for young people aged 15-24 years is 64.2%! That is, two out of three young people have no work and, under the current EU regime, also no future! (See article on Greece in *International*.)

As Jeremy Warner writes in the *Daily Telegraph*, from the latest monthly report of the International Monetary Fund it is apparent that Spain is already insolvent, and the supposedly successful reduction of the budget deficit came about only because the totals for the last bailout, from the previous year, were simply not counted. The government was just waiting for the introduction of the banking union! Thus German taxpayers especially are expected to pay the debts of the bankrupt Spanish gambling banks!

What a banking union and pooling of debts would mean is simply that similar conditions of poverty would then also occur in Germany, which, in a new version of the Versailles Treaty, would be the ultimate paymaster for all. But 1923 is still too fresh in the collective consciousness of Germany, for us to miss the signs of the times and the *cui bono*: that with hyperinflation, the population is dispossessed in the most brutal manner.

Only the Real Glass-Steagall Will Work

The German Institute for Economic Research (DIW), in a recently published study, concluded that the blueprint presented by the federal government for a so-called “two-tier banking system” does just as little of consequence as all other proposals currently being discussed by officials in Europe. The government’s plan makes it very easy for banks to re-package proprietary trading as “market making,” and as long as seemingly separate banks are still united in a holding company, the effect of such a law would be marginal at best.

Why then does the DIW not call for the only proposal that really does something to protect the deposits of savers and the accounts related to the real economy, providing the latter with real credit for productive investment? The only way that an imminent catastrophe of the global financial system can be averted, would be with the immediate adoption of the original Glass-Steagall Act, as President Franklin Roosevelt pushed it through in 1933, and as it is currently being discussed, thanks to the mobilization of the LaRouche Political Action Committee, in the U.S. Congress, in state legislatures, and in the American population. If Glass-Steagall is adopted in the United States, this will change the situation around the world, almost overnight, and in Europe, nothing more would remain to be done than to do the same.

This indispensable first step must be followed by a second, equally indispensable one: the establishment of a real credit system in the tradition of Alexander Hamilton, which is the exact opposite of monetarism. Instead of the current, mindless fixation on money, the credit system will ensure that the real economy is brought into accord with the laws of the anti-entropic, self-developing physical universe. That is to say, there will be credit for investments that lead to a permanent increase in the energy-flux density of the production process, and thus help to develop each generation on a qualitatively higher level, allowing their real identities to become those of what is thus far the only known creative species in the universe.

At the risk of giving the monetarists a heart attack: Money as such will play no role in this system, and credit derivatives are entirely superfluous. The key to the organization of the physical economy of the future lies rather in the understanding of how life itself is organized in the universe, and which laws govern the development of life from lower to higher forms. The key lies in the understanding of human creativity as a reflection of the laws of the universe.

Translated from German by Daniel Platt

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Call for Return to Drachma, Sovereignty

by Dean Andromidas

May 10—In the face of the ongoing assault on Greece by the genocidal policies of the British Empire’s European financial oligarchy, a new political party has been formed, calling for the country to take back its sovereignty. The party, called variously Drachma, Greek Democratic 5 Star Movement, or Drachma 5, founded on May 8, is calling for Greece to dump the euro, return to its former national currency, the drachma, and implement banking reform based on the separation of commercial and investment banking as



Prof. Theodore Katsanevas is the driving force behind the creation of Greece’s new anti-euro party, the Drachma 5 Movement, which calls for a return to the national currency. He is shown here speaking at the Schiller Institute conference in Frankfurt April 14. The logo of the new party is based on an image of the drachma.

modeled on the Glass-Steagall Act.

The initiator of the movement is Professor of Labor Economics Theodore Katsanevas, who was among the speakers at the Schiller Institute’s international conference, “The Last Chance for Humanity,” held April 13-14 in Frankfurt, Germany.¹ Prof. Katsanevas was also a signatory to the [Frankfurt Resolution](#), “Either Glass-Steagall, or Chaos and Genocide,” unanimously adopted at the conclusion of the conference. Katsanevas is not new to politics, having been a founding member of the Pan Hellenic Socialist Party, for which he served several terms in parliament, and he has been the leading Greek spokesman for returning to the drachma.

On May 7, the Greek national daily *Hellada* published a two-page article reporting on Katsanevas’s presentation to the conference, along with the entire conference resolution, and a photo of the professor in discussion with Lyndon LaRouche. On the second page is a Greek translation of Schiller Institute founder Helga Zepp-LaRouche’s open letter calling on the U.S. Congress to pass HR 129, the bill to revive Glass-Steagall.

The author of the article, Nicolas Laos, has previously interviewed Zepp-LaRouche and former French Presidential candidate and longtime LaRouche ally in France, Jacques Cheminade. The fact that the article was published the day before the launching the new party, and that the author is a member of its organizing committee, indicates that the party is associating itself with the fight for a Glass-Steagall reform, as well as for dismantling the Eurozone.

Back to the Drachma: Separate the Banks

While sharing the “5 Star” name with the Italian Five-Star Movement of populist Beppe Grillo, the Greek Democratic 5 Star Movement/Drachma 5 shares little else. The five stars stand for the five basic positions of the party: 1) overthrow the Memorandum of the International Monetary fund, the European Commission, and the European Central Bank (aka the Troika); 2) return to the drachma; 3) facilitate robust growth; 4) restore national dignity; and 5) restore social justice. Its 25-member organizing committee represents a cross-section of the Greek population, and includes teachers, businessmen, engi-

1. See *EIR*, April 26, 2013, for Professor Katsanevas’s speech.



The Greek national daily Hellada, on May 7, devoted two pages to coverage of the April 13-14 Schiller Institute conference, including the text of the conference resolution, along with Helga Zepp-LaRouche's photo.

neers, economists, and university professors, among others.

Their program asserts that the “Memorandum and the euro are an absolutely indisputable unity”; it therefore calls for a withdrawal from the Eurozone, and the implementation of “a comprehensive plan” including cancellation of 70% of the foreign debt, and the repayment of the balance, following a grace period of 2-3 years.

After denouncing “casino-capitalism” and the “‘unholy alliance’ of the globalized economy and gambling that erodes the real economy of human labor,” there is a call for bank separation: “control of the banking system, capital flows, and speculative financial transactions, separation between commercial and investment banks....”

Under the principle of “patriotic socialism with a human face, with social solidarity,” the manifesto calls for developing the industrial and agricultural potential of the Greek economy through investment in technological innovation and expansion and development of

its infrastructure, and to “create international university training centers and research institutes to utilize Greek scientists who excel internationally,” and are now emigrating by the thousands.

The manifesto calls for establishing an alliance among Italy, Spain, Portugal, Cyprus, and Greece to exit the euro and enter into a cooperative alliance, “establishing common policies in economic, financial, developmental, commercial, banking and monetary practices, and civil partnerships for strengthening their geopolitical power, negotiating debts, recovery of energy and wealth resources....”

It concludes, “Nothing changes if you do not fight for hope against the bloodless conquest and subjugation of the country that is taking place today.”

Anti-Euro Sentiment Grows in Greece and Cyprus

The launching Drachma 5 has been given extensive media coverage, and promises to shift even further the public sentiment in favor of dumping the euro.

Drachma 5 is, in fact, the second anti-euro party to be formed in Greece. Last month the “Plan B” party was launched by Alekos Alavanos, a move that could split the Syriza Party, which is the leading opposition party. While Syriza is against the Memorandum, it supports remaining within the Eurozone. Alavanos is the former leader of that party, from which he broke on the issue of the euro. About a quarter of Syriza’s members want to leave the Eurozone.

In neighboring Cyprus, which maintains close ties to Greece, the destruction of the Cypriot banking system and economy at the hands of the Eurogroup, with its infamous “bail-in” of depositors’ accounts, and the government’s all-out adoption of the Troika Memorandum and loan agreement, has ignited a broad anti-euro movement.

The Cypriot opposition AKEL party, which controls 19 of the 56 seats in the parliament, issued a statement declaring it would be calling for a negotiated exit from the Eurozone, and for the agreement to be put before a national referendum.

The Green party and the Social Democratic Movement party also are seriously considering an exit from the euro. And the extra-parliamentary movement, the Citizens’ Alliance, led by former independent presidential candidate Giorgos Lillikas, which held demonstrations outside the parliament during the vote, also calls for removing the country from the “neo-colonial subju-

gation” of the Troika, while not ruling out an exit from the Eurozone “after careful study.”

Troika Genocide Continues

This new political call to arms comes none to soon, as the Greek economy continues to collapse with no hope in sight for any recovery under current policies. The latest figures reveal that unemployment of those between 19 and 24 years of age reached an unbelievable 64.2%, in February. According to the latest figures from the Hellenic Statistical Authority, overall unemployment reached 27%, the highest in the Eurozone.

Greece has no real welfare system outside of unemployment insurance, which only lasts a year. Thousands of Greeks are without income; entire extended families are surviving on the pensions of the grandparents, or are living on the street. The thousands of shopkeepers and small business owners who have gone bankrupt do not even show up in the statistics. Real unemployment is closer to 35%, and possibly up to 50%. The young and educated are fleeing the country as if it were a war zone, with reports of 150,000 recent university graduates having left in search of work, while about the same number of scientists, engineers, and researchers have also emigrated since the crisis began in 2008.

The number of suicides related to economic hardship is reported in the media on a daily basis; the health-care system has collapsed; hospital staffs have been gutted by a hiring freeze; even people who have health insurance are unable to acquire their medicines, especially those for cancer and other life-threatening illnesses.

This policy is not just “harsh austerity,” but *genocide*. As previously reported in *EIR* (May 3, 2013), the effects of the austerity are now officially recognized as a violation of human rights by the United Nations. This was the finding of a preliminary examination by Cephas Lumina, the UN Human Rights Council expert on foreign debt and human rights, who spent four days on an inspection tour of Greece.

“[Human] rights ... are under threat or being undermined by harsh pro-cyclical policies—austerity, labor reforms, liberalization and privatizations—that the government has been constrained to implement since May 2010,” Lumina told a press conference in Athens April 26. The result is a “contraction of the economy and significant social costs for the population, including high unemployment, homelessness, poverty, and inequality.”

Glass-Steagall in Italy

National Liberation Committee Formed

by Andrew Spannaus

May 13—The newly formed Italian National Liberation Committee (CLN), which brings together various movements and associations intent on defending Italy from the dictatorship of the financial markets, has launched its first organizing initiative: collecting signatures on a proposal for restoring the separation between commercial banks and investments banks, following the principle of the original 1933 Glass-Steagall Act in the United States.

The name “National Liberation Committee” is taken from the body created during the resistance against Fascism in World War II. Various groupings with different backgrounds came together to defeat the Mussolini regime and its Nazi backers, leading to the creation of the modern Italian Republic at the end of the war.

On May 10, ten representatives of the CLN went to the Supreme Court in Rome (Corte di Cassazione) to register what is called a “Popular Initiative Bill,” a system which allows any group that collects 50,000 signatures on a proposal to force the parliament to consider it. The registration was published in the Official Journal of the Italian Republic the next day, marking the start of the six-month period for the collection of the signatures. Now, the participating organizations—including Movisol, the LaRouche movement in Italy—will begin mobilizing the population for this essential step towards the reorganization of the bankrupt financial system.

As *EIR* readers may recall, numerous resolutions and bills in favor of Glass-Steagall have been introduced in the Italian Senate and Chamber of Deputies in recent years. Indeed, thanks to Movisol’s campaign in particular, the issue of protecting the real economy from the catastrophic effects of the speculative global financial system has been picked up by a number of political figures, and found its way into the national debate at many levels. Just since the beginning of 2012, bills

have been introduced by Sen. Oskar Peterlini, former Economics Minister Giulio Tremonti, and also by the Lega Nord political party, which included Glass-Steagall among the points of its electoral program at the beginning of this year.

Homage to ‘International Commitments’

What has not been seen, however, is a serious shift within the Italian institutions. Although it is clear that the policies of the Troika (European Central Bank, IMF, European Commission) have been disastrous, leading to economic and social destruction in countries such as Greece, Spain, and Portugal, much of the Italian political class continues to pay homage to the “international commitments” represented by the EU budget criteria, and demands for further deregulation and privatization. This, despite the fact that two years of harsh austerity have led to a sharp drop in Italy’s GDP, and produced the beginnings of a seismic shift in the political system.

In the national elections held in late February of this year, a full 25% of the population voted for the grouping founded by populist comedian Beppe Grillo, the Five Star Movement (M5S). The M5S focused mostly on superficial and misleading aspects of the current crisis, such as political corruption and wasteful spending. Yet the discontent in the population caused by the economic collapse has led to an explosion in the movement’s support, because it was seen as being “new,” outside of the current political institutions. For example, the M5S refuses to go on television, and only organizes over the Internet and at street rallies.

Despite this electoral earthquake, the other three largest political parties (the center-left Democratic Party, center-right People of Freedom, and centrist Civic Choice) have formed a grand coalition government—with essentially the same policy as that of the technocratic Prime Minister Mario Monti before them! They are playing politics as usual, while planning a few superficial reforms that they hope will placate some of the popular rage. In terms of basic economic policy, nobody in the “mainstream” has dared to question the free-market, pro-austerity bent that has created this situation, or to state the obvious: that the euro currency must be abandoned if European nations hope to survive. At best, they speak of loosening the budget criteria imposed by the European Union for a year or two, to at least par-

tially stop the bleeding. A fundamental change it is not.

A Return to Sovereignty, Sanity

The CLN’s mobilization for a Glass-Steagall law in Italy aims to rapidly inject reality into this situation. The awareness of the need for insulating the real economy from the collapse of the global financial system is spreading rapidly among protest groups across the political spectrum. Within the M5S as well, there are many inexperienced members who now find themselves in the parliament, and need to be educated as to the real issues to be tackled. A discussion process has begun, with the goal of freeing the movement’s rank-and-file from the ideological control exercised by Grillo and his partner Gianroberto Casaleggio, whose worldview is closer to that of Prince Philip than Franklin Roosevelt.

The CLN aims to drive a process that can influence all of the political parties, involving citizens and groups willing to defend Italy’s population, and demand a return to sovereignty and sanity. As of this writing, there are five other movements that belong to the CLN, besides Movisol. They come from varied backgrounds, and include, for example, an association for the defense of children, a large consumers’ association, and a network of small businesses.

The concept behind the CLN is to bring together diverse organizations around four points: 1) national sovereignty, and thus withdrawal from the Lisbon Treaty, the EU document that overrides member states’ national constitutions; 2) Glass-Steagall; 3) a National Bank to provide productive credit to the economy; and 4) a change in the tax-collection system to avoid foreclosures against homes and businesses. The last point is particularly important for businesses, which have been hard hit by the economic crisis. As turnover has gone down and the banks have cut off credit, companies are forced into bankruptcy, and end up losing everything; this often extends to the personal assets of the business owners, and has driven many to suicide. While many in the media express their shock at the situation, very few have had the courage to make proposals that would actually improve the economy.

By working to gather over 50,000 signatures in the coming months, the groups participating in the CLN will be creating an organizing process that can put pressure on the institutions, and force them to take responsibility for the future.

LaRouchePAC Glass-Steagall Mobilization Shakes Nation

by Leandra Bernstein

May 13—Throughout the week of May 5-11, the LaRouche Political Action Committee engaged in an intensive week of action, deploying into all layers of government to amplify the pressure on Congress to reinstate the Glass-Steagall Act. In addition to the show of force in the nation's capital, LaRouchePAC held days of action in 13 state capitals, and mobilized letters from across the world, addressed to the U.S. Congress, appealing to Members of the House and Senate to reinstate the Roosevelt-era banking separation principle. This activity, which has been accelerating rapidly since January, is part of the race to establish policy hegemony, to end the bailout system, as the precondition for rebuilding the real economy.

Reimplementing Glass-Steagall will effectively supersede those other proposals—like the Senate's Brown-Vitter Act, the Cyprus-style provisions of the Dodd-Frank Act, the Volcker Rule, and ring-fencing—that are the equivalent of a staged boxing match against international finance and Wall Street, waged by policymakers who are afraid of drawing blood or throwing a single punch.

This past week in Washington D.C., approximately 80 activists from states along the East Coast attended over 50 meetings with Congressional offices; about a quarter which were attended by the Senator or Representative. Beyond these prearranged constituent meetings, LPAC organizers delivered the most up-to-date materials to numerous offices, introduced constituents

to Members of Congress in the hallways and on the sidewalks, and—*semper paratus*—in the elevators, the cafeteria, etc.

Augmenting the activities inside, a team of LPAC organizers stood at the intersection of the House Office Building and the Capitol displaying a beautiful banner with the color-coded U.S. [map](#), showing 40 of the 50 states at some level of action on Glass-Steagall. The banner read: “National Week of Action To Restore Glass-Steagall. Pass HR 129”—the House bill to reinstate the FDR law. The banner attracted staffers, Congressmen, and out-of-town visitors, all asking, “What is happening in my home state?”

Although many activists had come to D.C. for the first time, they were hardly impressed with the “Beltway talk”; they came to Washington not to make friends, but to make history. One challenge was communicating the urgency of enacting Glass-Steagall *now*. On more than one occasion, an aide told activists that the Congressman was holding back his support because he wanted to wait for Dodd-Frank to take effect, or the Volcker Rule, or Brown-Vitter. A union organizer from New Jersey responded by saying, “That is exactly the kind of **** we are tired of hearing,” reminding the aide that were it not for the unions, the Senator would not have been reelected. He explained that 75% of his union members are unemployed because of what the Senator is *not* doing. Many meetings were wake-up calls, reminding lawmakers of the con-



EIRNS/Sylvia Rosos

A Congressman exclaimed to an LPAC organizer, “You are everywhere!” And he was right. Here, organizing for Glass-Steagall in Los Angeles, during the Week of Action.

ditions of life back in their districts, where Glass-Steagall is not a legislative choice, but a matter of life and death.

The States Take Action

This show of force in Washington caused one Representative to exclaim, “You are everywhere!” And he was correct. Simultaneous with the D.C. operations, LPAC heightened efforts at the state level, concentrating activity where things had not yet opened up, such as Nebraska, Nevada, and Illinois, and redoubling efforts in New York, Massachusetts, California, Texas, and elsewhere.

In Sacramento, Calif., a dozen activists held a press conference, reading statements of support from constituents, including a former scientist at the NASA Jet Propulsion Lab, and a leader of the International Association of Machinists. Currently, 12 of California’s 53

Congressmen have co-sponsored HR 129, and the chairman of the state Democratic Party, former Rep. John Burton, recently announced his support, as did former vice chair Eric Bauman.

In Texas, former Democratic candidate for Congress Keshia Rogers led the charge with a team of activists, to find a legislator with the courage to introduce a Glass-Steagall resolution, despite the partisan baggage. Recent statements issued by conservatives, such as former Reagan OMB director David Stockman and FDIC vice chairman Thomas Hoenig, have helped cut through party biases, but as activists and constituents mobilizing for Glass-Steagall know, a success in Texas, which has the second-largest delegation in Congress, will have resounding effects nationally.

Meanwhile in Nevada, activists campaigned for the three-point LPAC policy of Glass-Steagall, a Hamiltonian credit system, and [NAWAPA XXI](#). As legislators were recruited to fight for Glass-Steagall, members of water districts and farm groups, facing shortages in both water supplies, and real employment, responded to the call to join “an army of patriots” to rebuild the nation.

‘The Eyes of All People Are Upon Us’

While the states’ support for Glass-Steagall (resolutions in 18 states) is seizing the attention of Members of Congress, the appeals pouring in from across the globe are having a tremendous impact. Throughout the week, LaRouchePAC hand-delivered packages of over 13 appeals from ranking figures in Italy, Germany, France, Spain, Ireland, Iceland, Denmark, Sweden, Colombia, and Mexico—with more letters still coming. Activists presented the letter from the Icelandic parliamentarian who introduced a motion calling for full separation between commercial and investment banks, “based on the idea behind Franklin Roosevelt’s Glass-Steagall law.” They delivered the call for a Global Glass-Steagall, signed by almost 300 French mayors and 13 notable economists.

Members of Congress also received the letter from Italian parliamentarian Giancarlo Giorgetti, bluntly stating, “Without a Glass-Steagall reform, it will be impossible to promote any growth in Europe. That is why the Lega Nord introduced a bill similar to yours [into Parliament] in March. . . .”

Describing the reaction to the flood of international support for Glass-Steagall, one LPAC organizer said,

“In every office, their eyes got wide, and their faces just froze. Most of them had no idea Glass-Steagall was an international fight.”

The mission to reinstate Glass-Steagall in the U.S. was perhaps best represented at the Massachusetts statehouse in Boston, where organizers hoisted a banner referencing the famous words of John Winthrop: “‘The Eyes of the World Are Upon Us,’ Glass-Steagall or Chaos.” LaRouchePAC is asking representatives at every level of government, and all men and women of courage, to take responsibility for the nation by fighting to reinstate Glass-Steagall. Success in this fight will be a victory for both the United States and every other nation that follows suit. This is a shared battle for a shared victory.

Documentation

Glass-Steagall Support Pours into Washington

Among the recent letters from abroad to the U.S. Congress, calling on it to re-enact Glass-Steagall, are these, from a London-based financial advisor, a Colombian Congresswoman, and a Franco-Syrian professor.

Stephen J. Lewis, City of London fund advisor, May 9:

“The reintroduction of bank regulation along the lines of the Glass-Steagall Act would materially strengthen the U.S. financial system. It would ensure that the banks’ essential function of providing credit to support productive activity was insulated from the risks that arise from speculative financial activities. For the moment, U.S. banks may appear to be recovering from the 2007-09 crisis. But as long as banking and financial speculation remain bundled together, the threat of another, possibly even more damaging, crisis will persist.

“In Europe, there has been no semblance of recovery. Deepening economic distress across this continent increasingly imperils global growth and political

stability. Bank reform is widely acknowledged to be necessary if Europe is ever to return to economic health. But Europe will not adopt the measures essential to set its banks on a firm basis until the U.S. takes the lead. European policymakers do not want to be out of step with the U.S.A. on this. A U.S. decision to separate essential banking functions from other financial activities would, therefore, not only be good for the U.S.A., it would give a lead for which the rest of the world is crying out.”

S.J. Lewis

Alba Luz Pinilla, Colombia, Member of Congress, Polo Democratico party, represents the capital city of Bogotá, May 6:

“At a time when the entire world is being shaken by one of the most significant planetary crises of the modern era, it is necessary for the system of sovereign nations to take back the reins of the economy, which, over a half century ago, we left in the hands of the monetarists and speculators.

“In the case of Colombia, austerity measures and budget cuts have decimated our industrial capacity, which is reflected in the signs of economic slowdown which are appearing. Contrary to all forecasts, the economy in the third quarter of 2012 suffered a worrisome backslide, registering growth of only 2.1%, as compared to the same quarter a year earlier, when there had been expansion of 7.5%. Sectors such as manufacturing grew by only 0.1%, and trade by only 3.7%.

“What looms for Colombia is a slowdown of the economy, all the more so, with economic measures that discourage growth, and the motor of its backbone—the middle class. Instead, a class of investors is favored that speculates with capital on a world scale, and leaves no wealth or profits in the country.

“The world economy needs to be re-engineered, and this should be based on a total change in the rules of priorities in investment. It is time to rescue our productive sectors and to protect our unemployed manpower, which is reflected in unemployment rates of more than 40%.

“It is time to stop the package of financial bailouts that sacrifice nations and their citizens, and establish a new agreement among nations for an economic model which guarantees the survival of humanity, once and for all, closing the doors to speculative investment and the market economy which subjected the entire world

to free trade, sacrificing employment and the economic sovereignty of nations.

“In Colombia, we understand that the [global financiers] intend to have nations pay for the collapse of the world financial system, sacrificing human lives and the general welfare. The initiative for a GLASS-STEAGALL law is now more necessary than ever, and we trust that the Congress of the United States will lead the way on that important step, passing such a necessary measure, and that they will undoubtedly send a clear message to political forces in our congresses, of encouragement for those of us who have been promoting a debate about the reorganization of the system, which should be spread to all nations on the planet, in order to avoid an era of planetary crisis that we can still prevent.

“For the general welfare of nations.

“With cordial greetings,”

Alba Luz Pedraza

Bassam Tahhan, a Franco-Syrian citizen, and professor of Arab Civilization at France’s leading university-level schools (*grandes écoles*), on May 9:



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“The point is, we need Glass-Steagall immediately. We need it because that’s our only insurance to save the nation.... Get Glass-Steagall in, and we can work our way to solve the other things that need to be cleaned up. If we don’t get Glass-Steagall in first, we’re in a mess!”
—Lyndon LaRouche, Feb. 11, 2013

“I want to bring to your attention the extremely difficult economic and social conditions which have arisen in Europe’s southern countries, Greece, Portugal, and Spain, in particular, as a result of the murderous austerity policies imposed on them by the Troika—IMF, European Commission, and European Central Bank.

“These austerity measures—cuts in social assistance, public programs, and tax increases—have been imposed on nations to compensate for the money spent by governments for the bailout of the bankrupt financial system, following the 2007 financial crash, and 30 years of speculative practices. Since the crisis is not over, such conditions will soon extend to other European countries and to the U.S., as well.

“The bankrupt financial oligarchy of the Trans-Atlantic area, which is nothing but a reincarnation of the 19th-Century British Empire, is also attempting to provoke conditions for a third world war, in order to maintain its hegemony against newly emerging powers in Eurasia, Russia, and China, in particular.

“My home country of Syria, one of the oldest civilizations in the world, has been almost entirely destroyed in less than two years by thousands of jihadists deployed by the Trans-Atlantic powers against the Bashar al-Assad regime, the very same ones deployed in Libya, which later killed U.S. Ambassador Stevens in Benghazi. Russia and China having come to the defense of Syrian sovereignty against this onslaught, this new British Empire has re-created in the Middle East all the elements for a new East/West confrontation, which would rapidly rise to the thermonuclear threshold.

“I believe the only way of stopping this oligarchy from provoking a new world war, is to eliminate its financial power. Only the reenactment of Roosevelt’s Glass-Steagall Act could do this, because by separating commercial banks from speculative investment banks, governments would decide to support only commercial banks, and let the oligarchy’s casino banks which are bankrupt, go bankrupt.

“I’m also convinced that because of the huge dimensions of the crisis, and the fact that the memories of the Roosevelt’s Glass-Steagall law, repealed in 1999, are still fresh in your country, the United States must take the lead in the reenactment of the Glass-Steagall Act.”

Bassam Tahhan

Questions To Be Answered in the Investigation of Benghazi 9/11

by William F. Wertz, Jr.

May 14—In the last week, the investigation of the terrorist attack on the U.S. mission in Benghazi has finally gained traction, including with the mainstream news media. The exposure by the *Weekly Standard*, the ABC News release of the Administration's "talking points," and then, the hearing conducted by the House Oversight and Government Reform Committee featuring three State Department whistleblowers, have made it clear that the Obama Administration has been engaged in a massive cover-up, compared by many to Watergate, and to Nixon's threatened impeachment and forced resignation.

Over two-thirds of the Republican conference in the House has co-sponsored Rep. Frank Wolf's HR 36, calling for the creation of a select committee to investigate Benghazi—146 co-sponsors as of May 13.

Unfortunately, there are those like Senators John McCain and Lindsey Graham who say they want to get to the bottom of Benghazi, but do not really want to do so. Because they, like Obama, are protecting the al-Qaeda-affiliated **Libyan Islamic Fighting Group (LIFG)**, which Obama allied with to overthrow Qaddafi, and is now allied with to overthrow Assad in Syria. Perhaps McCain should reflect upon the testimony of State Department security expert Eric Nordstrom, who reported that the **February 17 Brigade**, which was hired by the State Department to protect the Benghazi mission, posted threats not only to Ambassador Stevens, who was killed in the Benghazi attack, but also to McCain, on its Facebook page prior to 9/11/2012. The February 17 Brigade was founded by the emir of the LIFG, Abdelhakim Belhadj, whom McCain has foolishly defended.

Whether the investigation continues to be conducted by House standing committees, or a select committee is created, the investigation must address the policy issue which underlies the three issues most frequently raised: 1) Why was security denied despite repeated requests?

2) Why was military support either not available to be rendered, or not provided if available? 3) Why did the Administration lie through the talking points?

The British-Saudi-Obama Alliance

In a continuously Updated Fact Sheet on Benghazi produced by this author for larouchepac.com, beginning in December of 2012, it has been conclusively demonstrated that the answer to these three questions is that the Obama Administration, in alliance with the British Empire and Saudi Arabia, has allied with al-Qaeda and the Muslim Brotherhood in the Middle East, Northern Africa, and Asia, as a continuation of the old British intelligence hand Bernard Lewis's "Arc of Crisis" policy, aimed ultimately at Russia and China. So, while the Obama Administration proclaimed that it had killed Osama bin Laden, and that al-Qaeda was on the run, the Administration was actually continuing the policy which led to the creation of al-Qaeda in the first place, as a weapon against the Soviet Union in Afghanistan, a policy which has backfired against the United States more than once.

In Benghazi, the reality is that the al-Qaeda-affiliated LIFG, with which Obama allied to overthrow Qaddafi, and upon which Obama is relying to overthrow Assad, was responsible for the murder of our ambassador and three other Americans.

The underlying policy was not created by the State Department, the Pentagon, or the CIA. It was a British Empire-Saudi policy, carried out by their stooge Barack Obama and his close White House aides, such as White House terrorism advisor John Brennan, National Security Advisor Tom Donilon, et al. The State Department, the Pentagon, and the CIA may be criticized for carrying out that policy, but they did not generate it. Therefore, any investigation which focuses the blame at a lower level, including Cabinet members such as Hillary Clinton, would represent a coverup of Obama's respon-

sibility, a responsibility, which includes launching an unconstitutional war against Libya in the first place.

If Congressional investigators seek the truth, they will have succeeded in pulling the rug out from underneath a policy which otherwise, in the case of Syria, could lead to World War III.

Therefore, the following series of questions must be answered if the Congress is to meet its Constitutional responsibilities, and not engage in its own coverup of the very coverup it has correctly accused the Obama White House of perpetrating.

Questions To Be Asked by Congressional Investigators

1. At least 18 hours before the attack on the Benghazi mission, al-Qaeda leader Ayman al-Zawahiri, in a video timed for the anniversary of 9/11/01, called for attacks on Americans in Libya to avenge the death of Abu Yahya al-Libi in a U.S. drone attack in Pakistan in June 2012. Why didn't Obama mention this deplorable video, and why were U.S. military forces not put on immediate alert?

2. According to a hacked Feb. 16, 2013 memo to Hillary Clinton from former White House advisor to Bill Clinton, Sidney Blumenthal, French intelligence told Algerian intelligence that the Benghazi terrorist attack was funded by "wealthy Sunni Islamists from Saudi Arabia." According to Algerian intelligence, Libyan intelligence gave them the same information. Investigators should contact French, Algerian, and Libyan intelligence to obtain their intelligence on the Saudi funding of the Benghazi attackers, especially, given the role of Saudi Arabia in the original 9/11 and its current role in supporting al-Qaeda in Syria.

3. According to the London *Independent* of March 7, 2011, the Obama Administration asked Saudi Arabia to provide weapons to the Benghazi-based opposition to Qaddafi. The United Nations has concluded that both Qatar and the U.A.E. did so in violation of the UN arms embargo. Investigators should look into the role of Saudi Arabia in arming the al-Qaeda-affiliated opposition in Libya directly, or indirectly through Qatar and the U.A.E. Specifically, what is the involvement of Prince Bandar bin Sultan, the current head of intelligence in Saudi Arabia, who previously funded the Contras in the 1980s, when the Congress cut off funding; provided funds through his wife to the first two 9/11 hijackers to enter the U.S. when he was Saudi Ambassador to the U.S.; and is now supporting al-Qaeda in Syria?

4. In addition to the mission, the U.S. also maintained an annex in Benghazi run by the CIA. What was the purpose of the CIA annex in Benghazi? Why was the mission in Benghazi never formally registered with the Libyan government, as reported by the Accountability Review Board (ARB)? Was it involved in supplying weapons or vetting personnel to be sent to Syria? Is this why the CIA has not allowed any of its personnel to be interviewed?

5. The LIFG was listed as a Foreign Terrorist Organization (FTO) by the State Department, the UN Security Council, and the U.K. Home Office before it officially disbanded in February 2011, and merely renamed itself the **Libyan Islamic Movement for Change (LIMC)**. In 2007, al-Qaeda announced its merger with the LIFG. There are numerous links between the LIFG and 9/11/01 known to the U.S. from interrogations in Guantanamo. The sole suspect in the Benghazi attack currently in custody, Faraj al-Chalabi, is a member of al-Qaeda and of the LIFG. Did Obama knowingly authorize the decision to work with the LIFG/LIMC?

6. The emir of the LIFG, Abdel Hakim Belhadj, fought together with Osama bin Laden in Afghanistan, and then moved with him to Sudan in 1992. He ran training camps for al-Qaeda in Afghanistan in the late 1990s. He fled Kabul in 2001, and went with bin Laden to Tora Bora. He was listed as a co-conspirator in the 2004 Madrid bombings. In Libya, he received weapons approved by Obama from Qatar. He became the military commander of the Tripoli Military Council in August 2011, and was responsible for security at all foreign embassies. He was later appointed to the Supreme Security Committee in Libya. The Algerian Foreign Ministry declared him *persona non grata* in February 2013 and stated that he had prior knowledge of the al-Qaeda hostage-taking in Algeria in January 2013 by Mokhtar Bel Mokhtar, the head of al-Qaeda in the Maghreb.

Why did Obama ally with a known terrorist to overthrow Qaddafi? Why did Obama approve Qatar providing him with weapons, bypassing the Transitional National Council (TNC)? Is Belhadj, indeed, the current head of domestic security in Libya, as stated by Mathieu Pellerin, head of the Paris-based private intelligence company CISCA?

7. After Belhadj became head of the Tripoli Military Council, he and Ismael al-Sallabi traveled with TNC chairman Jalil to Qatar to meet with NATO officials and

financiers of the revolution. Who attended this meeting? Was Prince Bandar there? Why did NATO choose to meet with known terrorists? Did Obama authorize this meeting? Who were the financiers?

8. Bin Qumu is head of **Ansar al-Sharia**, which took credit for the attack on the U.S. Mission on its Facebook page. Bin Qumu is known to be a member of the LIFG and al-Qaeda, and was assessed to be a medium-to-high risk to U.S. interests while at Guantanamo. He received a monthly stipend from one of the financiers of the original 9/11. He nonetheless became an ally of the Obama Administration when he began training rebel forces in Derna in April of 2011. Why did the Obama Administration ally with a known terrorist to overthrow Qaddafi?

9. U.S. officials met with Wisam bin Hamid and Muhammad al-Garabi on Sept. 9, 2012. The Library of Congress reports that bin Hamid is reported to be the leader of al-Qaeda in Libya. He leads **Libya Shield**, aka **Free Libya**. He hosted a demonstration in Sirte in March 2012, attended by the head of **al-Qaeda in the Maghreb**, Mokhtar Bel Mokhtar, as his honored guest. Bel Mokhtar has been identified as the leader of the hostage-taking event which took place, beginning Jan. 13, 2013, at a BP gas field in Algeria. Bin Hamid also participated in another rally in Benghazi with other militias on June 7-8, 2012. The Library of Congress reports that these militias probably make up the bulk of al-Qaeda's network in Libya. It was Libya Shield which held up U.S. reinforcements from Tripoli at the Benghazi airport for three hours, and then escorted them to the CIA annex. The mortar attack on the annex commenced 15 minutes later.

Why did U.S. officials meet with bin Hamid? Which officials met with him? Why did we rely on Libya Shield for security in Benghazi? On Nov. 28, 2012 *The New York Times* reported that the FBI investigators of the Benghazi terrorist attack were escorted by "Mr. Hamid." Why do we continue to rely on Wisam bin Hamid and Libya Shield for security, while investigating a crime in which bin Hamid must be a suspect?

10. The Supreme Security Council police car assigned to the Benghazi mission left the scene of the terrorist attack just as it began. An individual wearing an SSC police uniform took photos of the mission on the morning of the attack. On Sept. 12, Wanis al-Sharif, Deputy Interior Minister for eastern Libya, in charge of the SSC in Benghazi, and a senior leader of the LIFG, told the press that there had been a demonstration pro-

testing a U.S. video attacking the Prophet Mohammed. On Sept. 17, he was sacked by his own government. And yet, until at least two months later, al-Sharif had defied the order, and refused to step down. Why was al-Sharif sacked? Why was he, nonetheless, still in his office until, at least, mid-November?

Since he continues to be referred to as a top security official in Benghazi by the media, what is his current status? What are we doing to identify the individual who took photos? Have we interviewed al-Sharif to find out why he lied, and why he did not provide a marked police car outside the mission 24/7? Have we interviewed the driver who left the scene? As Deputy Interior Minister for eastern Libya, what is his involvement in running weapons to al-Qaeda in Syria and Mali?

11. The February 17 Brigade was formed by Ismael al-Sallabi. Belhadj was in Benghazi in April 2011 to help form the brigade. According to the Senate Homeland Security Committee report, the February 17 Brigade was involved in extrajudicial detentions of U.S. diplomatic personnel prior to Sept. 11. On that date, according to the U.S. Accountability Review Board, the February 17 Brigade guards at the mission failed to notify the February 17 Brigade barracks. According to the Senate Homeland Security Committee, the February 17 Brigade failed to respond to two calls for assistance from the CIA annex. On Sept. 24, Ismael al-Sallabi and Fawzi Bukatif, the founder and commander of the Brigade, were sacked by the Libyan government. On Feb. 16, 2013, the *Washington Post* reported that al-Sallabi is now a senior member of Libya Shield 3. The *Daily Beast* reports that the Ministry of Defense of Libya is now paying al-Sharia through the February 17 Brigade.

Why did we rely on the Brigade for security in the first place, given that it was created by known LIFG operatives? Why did we continue to employ the Brigade after it conducted extrajudicial detentions, and after its loyalties were called into question? Why were al-Sallabi and Bukatif sacked? Why is al-Sallabi now working with Libya Shield under the Defense Ministry? Why is the February 17 Brigade currently paying Ansar al-Sharia?

12. In October 2011, Burhane Ghalioun, head of the Syrian National Council, and Jelil, the head of the Libyan Transitional National Council, signed an agreement, in which Libya agreed to assist in the overthrow of the Syrian government of Bashar al-Assad. Belhadj

traveled to Turkey to meet with the Syrian Free Army in November 2011 to provide money, weapons, and fighters to overthrow Assad. On Dec. 11, 2011, the October agreement was expanded in a meeting in Tripoli involving Jelil; Youssef Qaradhaoui Rached Ghannouchi, head of the **Tunisian Muslim Brotherhood party, Ennahda**; Hamad Jabber bin Jassim al-Thani, the Foreign and Prime Minister of Qatar; the number two of the Muslim Brotherhood in Syria; and Abdel Hakim Belhadj. The agreement reached determined to arm and send fighters from Libya and Tunisia to Syria.

What role did the Obama Administration play in the October and December agreements? Did Obama know about Belhadj's trip to Turkey to meet the Free Syrian Army? Did Obama approve this trip? Did this trip result in the provision of weapons, personnel, and training to the Free Syrian Army from Benghazi?

13. Six hundred LIFG fighters went to Syria in November 2011, led by al-Harati, the deputy commander of the Tripoli Military Council under Belhadj. Did Obama approve this deployment?

14. The UN reports that weapons provided to Belhadj and the LIFG by Qatar and the U.A.E., in violation

of the UN arms embargo, with the approval of Obama, are now being sent "out from Libya to the Syrian Arab Republic through networks and routes passing through either Turkey or northern Lebanon." They report that weapons are flooding into a total of 12 nations, including Syria and Mali. Is Obama facilitating this weapons flow?

15. It is reported that Ambassador Stevens opposed Belhadj becoming either Minister of Defense, or Minister of the Interior in Libya. Is this true and, if so, why? Did Stevens in any way oppose the policy carried out by Belhadj of sending weapons to al-Qaeda in Syria and Mali? Was he targeted by al-Qaeda and the LIFG because he opposed their ascension to power in Libya?

16. The Libyan Interior Ministry official in charge of border control at the time of the attack in Benghazi was Abd al-Wahhab Mohammad Qaid, a leading member of the LIFG whose brother, al-Qaeda leader Abu Yahya al-Libi, was killed in Pakistan in June, 2012 by a U.S. drone attack. He is now the chairman of the National Security Committee of the Libyan Parliament. What was his involvement in the events in Benghazi on Sept. 11, 2012, given the killing of his brother in June 2012, and al-Zawahiri's call for revenge against Americans in Libya?

17. Wisam bin Hamid and Muhammad al-Garabi told U.S. officials on Sept. 9 that they would not continue to provide security for the mission, if Jibril became prime minister. On Sept. 12, one day after the attack in Benghazi, Jibril was defeated. Now the **Muslim Brotherhood** controls nearly half of the Cabinet positions in Libya, and the Muslim Brotherhood candidate for Prime Minister, Barasi, who was supported by them, is a deputy Prime Minister. With the passage of the Political Isolation Law in Libya supported by the LIFG and Muslim Brotherhood, Libya has undergone a coup d'état. The armed militias which occupied Tripoli at the time of the vote were led by Wisam bin Hamid. Did the Obama Administration support this ascension of the LIFG and Muslim Brotherhood to power in Libya?

18. The last meeting Ambassador Stevens had in Benghazi before the terrorist attack was with the Turkish ambassador. The ARB also reports that U.K. diplomatic personnel were in Benghazi on Sept. 11. The attack began immediately after U.K. security personnel left the U.S. mission. What was the purpose of Ambassador Stevens meeting with the Turkish ambassador in Benghazi? Did Stevens also meet with U.K. diplomatic personnel on Sept. 11?

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How Abandoning Science Has Led to Economic Collapse

The following is an edited excerpt from the LaRouchePAC Weekly Report webcast of April 17, detailing certain crucial parameters of the collapse of the U.S. physical economy (the graphics have been revised for use in EIR). Speaking is Creighton Jones, a member of the LaRouchePAC Basement science team. Jones's presentation was preceded by a review by Liona Fan-Chiang of the perspective presented at the April 13-14 Forum for a New Paradigm conference held by the Schiller Institute in Frankfurt, Germany, and was followed by a discussion initiated by Lyndon LaRouche on shifting the level of discussion to looking at man in relationship to the Solar System as a whole. The full show is archived at <http://larouchepac.com/node/26253>.

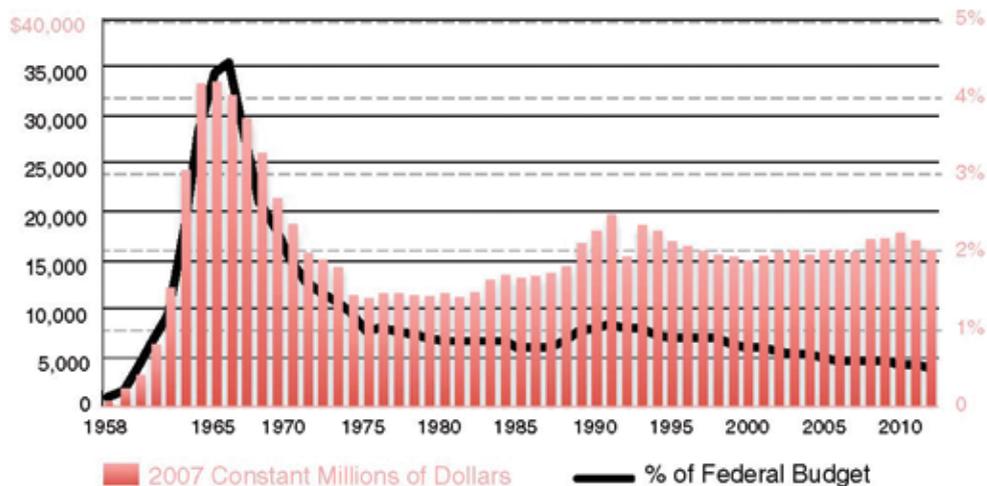
Jones: First, I'll give people a sense of what has been the process of physical collapse, over the past 40-60 years, which has brought us to this point of desperation, to where you've got not only the economic crisis as people understand it, with the collapse of jobs and the collapse of currencies, but also the moral desperation:

the collapse of the morale and the morality of the population. We see the level of violence, the school shootings, the terrorist activity, the ongoing, never-ending wars; all these things driven by an intention on the part of the British Empire, to destroy industry, destroy science, destroy populations, and really create a condition for a dark age, which is, in fact, what we're facing now.

So, let's take a look at some of the indicators of how we got here, and the process that has brought us to this point of sheer desperation.

What you see in **Figure 1** is the percentage of the

FIGURE 1
NASA Budgets Since 1958
(2007 Constant Million Dollars and % of Federal Budget)



Sources: U.S. Office of Management and Budget; Wikipedia

FIGURE 2
Manufacturing vs. FIRE

Percentage of GDP



Source: Bureau of Labor Statistic

Federal budget that goes to NASA, the space program, back to 1958: So you see, there's been a steep collapse, in terms of the actual percentage of the budget that goes toward NASA. It peaked around 1966, and this is what led into our ability to get to the Moon, where you had the initiative of John Kennedy, to say: We're going to do what we've never done before; we're going to do that which is right now impossible, but because we're man, because we're creative, we believe it's achievable.

And so, NASA's percentage of the budget peaked in about 1966; and then, you see, from that point on, you've had a dramatic collapse down to the current state, which is a mere maybe 1% of the budget going toward NASA, going toward advancing space, technology, and everything that goes along with it.

Fan-Chiang: It looks like it's actually at a level below what it was before the Apollo project!

Jones: Right! Actually, going back to right when we started, before we even initiated Apollo; we had more of the actual percentage of expenditures going toward space research and scientific research than we have now today. And it's an indicator of the backward thinking, and the impulse of the Empire to destroy science, to destroy progress. But it also reflects a certain lack of understanding in the population about the role

of science, the role of technology, the role of progress, in creating real wealth. And you'll see how this paralleled another aspects of the economy.

What Are We Producing?

Figure 2 is an image of the change in the percentage of GDP that comes from manufacturing, versus the percentage of GDP that comes from finance, insurance, real estate, and rental and leasing, what they call "FIRE," the FIRE economy. Which really I think is appropriate, because it indicates how we've gone ablaze in this country!

So you see, going back to 1947, where this starts, 25.6% of our GDP was generated as a function of manufacturing. We had a real manufacturing economy; only 10% came from finance and these kinds of things. This stuff sort of peaked in the 1950s. At the end of World War II, we had the intention of taking the industrial machine that we had built up to win the war, to defeat fascism—Roosevelt's intention had been to eliminate the imperial system from the planet, to re-gear our war machine into a global nation-building machine.

Now, you see how this has changed. Since then, you've had a steady collapse of manufacturing, but the steady rise of finance, to the point now, where you actually have things pretty much inverted: Manufacturing as of 2009—and it's worse now, but these statistics only go to 2009—manufacturing only represents now 11% of GDP, whereas finance, insurance, etc., represent 21%.

This really parallels what Lyndon LaRouche has developed with his Triple Curve: that you had a dynamic of a hyperinflated increase, in money pumping and growth of financial speculative instruments, paralleling, and acting as a parasite, and sucking from the real physical economy. So the real physical productive economy has been intentionally collapsed, and sucked off of, to feed this growing, hyperinflationary bubble—which produces, physically, nothing! And in fact, what it produces, is a certain level of psychosis and demoralization, in the population and on the planet.

Fan-Chiang: I think they even consider other things as manufacturing, like "manufacturing" burgers, now.

Now Look at the Labor Force

Jones: Right. Look at some of these other images: **Figure 3** shows that the percentage of employment in manufacturing going back to the 1950s was up around 30%; now, it's down below 10%. Whereas you see the growth in other things, like services—which also includes things like finance, and anything from working at Wal-Mart as a checkout clerk, to working at JPMorgan—these are all services. That's what's been growing, while manufacturing employment has been collapsing.

In **Figure 4**, you see employment, in terms of millions of workers employed in goods-producing activity, versus service-producing. So, in terms of the actual number of employees engaged in production, it's been pretty much steady, but then collapsing even further, really going back into the 1940s, up to now—though we've had a massive increase in population, the actual number has been steady and

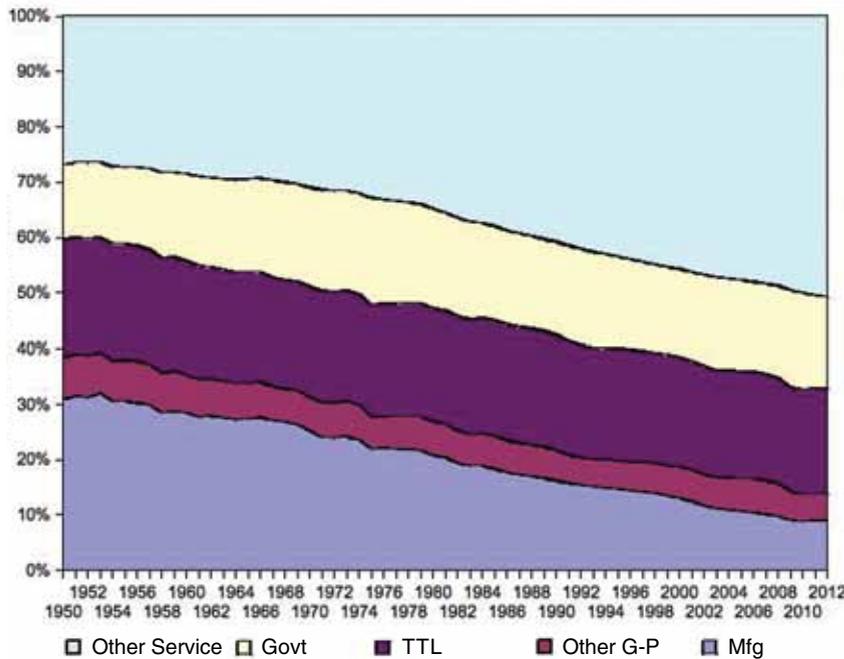
going down a bit. But if you then look at the number of people engaged in providing services, it's gone from about 2 million up to 120 million.

So, you look at the difference there: You have had this massive, hyperbolic climb in the number of employees engaged in services, versus a flat line in the number of employees engaged in actual manufacturing of goods and productive activity.

And what has this produced? People have seen these charts, like the growing disparity between the so-called upper 1% and the rest. **Figure 5** shows the share of income, in terms of the total income in the economy which goes toward the upper 1%, which are those engaged in finance, versus everyone else, who lost manufacturing jobs, and those were replaced, if at all, by employment with simple services, mostly non-union, low-wage services. And so you see, things were somewhat on an even keel going back to the '70s, whereas now, you're up over 120% in terms of the change in the share of income: It's changed by over 120%, going toward the upper 1%, and it's been collapsing for the lower 80%.

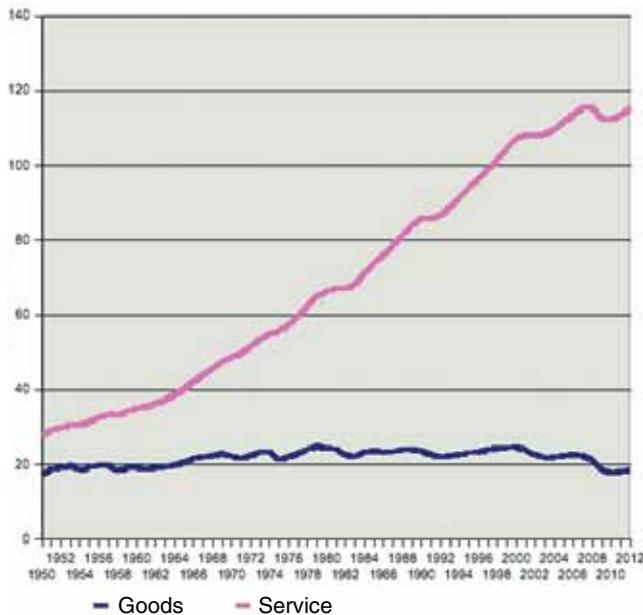
So that's been the general trend that we've been

FIGURE 3
Composition of the Work Force Employment by Sector
Percentage of Total Workers



Source: Bureau of Labor Statistics

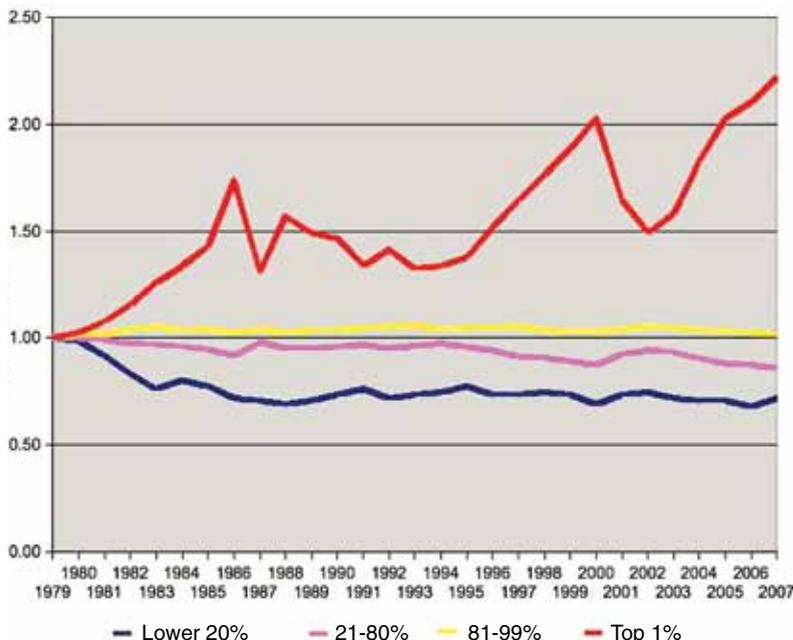
FIGURE 4
Goods-Producing vs. Service Workers
Millions of workers



Source: Bureau of Labor Statistics

FIGURE 5
Changes in After-Tax Income, 1979-2007

Indexed to 1979 = 1.00



Source: Congressional Budget Office

seeing in the economy: We've had a precipitous collapse of manufacturing, collapse in employment in productive activity, with a hyperbolic growth in finance, in speculation. And it parallels what's been happening with the NASA budget, a collapse of intention toward these kinds of front-end programs, the space program, etc.

Losing Our Scientific Capacity

And now, we see where that's leading us today. Here's another image: **Figure 6** shows terms of current in-orbit and planned NASA/NOAA, Earth-observing missions: These are satellites that are up there, looking at the Earth, studying things like the weather, and other aspects of the dynamics of our planet. This peaked in around 2010, when we had roughly 26-27 satellites, looking and trying to understand the dynamics of the planet and how it works. But because of this trend away from productivity, away from science, toward speculation, toward a hyperbolic increase in money pumping, we have moved to where now, from a peak in 2010, with about 26-27 satellites, the projection is, by 2020, we're going to have about six.

Now, what does it mean to say we're going to lose this kind of capability? I'll just point out two things that

are indicative of the capability that we get from these kinds of satellites, and then, what we face without them. There are two recent events that we can look at that give us an idea of how these satellites, as sort of an extension of our sensory apparatus, have enabled us to make appropriate forecasts to deal with the kind of extreme weather events which we're increasingly facing in this day and age.

The first one goes back to 2010. People might remember "Snowmageddon": This was when the East Coast got pounded with a massive amount of snow which created all kinds of chaos, but fortunately, because of things like the polar-orbiting satellites, we were able to make pretty accurate forecasts about what was coming, about a week or so before the event, to where we could then prepare for it. People could make emergency preparations, stockpile food, water, etc., and that did a lot toward mitigating the damage that this could have led to.

Now, what we're facing is a period where we're going to go blind, for at least a year or more, because one of the crucial weather satellites is going to go blind. Now they're saying, because of sequestration, that blindness could be extended up to another two or three years, when we're not going to have any polar-orbiting satellites with these capabilities that can lead to this kind of forecasting.

This is what someone from NOAA had to say about this period of going blind: "A seven-day forecast today is as accurate as a 36-hour forecast was 20 years ago. Having a full complement of satellites is also important." To illustrate the point, they cite "Snowmageddon." The blizzard dumped between 38 and 56 cm of snow on the mid-Atlantic in 2010. NOAA's forecasting models, using data from multiples satellites, predicted five days in advance, that 38-45 cm of snow would fall! So, very accurate.

Now, they did a model where they just took one of the satellites, and said, "Okay, what would our forecasts be, without one of these satellites?" The prediction changed to 18-25 cm. A forecast that would have left tens of thousands of people unprepared for what was to come.

So they did modeling where, with these satellites, they were able to have a point-on prediction of when

this was going to hit, how much snow, and then they could prepare for it. You take one of these satellites out of the equation—

Fan-Chiang: You get half of the difference.

Jones: Right. And as we said, we're about to face a 70% or so decline in the number of satellites that we have flying.

One other example of this is something more recent, which is Hurricane Sandy: Now, here we have an image of two different forecasts of what was going to be the effect of Hurricane Sandy. **Figure**

7a is what was forecasted to happen with Sandy as it hit, and it was precisely what happened: that this thing was going to hit the East Coast, it was going to dump this much water, it was going to have this much power, this much force, and it enabled people to prepare for that.

Fan-Chiang: That was a case where, even days before, it could have gone either way. It could have done what normal storms do, which is go back out over the Atlantic Ocean. It had a possibility of picking up more strength in Gulf, which it did, and so on, but those were all up in the air.

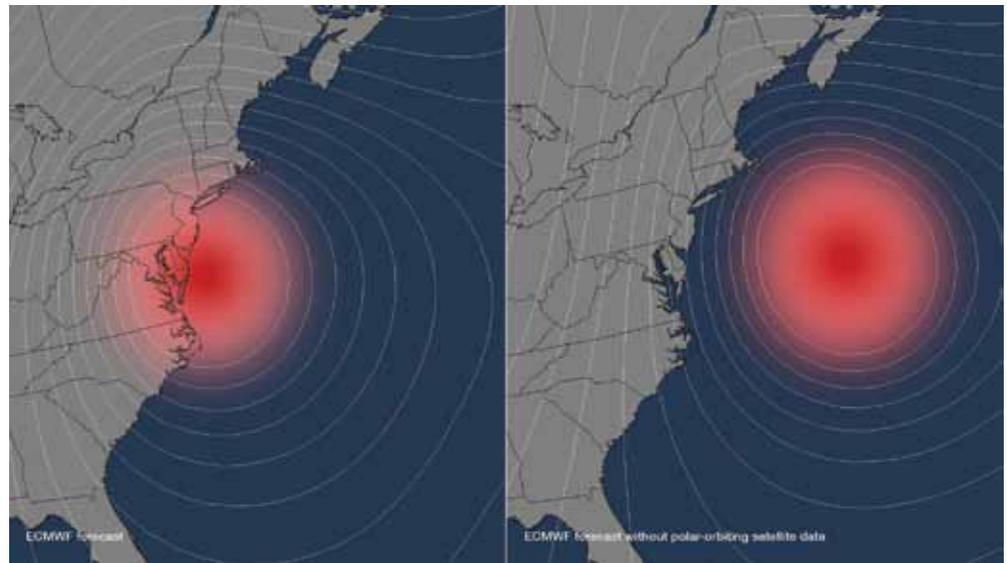
Jones: Right. And because of these satellites, they were able to accurately forecast where it was going to hit, and that in fact it was going to hit the coast, and give people at least some level of preparedness, forewarning, to prepare for this kind of hit. Now, they ran the model again (**Figure 7b**), where they took out one of these polar-orbiting satellites, and the forecast they had with the removal of one of the satellites, was in fact, this: that the storm *would miss the East Coast*, and would tail off and just go out to sea!

Now, imagine if that had been the forecast they were putting forward: "This thing's not going to hit, it's just going to tail out to sea."

Fan-Chiang: People would still be driving, airlines would still be flying, the airports would be open.

Jones: Right. And so you see the kind of damage, the kind of crisis we face in losing this kind of capabil-

FIGURE 7a, 7b
Hurricane Sandy, 2012



ity, and losing this "extrasensory" capability. It just highlights where we're heading, how we're actually devolving as a species, under the current economic paradigm, to where, even what little capabilities we were able to continue to develop up to this point, we are now losing! We're creating the conditions where man is becoming more and more vulnerable to the forces of nature, whereas at one point we were developing and evolving to where we were able to mitigate and forecast and prepare against that.

This is highlighted again, more recently, with the earthquake that just hit in Iran, a 7.8 magnitude earthquake, a massive earthquake, which—and this is something we've been looking at—occurred two days after a coronal mass ejection from the Sun. Now, what the exact relationship is there, we still need to investigate. These are the things that NASA could be investigating; these are the kinds of things we could be looking at as we increase our extrasensory capability, so to speak. What is that relationship between the activity of the Sun, and things like volcanoes, earthquakes, extreme weather?

Fan-Chiang: And also health.

Jones: Health, right: We've seen relationships between epidemics and changes in solar activity. All these things are questions, but we do see definite relationships between the activity of the Sun, the activity of other cosmic events, and then, extreme weather, extreme geological changes, health changes here on Earth.

But again, we're moving into a period where we're flying blind, because of this paradigm of anti-science, anti-culture, anti-progress, even as we're moving into a period which seems to be increasingly turbulent in terms of extreme events in our cosmos, as they affect things here on Earth. We're making ourselves more and more vulnerable to these kinds of forces.

And so, I think it really highlights the necessity for a paradigm shift, to get back to the Classical paradigm, where science, culture, morality, and the human creative spirit really are the driving forces of mankind, and mankind's relationship to the universe around us.

Appendix

What Creates Wealth? Production vs. Overhead

by John Hoefle

There is a critical need to put people back to work, to restore employment that will allow them to survive. But putting people back to work in the same types of jobs they had before the financial system exploded will not solve our problems. Jobs are not just about providing money to pay the bills; what a population does for its living determines whether that society will prosper or decline.

Economic activity is best measured in terms of production versus overhead. These are not value judgments on how well a person does his or her job, but are based upon the nature of the work being performed. A good example of productive activity is manufacturing, such as the chain of processes that turn ores into finished metals, and turn those metals into products like machine tools and power plants. Wealth is created in this manner, since the value of the outputs are greater than the costs of the inputs and the processing.

On the other hand, banking is an example of overhead. Banks do not create wealth, but merely move it from one pocket to another.

The distinction is crucial. Productive activity creates wealth, while overhead activity consumes that wealth. Some of that consumption is necessary. We gladly pay the costs of caring for our children, and perhaps less happily pay the costs of the roads, water and

sewer systems, and related common infrastructure that allow our society to function. In fact, if we didn't make such investments—as in research and development, major infrastructure projects such as the TVA, and education—our society would stagnate and die. But in a properly structured economy, the wealth created by productive activity exceeds the amounts spent on necessary overhead by a considerable margin, making the necessary overhead easily affordable.

If a society abandons productive activity in favor of overhead—if it ceases producing wealth in favor of merely consuming its own surplus and wealth produced by others—then the costs of overhead activities become burdensome, even deadly. This is where we are today.

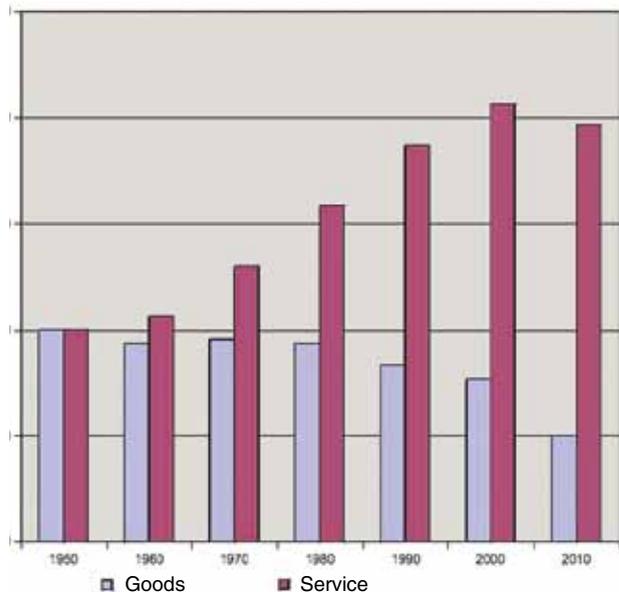
Look at Labor

The essence of the problem can be seen in Figure 2 (p. 36), which compares the contributions to GDP from the manufacturing sector with the contributions to GDP from the FIRE (finance, insurance, real estate) sector, as reported by the U.S. Bureau of Economic Analysis.

However, the truth is actually worse, as the graph itself is a constructive fraud, in that it presents the activities of the FIRE sector as *contributing* to the economy, when in truth, many of those activities are parasitical. According to the official GDP calculations, the egregious frauds by Wall Street, the derivatives bets at the big banks and AIG, and the run-up in real estate values caused by financial speculation—activities which blew a giant hole in the U.S. and global economies and threw millions out of work—all *contributed* to our economic product. It's the equivalent of counting the growth of a giant tumor as proof the patient is thriving, or counting shoplifting as sales.

Not everything in the FIRE sector is theft. The real estate market provides places for people to live and work, and the banking sector provides essential financial services, for example; overhead, but necessary overhead. However, much of what occurs in the FIRE sector is malignant. The same banking system that provides your checking account also manipulates interest rates, supports the drug trade by laundering its money, finances the movement of productive jobs offshore, jacks your credit-card interest payments through the roof, illegally forecloses on homes, funnels billions into Washington to prevent corrective regulations like the reinstatement of Glass-Steagall, and a host of other crimes. All of which, according to the Bureau of Economic Analysis, contribute to the fiction known as GDP.

FIGURE 1
**Goods-Producers vs. Service Workers,
 Per Capita**



Source: Bureau of Labor Statistic

Production Deficit

Now look at a related aspect of this problem, by comparing employment in the production of goods to employment in the providing of services (Figure 4, p. 37). The goods-producing category includes manufacturing, construction, mining and logging—all useful activities. The service-providing sector includes trade, transportation, utilities, information processing, financial activities, professional and business services, education, health care, leisure and hospitality, and other miscellaneous services.

Many of these services are quite useful, even essential. But economically speaking, they are a cost which must be paid out of the profits generated by production. Since 1950, employment in goods-production has remained essentially flat, growing from 17.3 million to 18.4 million, whereas employment in services has more than quadrupled, from 28 million to 115 million.

As bad as that is, it understates the problem, since our population has doubled since 1950. **Figure 1** shows the same employment figures on a *per-capita* basis, indexed to 1950 to give a different view of the changes. The accelerating decline in the proportion of our population involved in goods production is both obvious and ominous, but so is the decline between 2000 and 2010 in the service workers. We see the rise of an unsustain-

able system, and the beginning—but only the beginning—of its collapse, The worst is yet to come.

To put these changes in the context of the workforce as a whole, we have Figure 3 (p. 37), which shows the relative proportions of employment in manufacturing; non-manufacturing goods production; trade, transportation, and utilities (TTL); government; and other private services. The latter three categories (TTL, government, and other private services) collectively comprise the service sector.

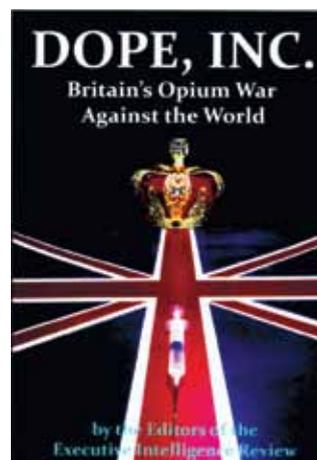
In 1950, manufacturing (31%) and non-manufacturing goods production (7%) accounted for 38% of total employment, but by 2012, that had fallen to 9% and 5%, respectively, or 14% of total employment. On the service side, TTL went from 21% to 19% for the same period, while government went from 14% to 16%, and other private services nearly doubled, from 27% to 51%. Overall, services grew from 62% of jobs in 1950 to 86% in 2012.

It should be obvious by this point that simply putting people back to work in the same types of jobs they had before, will not solve the problem. What we were doing before, collectively, *is* the problem. We became a nation of consumers, not producers.

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Planetary Defense: Progress And Enormous Challenges

Benjamin Deniston reports from the Planetary Defense Conference in Flagstaff, Arizona, sponsored by the International Academy of Astronautics.¹

April 26—The Third Planetary Defense Conference was held on April 14-19, bringing together experts from a wide range of fields to discuss how to defend the Earth from the threats inherent in our Solar System. While the Chelyabinsk asteroid impact over Russia on Feb. 15 alerted the general public to the importance of planetary defense, the conference showed that a dedicated and growing community has been focusing on

this issue for the past two decades. There were hundreds of participants, including from NASA, the European Space Agency (ESA), Russia's Roscosmos, Germany's DLR, and other space agencies; Lawrence Livermore and Los Alamos National Laboratories, the Russian Academy of Sciences, the United Nations, various aerospace corporations, emergency response organizations, and universities from around the world.

The conference was packed with presentations on



The conference banner. Flagstaff is 43 miles from the Barrington Crater (pictured), formed by the impact of a of an asteroid fragment 50,000 years ago.

all aspects of the subject, from detecting threatening asteroids, to disaster response measures if one were to hit Earth; means of deflecting an asteroid; and studying its composition and structure for clues about the early formation of the Solar System.

A special session began the conference, "Preliminary Look at the Chelyabinsk Event," which was open to the public, due to the extraordinary interest in the subject.

Presentations included a report on a two-week field study in the Chelyabinsk Region by a team of scientists from Russian institutions and the SETI Institute in California.

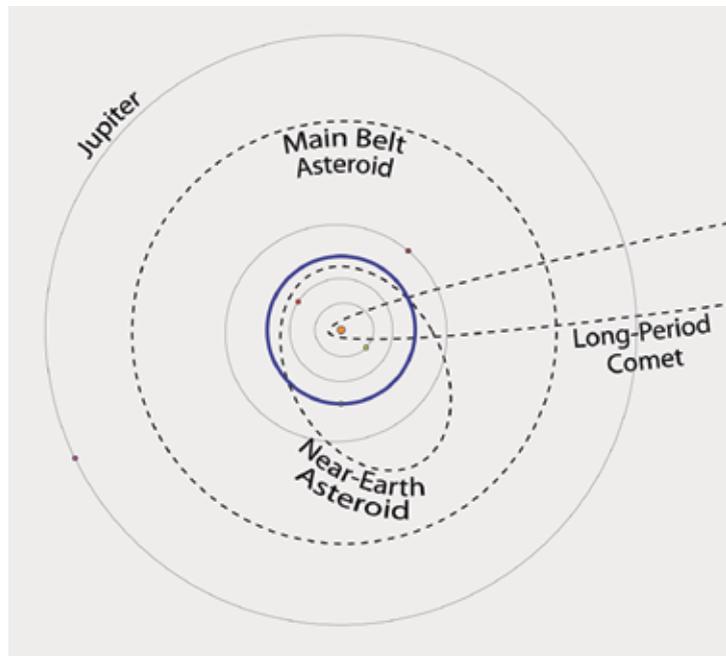
Recent History and Context of Planetary Defense

Unfortunately, despite decades of work on the subject, many of the key outstanding issues posed today are the same ones that were identified when government efforts related to planetary defense started to get moving. The lack of fundamental progress over the

1. A longer version of this article will appear in *21st Century Science & Technology* magazine.

FIGURE 1

Comparison of a near-Earth Asteroid Orbit and Long Period Comet Orbit



Near-Earth asteroids have different orbits than the “main belt” asteroids, which remain between Jupiter and Mars. NEOs can cross the Earth’s orbit on a regular basis, with the potential for an collision.

past two decades is not the fault of the scientists working in this area, but expresses the larger trend of national and international economic stagnation and regression since the assassination of President John F. Kennedy.

The United States has abandoned the general practice of science-driver programs, of which Kennedy’s Apollo Project was a prime example. Such programs create technological revolutions that fundamentally change mankind’s relationship to the universe, inspire nations, and shift the economy as a whole onto a trajectory that optimizes creative discoveries that benefit the general welfare. Absent that approach, the progress in planetary defense research has been largely incremental.

By the early 1990s, there was a growing recognition of the threat from space objects, and the most immediate task was to see if any of the largest near-Earth objects (NEOs),² those which could threaten all civiliza-

tion, were on an impact course. According to an individual involved in this initial effort, to speed up the search, certain non-public defense assets were allocated. It turned out that ground-based assets already designed to look for small man-made objects orbiting the Earth could do a decent job of finding much larger natural objects much farther from the Earth. It was determined that none of the largest asteroids posed a threat over the next few decades (an assessment that NASA was able to publicly provide a few years ago). This left two areas of concern: small to medium-sized asteroids, and long-period comets.

Small to medium-sized asteroids can pack enough energy to level a city, a nation, or even a continent. There are many more of them than there are large NEOs, and they would be hard to deflect because their small size makes them difficult targets.

Long-period comets take the challenge to a new level (**Figure 1**). They are generally larger than asteroids, can travel significantly faster, and can have unpredictable trajectories. Furthermore, they reside in the outermost regions of the Solar System (much, much farther away than asteroids), where they are presently impossible to see with existing systems, and can only be detected when they are coming close to Earth (when it might be too late to act if one were on an impact course).

Detection: Finding Asteroids Before They Find Us³

Near-Earth object discovery programs were the subject of the second session of the conference, “Discovering NEOs—The State of the Art.”

There are millions of asteroids in the inner Solar System, many of which cross the Earth’s orbit on a regular basis. The exact number is unknown. For those of the size of the one that exploded over Chelyabinsk (15-20 meters in diameter), it was estimated at the conference that there are on the order of 10 million asteroids populating the inner Solar System. Only about 1,000 are presently known! *Before the Earth can be de-*

2. Near-Earth objects, or NEOs, are asteroids and comets that orbit in the inner Solar System. Sometimes the term near-Earth asteroid is used as well.

3. To borrow from the title of Don Yeomans’ book, *Near-Earth Objects: Finding Them Before They Find Us* (Princeton University Press, 2012).

TABLE 1
The Population of Near-Earth Objects

Size Range (Diameter in Meters)	Approx. Estimated Population	Approx. Number Found	Approx. Percentage Found	Range of Impact Effects	
30 and less	12 Million	1200	~0.01%	AIRBURST	Could burn up in the atmosphere unnoticed, or cause structural damage and casualties on a local scale significantly worse than in Chelyabinsk.
30-100	500 Thousand	2000		CITY-KILLER	Could completely destroy a region from the size of a city to a medium-sized nation.
100-300	21000	2100	~10%	NATION-KILLER	Could devastate a region from the size a medium-sized nation to an entire continent. Ocean impacts could cause very wide-spread tsunami devastation.
300-1,000	4800	2400	~50%	CONTINENT-KILLER	A territory ranging from the size of a continent to the entire globe.
1000 and greater	900	860	~95%	CIVILIZATION THREATENING	The entire Earth would be affected by the impact effects, including an "impact winter."

The population estimations are rounded from NASA's 2012 estimates. The impact effects express the consensus of a number of sources; note that there are many details which would play into any actual impact situation.

fended from an asteroid threat, that threat must be identified—with enough warning time to act.

However, the Chelyabinsk impactor was relatively small. **Table 1** shows the range of NEO sizes, with a corresponding range of intensity of the impact effects: from those that burn up high in the atmosphere, never causing any noticeable effect on the ground; to those that would impact with so much energy that enough material would be lofted into the upper atmosphere that the Sun would be blocked, the climate would be altered, and photosynthetic life worldwide would be devastated—including the food crops which sustain human civilization.

Currently, the majority of the known near-Earth objects have been discovered by ground-based telescopic survey programs funded by NASA. In 1994, Congress directed NASA to identify and catalog 90% of the large asteroids (1 km and larger) within 10 years. With steady progress on meeting the 1 km goal, in 2005 Congress directed NASA to find 90% of the asteroids down to 140 meters by 2020. With current funding levels, this goal will not be met.

Ground-Based Survey Programs:

Don Yeomans, the Supervisor for the Solar System Dynamics Group at NASA's Jet Propulsion Lab (JPL) and Manager of the Near-Earth Object Program Office, gave an overview of the current ground-based surveys dedicated to search for near-Earth objects. These programs, sometimes loosely referred to as part of the SpaceGuard program, survey large sections of the sky

each night, imaging the same location multiple times to then compare the images to look for moving objects. Three observation programs have contributed to the bulk of that effort to date:

Lincoln Near-Earth Asteroid Research (LINEAR): Using two telescopes in Socorro, N.M., this program led in the NEO discovery effort from 1998 to 2004. The discovery rate has since fallen off, but they are still operating, and are now helping to bring a next-generation survey telescope, DARPA's Space Surveillance Telescope, into the asteroid detection effort.

Catalina Sky Survey: Three telescopes, two just outside of Tucson, Ariz., and the third in Siding Spring Observatory, Australia. Overtaking LINEAR in 2005, Catalina has contributed the most discoveries of near-Earth objects so far.

Panoramic Survey Telescope and Rapid Response System (Pan-STARRS): Currently one new telescope in Hawaii, and a second under construction. This newest and most advanced asteroid search system is expected to continue to expand the number of discovered asteroids over the coming years, perhaps overtaking Catalina.

While NASA is leading the efforts, other nations are contributing or are planning to contribute to the effort:

La Sagra Sky Survey (LSSS): The European Space Agency's Space Situational Awareness (SSA) program, is supporting the LSSS, which is operating in Granada, Spain, in their search for near-Earth objects. The head of the near-Earth asteroid division of the SSA,

Detlef Koschny, presented the status of their program.

AZT-33VM: The Russian Academy of Sciences is developing a new ground-based telescope to search for asteroids. Located in Irkutsk, Russia, AZT-33VM is expected to begin operations by mid-2014, and to be fully operational 1-2 years after that. This was presented by the head of the Russian Academy of Sciences Institute of Astronomy, Boris Shustov.

These ground-based observation programs, along with a few others, have been most successful in finding larger asteroids. They can only detect small or medium-sized asteroids (such as city- or nation-killers) when they come close to the Earth. Because these searches cannot survey the entire sky every night, smaller or medium-sized asteroids can often sneak up, coming very close, or even passing by, before they are detected—if they are seen at all. This means they could impact at any moment with little or no warning, as the Chelyabinsk asteroid did.

Searches that do not look as deep into space, but survey the entire sky more rapidly, are now being developed. These would not provide enough advanced warning to stop an impact, but would ensure that there are at least no surprises:

Asteroid Terrestrial-impact Last Alert System (ATLAS): In an attempt to get at least a few days or weeks of warning time, NASA is beginning to fund the development of the ATLAS program. When operational in 2015-16, this system will survey the entire night sky visible from Hawaii twice each night, to detect any incoming asteroids. This will be done by trading off depth (distance) of search for speed of survey, in order to see the entire visible nighttime sky. As presented by the head of the ATLAS project, Dr. John Tonry of the University of Hawaii, this is intended to provide warning times of at least a few days for city-killing asteroids, and up to a few weeks for nation-killing asteroids: not enough time to stop impact, but, in theory, enough time to try to evacuate or otherwise prepare for the consequences.

Fly-Eye Telescope Concept: The ESA's Space Situational Awareness program is also trying to develop a similar survey system, which would be able to detect asteroids down to a size of 40 meters across, providing at least three weeks' warning time before impact. The system calls for 4-6 telescopes stationed in different locations, although they only have funding to build one prototype. Program Head Koschny said that within four

years, he hopes to have some results from the prototype.

While these ground-based programs continue to operate, and new programs are coming online, there are fundamental limits to their capabilities. If we are to discover threatening asteroids with enough warning time to be able to change their orbit or to destroy them so they don't hit the Earth, then much longer warning times will be needed, and the total number of known and tracked near-Earth objects must rise from its present level of ~10,000, towards many hundreds of thousands, or even millions.

This will require some qualitative changes to the approach.

Space-Based Observation

Simply extrapolating the current discovery rate indicates that it would take another 180 years to get to around 1 million near-Earth objects.⁴ Not only is that far too long to wait, but it could not actually happen by extending the current types of observation programs.

During an overview of NASA's activities in detecting near-Earth objects, NASA headquarters program executive for the near-Earth object program office, Lindley Johnson, said the discovery rate has probably already begun to level off. He explained that the limits are being reached for what can be done with existing technology.

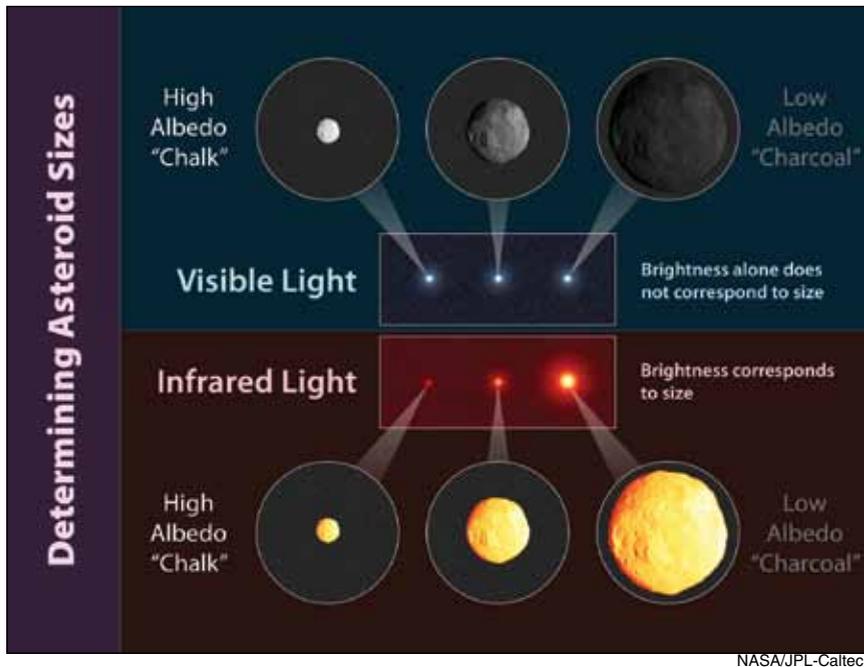
Not only are the smaller asteroids much more difficult to see, but searching from the Earth's surface has inherent limitations:

- Viewing can only occur at night (the half of the sky facing away from the Sun);
- Weather can pose problems;
- The atmosphere causes distortions, and blocks certain wavelengths of light from reaching the Earth's surface;
- Many asteroids have orbits that ensure they won't be visible from the Earth for years.

To address these issues, asteroid-detection systems must move off the Earth, and into space. Observation systems in space, either in Earth orbit, or stationed at

4. In 2012 there were almost 1,000 new near-Earth objects discovered, and the yearly number of asteroids discovered has increased by ~50 a year (averaged over the past 17 years of observation). A discovery rate of 1,000 per year, increasing at 50 per year, would bring the current level of 10,000 to 1,000,000 in about 180 years. However, this mathematical extrapolation is not a realistic scenario for the reasons discussed above.

FIGURE 2



This chart illustrates how infrared is used to more accurately determine an asteroid's size. As the top of the chart shows, three asteroids of different sizes can look similar when viewed in visible light. This is because visible light from the Sun reflects off the surface of the rocks. The more reflective, or shiny, the object is (a feature called albedo), the more light it will reflect. Darker objects reflect little sunlight, so to a telescope from millions of miles away, a large dark asteroid can appear the same as a small, light one. In other words, the brightness of an asteroid viewed in visible light is the result of both its albedo and size. The bottom half of the chart illustrates what an infrared telescope would see when viewing the same three asteroids. Because infrared detectors sense the heat of an object, which is more directly related to its size, the larger rock appears brighter. In this case, the brightness of the object is not strongly affected by its albedo, or how bright or dark its surface is. When visible and infrared measurements are combined, the albedos of asteroids can be more accurately calculated.

other locations in the Solar System, have the potential to overcome each of these limitations. One system has successfully demonstrated the initial technology, and others have been proposed:

Near-Earth Object Wide-field Infrared Survey Explorer (NEO-WISE): Launched in December 2009, NASA's WISE space telescope imaged the entire sky in infrared wavelengths (which do not reach the Earth's surface because of the atmosphere) until the infrared sensors used all their coolant supplies. When the primary mission ended, NASA's Planetary Division funded an extension of the program, called NEO-WISE, to use the WISE telescope to search for near-Earth objects (including examining the existing WISE observation data for NEOs). Since WISE was not initially designed to look for asteroids, NEO-

WISE did not find a huge number of new near-Earth objects (though it did find 135), but it was able to demonstrate the potential benefits of infrared systems. Since it also imaged many already known NEOs, the data from the NEO-WISE mission provided for improved estimations of their sizes, and new estimates of the population (**Figure 2**).

Near-Earth Object Camera (NEOCam): Proposed to NASA in 2005, and again in 2010, NEOCam would be an infrared space telescope that would orbit the Earth searching for near-Earth objects. The infrared detector would be passively cooled (meaning it would not require coolant), and in 2010, the team was given some initial funding to make prototype infrared detectors that would be optimized to search for near-Earth objects. As Amy Mainzer, principal investigator of the NEO-WISE program and the NEOCam proposal, presented at the conference, the science team expects that NEOCam would find two-thirds of the near-Earth objects down to a size of 140 meters, as well as a significant number of smaller ones. One of the benefits of being outside the Earth's atmosphere is the ability to see closer

to the Sun, into regions blocked from the Earth, she explained.

Russian Academy of Sciences (RAS) Proposal: Russia is considering a space telescope system that would look for near-Earth objects in visible wavelengths. At the conference poster session, one RAS concept was for either one or two optical space telescopes that would image the entire visible sky once a day from Earth orbit. The general goal would be to find asteroids down to 100 meters in diameter, no later than 15-25 days before possible impact. An exact design has not yet been decided upon.

Sentinel Mission: In 2012, the non-profit B612 Foundation announced plans to raise private donations to design, build, and launch an infrared space telescope to search for NEOs from a Venus-like orbit. If

they can meet their fundraising goals, the Sentinel Space Telescope would launch in 2018, and its designers claim that it would discover more than 90% of the asteroids down to 140 meters over 6.5 years of operation. They would expect to find 20,000 NEOs within the first two months of operation (twice the presently known population, after decades of searches). B612 CEO Ed Lu presented an update on their work at the conference.

These four proposed space missions are currently in some stage of design or development, and there have been other variations proposed. With millions of undiscovered near-Earth objects orbiting the inner Solar System, programs like these are absolutely needed, and ideally, a combination of such programs (each with its own benefits and drawbacks), would provide the beginnings of the qualitative change required in the search effort.

Unfortunately, there was no serious discussion at the conference of developing systems to ensure the early detection of long-period comets, which are much more difficult to detect early enough to stop an impact, as they spend the vast majority of their time much farther away. Although less frequent than asteroids in their approach to Earth, it would take only one long-period comet to end human civilization. With current observation systems, there would be at most a few years' warning (likely not long enough to design, build, launch, and execute a successful deflection mission with today's capabilities).

As a minimal effort, and part of a layered defense, systems like NASA's ATLAS and the ESA's Fly-Eye concept would give a few days or weeks' warning time before an impact, enough for some emergency preparations, but not enough to prevent the impact. Space-based surveys are needed to add another layer, to discover entire populations of NEOs down to certain sizes, allowing specialists to calculate their positions decades into the future, hopefully giving years of warning time before an impact. With that amount of time, it becomes possible to take active defense measures.

Planetary Defense

The fourth conference session was dedicated to techniques and missions for stopping an asteroid from impacting the Earth, with nearly 30 presentations on the subject.

Asteroid and comet impacts with the Earth could be prevented, given the right technologies. The first consideration is *time*. If the impact can be predicted many decades in advance, the action required could be as simple as slowing the asteroid down by less than one centimeter per second. Even this small change, if effected many years before Earth impact, could add up to enough of a change in position to avoid impact. If there is less warning time, it may be necessary to use thermonuclear explosives to blast the object into many pieces.

The more warning time given, the less effort it takes to deflect an incoming asteroid or comet. However, there are uncertainties that come with longer warning times. The farther into the future a trajectory is projected, the greater the range of error. This depends upon how precisely the orbit of the asteroid or comet is known, but also upon certain non-gravitational factors, such as solar radiation, which can have a significant influence on the position of small and-medium sized objects over decades.

While a number of different deflection systems have been theorized and proposed, only a few are considered feasible in the near term. The National Research Council published a comprehensive report on planetary defense in 2010, which concluded that thermonuclear explosives and "kinetic impacts" (running a spacecraft into the asteroid or comet) are the only options available with existing technologies.⁵

It must be emphasized that these are the same fundamental options that were available in the early 1990s, and the more advanced capabilities that were being discussed back then have not been implemented (such as nuclear rockets, electric propulsion, lasers, and D-He-3 fusion drivers).

However, even talking about the "available options" is misleading. Although the technologies exist in principle, they have never been tested. There have been extensive studies, but only on paper and in computers, and certain fundamental questions cannot be answered until physical tests are conducted. For example, how exactly will the asteroid respond to an impact or an explosion? Will an impact kick off excess material, increasing the deflection effect, or will the

5. "Defending Planet Earth, Near-Earth Object Surveys and Hazard Mitigation Strategies," by the National Research Council's Committee to Review Near-Earth-Object Surveys and Hazard Mitigation Strategies, 2010.

impact be totally absorbed by the body? These are some of the outstanding questions that were discussed at the Flagstaff conference.

The key programs are summarized here:

Asteroid Impact Deflection Assessment (AIDA):

Andrew Cheng of Johns Hopkins University Applied Physics Laboratory presented the ESA's AIDA mission, a kinetic impact test scheduled for launch in 2019, and impact in 2022. The mission will include two spacecraft, an impactor (DART), built at Johns Hopkins, and a second spacecraft to monitor the effects of the impact (AIM), built by ESA. DART will crash into the smaller asteroid of a binary asteroid system, 65803 Didymos, and AIM will be able to observe from a safe distance, to determine the efficiency of the impact by measuring the resulting change of the smaller asteroid's orbit around the larger asteroid (an effect that is easier to measure than the change in the orbit of an asteroid around the Sun). Vital information about the response of an asteroid to kinetic impacts will be gained, including impact effects such as crater size, material ejected, seismic effects, and shock waves.

Impactor for Surface and Interior Science (ISIS):

This is a proposed asteroid impact mission that would work in conjunction with the existing OSIRIS-REx sample return mission. OSIRIS-REx is a scientific mission scheduled to launch in 2016, rendezvous with asteroid 1999 RQ36, collect a sample, and return it to Earth in 2023. Presented by Steve Chesley of JPL, the ISIS proposal is to launch a second spacecraft, which would impact asteroid 1999 RQ36 after OSIRIS-REx collected its sample, but before it leaves the asteroid. OSIRIS-REx would then be able to observe the impact and the subsequent effects, providing valuable information about kinetic impact effects. They are seeking NASA funding for the mission.

Iowa State Asteroid Deflection Research Center (ADRC): [Bong Wie](#) started this program in 2008. Currently Professor Wie and his team have a grant from the NASA Innovative Advanced Concepts (NIAC) program to design a system that can deliver a thermonuclear explosive device to disrupt a small to medium-

sized asteroid when there is short warning time before impact, a system called the Hypervelocity Asteroid Intercept Vehicle (HAIV). Short warning time translates into the requirement for very fast intercept speeds and the need to apply large amounts of energy, raising a number of difficult problems.

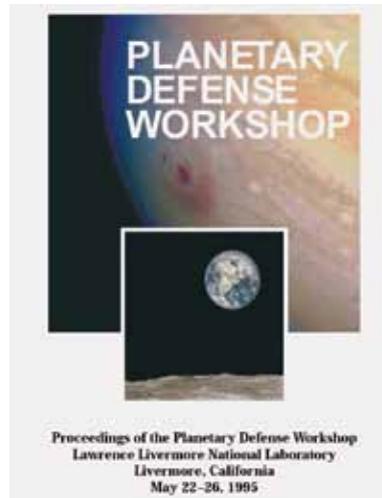
NEOShield: Starting in 2012, the European Commission began funding a 3.5 year program to study asteroid deflection. NEOShield does not have not

enough money to launch any space missions, but they are studying how to stop an asteroid impact. As presented by Alan Harris of the German Space Agency, the NEOShield project leader, they are focusing on what they determined to be the three most promising options for stopping an impact: a thermonuclear blast, a kinetic impact, and a "gravity tractor" (whereby a spacecraft would gravitationally pull the asteroid with the spacecraft's own weak gravitational force, over a long period of time, slowly changing the asteroid's orbit). The goal is to design an asteroid deflection demonstration mission,

though they will not have the funds to build and launch it under this program.

Lawrence Livermore (LLNL) and Los Alamos (LANL) National Labs: The energy density supplied by thermonuclear processes is the most powerful option currently available for the defense of Earth. Individuals at both LLNL and LANL have studied the use of thermonuclear explosives for either deflection or destruction of a threatening asteroid or comet. As in the case of kinetic impacts, the biggest uncertainty is how asteroids will respond to the thermonuclear blasts, depending on their composition, density, and other factors.

Dr. Paul Miller of Livermore gave an overview of the activity at LLNL, discussing both deflection and destruction scenarios, and his colleague Kirsten Howley discussed how a nuclear blast could be used to alter the trajectory of an asteroid without breaking it apart. Catherine Plesko of LANL discussed their work, examining how the radiation from a nuclear blast would interact with the surface of an asteroid or comet, and translate into a deflection.





EIRNS/Stuart Lewis

Lyndon LaRouche addresses a conference on April 13, 1983, on “new physical principles” such as directed-energy technologies for strategic defense.

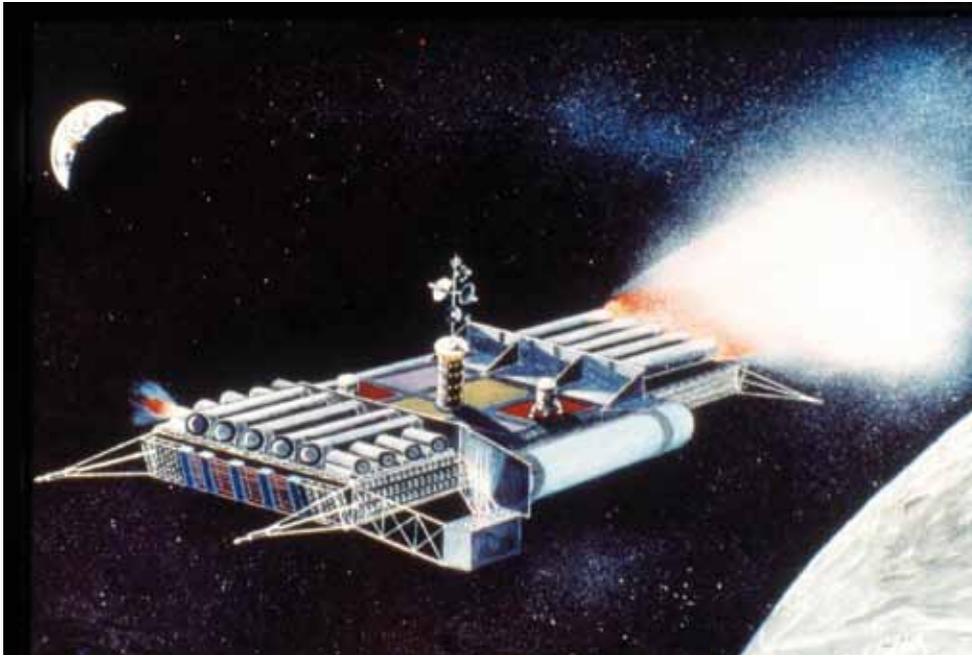
Directed Energy Solar Targeting of Asteroids and exPloration (DE-STAR): Philip Lubin, University of California at Santa Barbara physicist, and Gary Hughes, California Polytechnic San Luis Obispo professor, presented their DE-STAR concept at one of the poster sessions. This would be a scalable, modular system, which would convert solar energy into electricity to power an array of lasers directed at a target. The key is the “phased array” technology, which allows for the multitude of lasers to be steered and focused to incredible energy densities at the target. If the system was large enough, it could produce a laser beam that would vaporize an area on the surface of the asteroid, with the vaporized material coming off the asteroid generating a thrust more powerful than the rocket engines of the Space Shuttle.

As with the observation systems, no one system will be the single perfect program, and a layered defense will be needed. As of today, the likely response to small near-Earth objects would have to be relatively fast, requiring the type of system being designed at the Iowa State ADRC. If there is a longer warning time, a kinetic impact mission could be an option, or thermonuclear explosives if the asteroid is too large. For long-period comets, a very large amount of energy would have to be deployed relatively quickly. The capabilities of Lawrence Livermore and Los Alamos would be taxed to their fullest extent, and that might not even be enough.

Again, the physical testing is key. There are still too many unknowns about how an asteroid will respond to a kinetic impact or thermonuclear blast. Participants at the conference emphasized that tests with kinetic impact missions can provide vital information for both thermonuclear and non-thermonuclear scenarios. But one test would not be enough. There is a wide range of different compositions and structures of asteroids and comets. Some are solid metal; others are rocky, with varying degrees of density, porosity, and homogeneity. Understanding how they will respond will require more tests and exploratory missions.

A last point of emphasis should be placed on directed-energy proposals. DE-STAR is the most recent in a short but important list of studies investigating the application of lasers to asteroid deflection. Directed-energy systems have many inherent benefits unmatched by kinetic systems, as Lyndon LaRouche insisted 30 years ago when he proposed the Strategic Defense Initiative (SDI), as it was adopted by President Reagan (but rejected by the Soviet Union and sabotaged from within the U.S. government).⁶ They can act across space at the speed of light, whereas it may take days, or even years, for a spacecraft to travel to its target. Once a system is in place, each individual application of the system is relatively cheap when compared with designing, building, and launching a new dedicated space mission. These benefits could be critical for the challenge of very small asteroids, such as the one that impacted over Chelyabinsk, where a very rapid response would be critical.

6. See for example, “Draft program for a U.S. beam program,” *EIR*, Nov. 30, 1982.



Painting by space visionary Krafft Ehricke of a nuclear-powered freighter traveling between the Earth and the Moon.

Looking to the Future

The Planetary Defense Conference continued the legacy of similar conferences over the past two decades. Incremental progress was shown in many key aspects of planetary defense, and a depth of scientific knowledge and potential was demonstrated. The outstanding question is whether this potential will be developed to the extent needed.

Looking at the challenges ahead from the perspective of a science-driver, there are key, long-awaited areas of development that will revolutionize mankind's ability to defend life on Earth:

Advanced propulsion: While nuclear propulsion systems were already well on their way in the 1960s and 1970s, they were abandoned, and mankind is still bound by chemical propulsion. The energy densities of nuclear fission and thermonuclear fusion create the potential for space propulsion systems that are orders of magnitude more efficient, faster, and more powerful.

Directed-energy systems: Controlling directed-energy systems (as the general category of technologies was to be developed had the LaRouche-Teller version of the SDI gone through) would provide the basis for a revolution in planetary defense. Expensive, dedicated

one-shot missions could be replaced with rapid speed-of-light action, available on command.

Moon-Mars infrastructure: Permanent bases on the Moon, and then on Mars (as envisioned by the late space visionary Krafft Ehricke), would revolutionize mankind's access to the Solar System. Resource development through lunar industrialization would be a first step, and expanding space infrastructure could tame asteroid orbits in the Solar System, as dams and irrigation systems tame rivers on Earth. Likewise, they will then be turned from a threat to a resource.

These were the basic areas identified and expected to be developed over a few decades at a 1992 Los Alamos NEO Interception Workshop, and even that was far behind what could have already been done had President Kennedy's vision been maintained. Today, the United States and other nations have suffered from decades of decline of the physical economy and skill levels of the workforce, and much of the potential to achieve these objectives has been squandered.

It is clear that a comprehensive defense of Earth from these threats is beyond the scope of any one nation, and requires a new level of strategic cooperation among nations. New space capabilities must be developed; new technologies are needed. Perhaps most important, new levels of trust and strategic cooperation among key nations—specifically the United States, Russia, and China—are needed to bring mankind into space for a peaceful, cooperative strategic defense of Earth.

Either mankind acts as one, for its defense, or we face the threat of extinction.

As was demonstrated in Flagstaff, an in-depth scientific capability exists, but it must be utilized and developed.

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Toward a Renaissance of Classical Music and Science

by our Wiesbaden Bureau

The final panel of the April 13-14 New Paradigm conference of the Schiller Institute, held in Frankfurt, Germany April 14, was devoted to the question of reviving Classical culture. Coming the day after a magnificent Classical concert, the presentations and discussions served as a point of reflection upon that profoundly moving experience, as well as a discussion of the way forward.

The April 13 concert featured selections from operas by the great Italian composer Giuseppe Verdi, whose 200th birthday is being celebrated this year, and a performance of Wolfgang Amadeus Mozart's Requiem Mass in D minor, by a largely amateur chorus of political activists with the Schiller Institute. All the music was performed at the "Verdi tuning" of A=432 Hz.

There were three parts to the final session. First, a



EIRNS/Christopher Lewis

The Schiller Institute Chorus and Orchestra, joined by several professionals, performs Mozart's Requiem Mass, at the Verdi tuning of A=432 Hz.

presentation on “*The Current World Crisis: Its Social Nature and Challenge to Social Science*,” by Andrey Fursov, a historian, and director of the Russian Studies Center at the Moscow University for the Humanities, Izborsk Club, Russia. The second part was a panel on “*Aesthetical Education and Beauty*,” which was led by Helga Zepp-LaRouche. Her brief remarks were followed by similarly brief presentations by Italian opera singer Antonella Banaudi; the chairwoman of the Movimento Solidarietà (Movisol, the LaRouche movement in Italy) Liliana Gorini; and John Sigerson, the Schiller Institute music director in the United States. Thirdly, there was a discussion period and wrap-up statements by Helga and Lyndon LaRouche.

We present here the full remarks by Fursov, Zepp-LaRouche, and Banaudi, a summary of the presentations by Gorini and Sigerson, and the concluding discussion.

Andrey Fursov

An Asymmetrical Answer To the British Empire

Mr. Fursov’s speech was titled, “*The Current World Crisis: Its Social Nature and Challenge to Social Science*.”

Dear Colleagues:

First of all, I would like to express my gratitude to the organizers of the conference, who invited me to speak here.

I would like to start my talk with a quotation from the quintessential British imperialist, Winston Churchill, who, in 1940, wrote in a letter, that “Great Britain was fighting not against Hitler, and not even against National Socialism, but against the spirit of the German people, against the spirit of Schiller, so that this spirit would never be reborn.”

But now we are here, at a conference which was organized by the Schiller Institute, and it is our kind of asymmetrical answer to the British Empire. . . .

Crisis has become a code word of our time. But the question is—a crisis of what? We are told that it is a crisis of finance, it is a crisis of state, it is a crisis of education—so, it is a crisis of everything. But what does this mean, to be a crisis of everything? A crisis of everything means a systemic crisis. It is a crisis of the social system, and this social system is capitalism.

So, first, a crisis of capitalism, and only secondly, a crisis of civilization, mankind. But what is capitalism? Descartes used to say “define the sense of the words.” My working definition is that capitalism is a complicated institutional system which limits capital in its own long-term and holistic interests, and ensures expansion in space, externalizing the crisis, and exploitation.

The last element is vital, because capitalism, like antiquity, like the slave system, is an expansively oriented system. When in the course of the evolution of capitalism, the global rate of profit was diminishing, capital used to carve out parts of known capital zones, and transform them into the capitalist periphery, the zone of raw materials extraction, and that of cheap labor. But in 1991, with the fall of the socialist camp, including the U.S.S.R., and with the start of semi-gangster type of capitalism in Russia, non-capitalist zones evaporated. Now capitalism is everywhere. It encompasses all the globe. Complete victory.

But every acquisition is a loss.

Now there is no place to expand. Intensification of capitalism is the whole agenda. The problem is that capitalism is an extensively constructed system in principle. Several institutions—the nation state, civil society, politics, and mass education—limit capital’s possibility to exploit the core of the system, in the way, or on the scale it does at the periphery. The institutions I have mentioned externalize exploitation, somewhat compared to the way Solon’s reforms did in ancient Athens.



EIRNS/Daniel-Enrico Grasennack-Tente

Lords of the Crisis Rings

I do not want to minimize the level of exploitation in the so-called highly developed countries, but there is a certain limit to it, or, to be more precise, there was in the period of 1945-1975. It is no coincidence that the French called this period “the glorious 30 years.” I say

“was,” because since the 1980s, the dominant groups of the capitalist class have been dismantling these protected institutions, the sum, or rather the system of which, constitutes normal and sound capitalism, or its pillars.

During the last 30 years, we have been witnessing the fading away of nation-states, the squeezing of civil society, depoliticization of the political sphere, and deliberate primitivization and weakening of mass education, including higher education. In America, this process took place in the 1970s and '80s; in Russia, we are witnessing it now. But thanks to the socialist foundations, those who are trying to demolish our education are succeeding, but only partly. This liquidation is the essence of the so-called neo-liberal revolution, or rather, counter-revolution: counter not only to the main tendencies of the postwar 30 years, but also to the whole period of European history since the Renaissance.

It is not just a regression; it is counter-progress. It is deliberate counter-progress.

During the last 30 years, we have been living in crisis. And this crisis, the neo-liberal counter-revolution, is man-made; it is artificial, or it has been artificial, because it seems that at the beginning of the 21st Century, the crisis began to go out of control of its masters, of the “Lords of the Crisis Rings.” We can identify this, indirectly, in the conflicts of different segments of the global elite, in the activities of their closed organizations, and in the statements of high functionaries.

Suffice it to recall what [IMF Managing Director] Christine Lagarde was saying in October in Tokyo, at the meeting of the IMF and World Bank, and what the essence of the report of the Morgan Stanley management in June of last year was.

The guiding document of the neo-liberal counter-revolution was the report “Crisis of Democracy,” written at the request of the Trilateral Commission by Samuel P. Huntington, Brian J. Crozier, and Joji Watanuki, in 1975. The document is very interesting. The authors wrote that the only cure for the evils of democracy was not more democracy, but the moderation of democracy. The report argued that, for a democratic political system to function effectively, it usually required some measure of apathy and non-involvement on the part of some individuals and groups. They meant the middle class and upper groups of the working class.

The democratic surge, the report said, was a general challenge to existing systems of authority, public

and private; and the main conclusion was that a diminution of public influence was needed. So, in fact, this document was a reaction to the rise of the middle class and working class, due to industrialization in the 30 postwar years. The solution was very simple: deindustrialization. The deindustrialization of the North Atlantic core, and an offensive against the middle class and working class. And we saw it in Thatcherism and Reaganomics.

Deindustrialization of the West, which began in the 1980s, ideologically has been under preparation for a long time, since the 1860s-1880s in Great Britain. In the 1950s and 1960s, the environmentalist movement was added to it. The environmentalist movement of the '60s was organized by the Rockefeller Foundation, and it was paving the way for future deindustrialization.

The same role was played by the youth culture and different minority movements, and, of course, by derationalization of thinking and behavior. The '80s saw the rise of irrational cults, the deterioration of mass education, and, of course, the supplanting of science fiction by fantasy. The Harry Potter series is a very indicative example, where we see the future, or a picture of reality, where there's no democracy, where there's a hierarchy, and where power is based on magic, not on rational choice.

The Project To Stop History

In fact, the neo-liberal counter-revolution, which organized the redistribution of incomes in favor of dominant groups, and at the expense of the middle class and working class, was part of a much greater geo-historic project, or plot, as you wish: the project to stop history. Because the redistribution of income, and de-democratization of society, demanded a civilizational U-turn, which I call the three Ds: de-industrialization, de-rationalization, and de-population.

This last plays an important role, not only from the economic point of view, or from the resource point of view. It is much easier to control 2 billion people than 7 or 8 billion. The de-population project is financed by the same structures which financed the ecology movement, etc.

The neoliberal counter-revolution was a crisis in itself, but it was intended to be a managed crisis. Yet, in the beginning of the 21st Century, the process seems to be going out of control, as I said; Hegel used to call such situations the perfidy of history.

So, we have a double crisis: one man-made and

planned, and then, a new crisis, a chaotic one.

To deal with the crisis, one has to have will and reason, or rather, first, reason, to understand, and secondly, the will to put reason into action. In our case, reason is social science, but the problem is that social science, in its present condition, is not adequate to the challenges of our epoch. The main agent of social science is the expert, who knows more and more about less and less. And there is a de-theoretization of knowledge. Knowledge is becoming more and more empirical, statistical case studies without theory, without scientific imagination and so on.

First, the disciplinary net of the late 19th Century, which is our inheritance from the 19th Century—economy, sociology, and political science—in fact, doesn't capture social reality as a whole—only parts of it. The basic unit of analysis of sociology is civil society, but if that is shrinking, it means that sociology can tell us less and less about the world we are leaving and the world we are entering.

[The French historian] Fernand Braudel used to say: "Capitalism is the enemy of the market." Rather, capitalism is balanced between monopoly and market, but now we can see that transnational corporate monopolization is pushing the market away.

I would like to remind you about the research by Andy Coghlan and Debora MacKenzie, published in October 2011 on the site of the *New Scientist*. This group of scholars showed that 147 companies, 1% of all companies, controlled 40% of the world economy. This is very indicative. This means that the modern economy, whose basic unit of analysis is the market, conceals more than it shows. Politics and the nation-state are fading away, and this means that political science, with its basic units of analysis—politics and the state—not only cannot adequately conceptualize, but cannot even merely depict real power relations, especially on the global level.

Secondly, there is another serious problem with political science. Real power is usually secret or semi-secret, shadow power. Conventional political science has neither concepts nor methods, to analyze this type of power. The more democratic the facade of the western society was becoming in the 19th and 20th centuries, the less real power it had. This power was channeled into closed clubs, super-national structures, etc.

What I am saying is banal and trivial, but political science in its present condition cannot analyze real power relations. The integration of these structures as

units of analysis in conventional political science will in fact blow it up.

Cognitive Intelligence Organizations

So, a new social science is needed, studying the real world, and not that which professed scholarship defines as real. A new social science with new disciplines, new concepts, a social force which will be able to create such a new type of scholarship, has the best chance to win in the 21st Century, or at least to undermine attempts to cut us off from our European legacy.

It is evident that a new scholarship can be created only by structures of a new type. Which organizations are analyzing reality today? Above all, these are scientific organizations and the analytical branches of secret services, but both are in deep crisis. Today, we are witnessing a crisis of both scientific organizations and secret services—their analytical branches. Scholarship appears not to be able to work with enormous volumes of information and feels awkward in analyzing informational streams. The gap between informational streams, including professional ones, and the standard level of a standard scholar is growing. Instead of scholars, as I said, we have experts who know more and more about less and less.

The whole picture reminds us of the situation of scholasticism at the end of the 15th Century: the miniaturization of research, case studies, and no universal lexicon among different spheres of knowledge. As for the analytical branches of the secret services, they seem to be unable to work in a world where almost all significant information can be found in open sources. And this transforms the whole business.

So, there is a need to create fundamentally new structures. I prefer to call them cognitive intelligence organizations. They must combine the best features of scholarship structures and those of the secret societies. Like the latter, they must analyze the real world, not the imaginary one, paying attention to certain indirect evidence. Social science usually neglects indirect evidence, which is, however, very important.

At the same time, like scholarship, they must concentrate on the laws and regularities of mass processes. Such structures must be not just analytical units, but also organizational weapons in the struggle for the future. I understand very well that it is much easier to pronounce such things, than really to create these organizations, but one must try.

Thank you.

Aesthetical Education And the Beautiful

Helga Zepp-LaRouche opened the final panel discussion of the conference.

We will try to end on a beautiful note, which is the idea of Classical culture. I think yesterday evening, when we had the wonderful concert which integrated the professionals with the people who are in the learning process, and this indeed was so moving, that I think most of us who were there could not help to have tears in their eyes, and were carried away by a foretaste of what kind of a world would be possible, if this evil would not exist.

Now, I don't know if Bruce Fein¹ is still here, but I have a standing controversy with him about the nature of man. And I would like my opening remarks, and also for the short discussion we could have [to address that]:

Obviously, if you look at the world today, it's full of evil, it's full of depravity, it is a systemic crisis as Mr. Fursov was just saying. But I think we should not be confused about what is the *potential* of mankind. And while we are in a Dark Age, I'm absolutely convinced that, if we just think about the development of the human species, which has been around only for a very short period of time...

Recorded history, in terms of writings, is barely 200 generations, which is like yesterday; and in that short period of time, the development of science and technology has been quite impressive: A stone which used to be used, some thousands of years ago to kill your neighbor, a *Faustkeil* [a stone axe with two faces], today, the size of the same instrument—you have an iPhone which has computer capability where you can run economies from around the world; you have conferences, you're absolutely, incredibly connected, and you can do all your work—now, this is only a short period of time.

1. Bruce Fein spoke on "The Foundation of Civilization." His speech was published in *EIR*, April 17, 2013.



EIRNS/Christopher Lewis

Now, just think how mankind, if we make it, would look 1,000 years from now. In the same way that the developed person today says, "How ridiculous to use this stone to kill your neighbor; I now have the whole world in this little instrument!" Just think: In a thousand years from now, people will look back and say, "Ha-ha! These ridiculous people from 2013—they thought an iPhone was something special!" They will look at the iPhone as if it would be a *Faustkeil*.

So I think we should not be limited by the present condition of civilization, but have an idea that if we have this scientific and technological, and industrial reconstruction of the world, and combine that with a Classical education, the aesthetical education Schiller and others are talking about, why should we not be able to develop civilization in such a way, that in the future—okay, I mentioned four-year-old boys who kick you in the shins, I mean, that will probably always be like that, because children, especially little boys, tend to be uncontrollable monsters at a certain age! But then they grow up.

Getting Rid of Childhood Diseases

My vision of the future of civilization is that we get rid of these childhood diseases, like all the emotions which go along with globalization. And just imagine if every child on the planet would have universal education, would have parents who would be concerned about the creative potential of the children to be developed. Why should that not be possible? I think the Age of Reason which Schiller was talking about is not a utopia.

But I think that we are in a transition phase, where, if we create the new paradigm, we have a future of civilization, where people have their identity as scientists, creative composers, poets, engineers, teachers, parents—a completely different identity, devoted to the progression of civilization. I think that is the true identity of mankind, if we are going to make it as a civilization.

So, I think we have the incredible responsibility of making that transition, to leave this world of what I would really like to call "oligarchical childhood diseases" behind us. And in a certain sense, there will never be a second Beethoven, there will be never a second Schiller, but in the realm of creativity, the degrees of freedom are limitless. And I think we should have this idea of mankind becoming a truly creative species, where the majority of people will be creative, and not slaves!

So, that is something to work for and to fight for, and I think that great Classical art is really the way to get there. And therefore, I want to give the word now to Antonella [Banaudi].

Antonella Banaudi

Beauty Is the Language Of the Universe

Helga and Lyn gave me this chance to talk to you, a chance to open my mind and my heart, and maybe this can help you, if I say something interesting, but for sure, it will be helpful for me. Because trying to be clear in my mind will help me.

I was thinking this over the last two days: that the reality of the human experience on the planet Earth is incredibly limited, in terms of space, time, and any other parameters with which the concept of life can be expressed. Man is not so much a terrestrial being, with an eternal or universal part, a soul; rather, man is a creative fantasy of the universe, a momentary manifestation of its power of invention. So the great mind of the universe experiments with itself through man. We are eternity incarnated, in this moment, imprisoned in a small material reality.

Perhaps I can imagine that the human eventually occupies the time of a snap of the fingers in the mind of God. And in our mind, we still have the echo of that snap.

Our human senses can be compared to our small Earthly reality, and most people live their experience on Earth only through the senses. Their Earthly life becomes the only reason for their existence, without being able or willing to really see, to really listen, to really feel, and to really understand how to be something, to be a protagonist in the universe.

Life that is linked to the senses only, is a life with no sense of purpose. It's like living in the entrance hall of a wonderful, marvelous castle, marvelous palace. So the most important senses for a man are the interior senses. And through art, through the exterior senses, the interior ones develop. Only the intellectual senses allow us to dis-

cover the power, the greatness, the wonder of the human creature, and how we can be protagonists in the universe.

The intellectual senses form a clear mind that can receive from eternity, a mind that has intuition, that is open, projected, like a ray of energy, toward something that is infinite, and to break through the darkness of ignorance. Because it is ignorance that can make us imprisoned on this Earth. So, we don't need a dream—because you dream in the night. We need a vision, we need to see, to foresee something that can be, and not in the future, but now.

So, no act of true art or true science exists, or is done, only for here, and only for now. Only true art or true science have in themselves the vision of something that surpasses time and space, that contains the intuition of

the architecture of the universe, and how all of us, and everything, is an incarnation of the universe.

To me, to be able to conceive the Absolute, is what can get us free from now, and here [holds up an iPhone]: This is useful, but this is style, this is design, but this is not beauty. If we think that this object is true science, is true art, we misunderstand. Because this doesn't contain eternity, or something that is valuable.



EIRNS/Daniel-Enrico Grasenack-Tente

The Power of Mozart

I would like to say something else: that music, for me—a musician is like a time machine, not in the sense that when I perform music, and am performing something that is from 200 years ago, 20 years ago, it's not in that sense. It's in the sense that using time, and sounds that are happening at the time, from the here and now, I can travel into a place where there is no time, and also is nowhere and everywhere at the same time.

If I listen to a piece of music, or a musician, that is not able to take me somewhere else, into a place that is not here and now, I have a sense that that music is not great music, or that it is not Classical music—it's not done in a good way, in a beautiful way.

Maybe you remember a movie, for me a great movie, the "Shawshank Redemption"—and how the music of Mozart was used to uplift the prisoners in the yard of the prison. So there were two voices—because it was the duet from the "Nozze di Figaro," "Sull'aria," "Che soave zeffiretto." There were these two voices coming from the realm of beauty, and they were, to me, like two birds, wonderful birds, but they were playing in the air, dancing, designing, continuously, and enter-

ing the heart of every prisoner, and opening their heart, and giving hope, and enlightening their minds, and letting them enter, really, into another realm.

Because in this realm, you don't need to understand words. You don't need to understand Italian, or German, or whatever, because when your mind is really in contact with the mind of the universe, it's really speaking the same language. And I hope, for myself, as a person, as a musician, to have, as sometimes I have had, this sense of contact of similarity of my mind, of my imagination, with the imagination of the universe. I can also say, the imagination of God.

So, I wish for myself to find even more of this connection, and I wish for all of us, to have this feeling that we are speaking in our mind, in the same language of the universe, that this language of beauty is the language of something that is eternal, and that you can recreate every moment you make something beautiful. I wish this.

The Fight for Classical Music

The final presentations on this panel were given by two longtime leaders of the Schiller Institute's music work, who reflected on their own work and discoveries in the promotion of Classical music.

John Sigerson took up the question of the central role of irony, or metaphor, which lies at the core of true Classical music. He referred to his personal work on Schumann's Lieder cycle, *Dichterliebe*, which he sang many years ago in New York City. A week later, Lyndon LaRouche wrote a memo that shocked me, he said. In the memo, Lyn wrote that *Dichterliebe* is a rip-roaringly funny piece. That made me think a lot about how to bring out the point of irony in Classical music, he said, as reflected, for example, in the song "Ich grolle nicht" ("I bear no grudge") which, in fact, conveys exactly the opposite.

Getting to beauty through paradoxes, which are resolved by going to a higher level of thought—that is the aim of the

Classical composer, Sigerson said. It is also a parallel, in some sense, to what we are doing in the fight for FDR's Glass-Steagall, where we are taking the best created by previous generations, and raising it to a new level, to resolve the crisis of mankind. As Mozart puts it in an especially beautiful section of the *Requiem*, the "Recordare": "Tantus labor non sit cassus" ("Let not all this work be in vain").

Liliana Gorini, a leader of the LaRouche movement in Italy, recounted for the audience the fight that LaRouche initiated in 1987, to return to the lower Classical tuning of C=256. It began with a performance of Mozart's "Coronation Mass" by the U.S. Schiller Institute chorus in 1987, and she had the opportunity to be in the U.S. and be part of the project. Lyn told the bassoon players, "Put Scotch tape on your instruments. Respect the voice and the connection between music and science."

When she returned to Milan, she decided to investigate whether Giuseppe Verdi had said something about tuning—and found the letter from Verdi to the government in 1884, in which he also connected science and music, and demanded a law for the scientific tuning of A=432 Hz. The Schiller Institute, in 1988, organized a conference at the Casa Verdi in Milan for the scientific tuning. Gorini showed a videoclip of the famous baritone Piero Cappuccilli demonstrating what a difference the tuning makes, by singing selections from two arias—one from "Trovatore," the other from "Ernani"—with two pianos, one tuned high, the other tuned scientifically.

During the concert on the evening of April 13, Gorini had delivered a message of support for the conference concert in Verdi tuning from Carlo Bergonzi, the world famous Verdi tenor, with a 50-year career, and one of the many signers of the Schiller Institute's international call for scientific tuning. Both, Bergonzi and Cappuccilli had participated in a conference in Verdi's home town of Busseto in November 1996, in which also Lyn and Helga participated.

Gorini expressed the hope that more concerts in the scientific tuning will be organized by others around the world this year, to celebrate the bicentennial of Verdi's birth on Oct. 10, 1813. The cam-



EIRNS/Christopher Lewis
John Sigerson



Schiller Institute videograb
Liliana Gorini

paign is still going on! During his lifetime, Verdi was also concerned with a return to the Classical authors like Shakespeare and Schiller, whose works he studied and used in his operas. He said, if we go back to them, we will have progress.

Gorini concluded: It is through Classical art that people can be uplifted to overcome their personal flaws, and accomplish the mission of serving humanity.

Dialogue with Lyndon & Helga LaRouche

Finding an Identity In the Future

A brief discussion period, moderated by Helga Zepp-LaRouche, brought the conference to a close.

Helga Zepp-LaRouche: One of the violinists from the performance yesterday, who is also a student of Norbert Brainin, has put up a new petition [on the Internet] for the lower tuning. We will publish the address on the Schiller [New Paradigm website](#), and I would ask all of you help to make it known, and what it involves.

Since I have heard that there were many questions in the room, which it would be impossible to answer now because of time reasons, people should feel encouraged to send these questions by e-mail, or even set up some kind of telephone conference call, because I think some of the speakers would be more than happy to answer questions even beyond this short opportunity.

I would say we now have about ten minutes, so if people have pressing issues for any of the speakers on the podium, please go ahead.

Q: Hello, my name is Matthias and I have a simple question to Lyn for my future work. Please tell me how can I motivate my

friends to take responsibility for people they will never know? How can I get the people around me to be more involved to work for the future?

Lyndon LaRouche: Well, first of all, you have to be convinced yourself. You have to define your own self-confidence, and you really have to decide to make a breakthrough that is not the same-old, same-old.

No, it depends upon you: First of all, you have to have a reason, a motivation for experiencing something yourself, and it's on the basis of wishing to express that for yourself. And it can come in two ways: You wish to express something which is in you, and you find that when you try to do that, you stumble. And then, if you get help, you find, if you're cooperating with somebody, and you try to do the same thing, as in song, you find it may work. So you actually have to *do*—experimentally, you're exploring yourself, and trying to find out where the fault in yourself is, which prevents you from doing something. Or, maybe it's a physical problem of performance; but you have to settle the question, yourself.

And if you can solve the problem, solve it! If you can't solve it, try doing something indirect on the problem; promote it, getting other people to do it, getting people to agree, "Let's try to do this; I'm having trouble doing this. Let's try to do this."

And I think a lot of inspiration—the greatest performers—I think they often get to it exactly that way, by getting to something when, suddenly, they make a *breakthrough*. And only when you to through this challenge of making a *breakthrough*, do you really understand what it's all about. It's that understanding.



EIRNS/Julien Lemaître

Helga LaRouche, and her husband Lyndon, the "Confucian mentor."

What Is Real Classical Art?

Q: Hello, I have, I think, a simple question, but to whoever wants to respond, how do you recognize what is real Classical art, and what is not?

LaRouche: There's a good example of this. It's the case of Beethoven in his later years, and it's a humiliating lesson for people who have difficulty in singing; it's a terrible lesson. Because Beethoven was at a point where he was composing, where he could not rely upon his ability to hear. He couldn't rely on it. But he actually *composed*—his greatest compositions, in complexity and achievement, came in his later performances, at a time when he could *no longer hear!* He would direct a performance, a public performance, which *he himself could not hear!* And do it accurately.

And the point is, it is not the sound of your voice which isn't much; it is the sound inside your head which is it. The *idea*, you operate in the domain of *ideas*, not of experimental noises. Not trying to find a beautiful noise. It's something *inside* you, it's a passion inside you, to do something *you have never done before*, an accomplishment you never made before! And it's only when people go through that, and some teacher or some coach, for example, will get them—"Look! Try!"

And, when they make a breakthrough, of finding out how to do something which they were always capable of doing potentially, and they make that breakthrough, and they force themselves to *dare* to make that breakthrough—they may not do it too well, but then, they know what they've got. And they will try again, and it will become successful

'The Sweetness of Truth'

Q: Hello, I want to speak in German. [Asks question in German]

Zepp-LaRouche: Okay, I'll answer in English.

I think that everybody who joined this movement was confronted with this problem, because what my husband has done is basically to lift us out of a life which was more or less a normal life: People would pursue their studies, or their family life, or whatever. And I apologize that I say this, because I'm not prejudiced because I'm married to him, but you meet a person like my husband, maybe once a century. And I was very happy when the guest from China said that Lyn is "a Confucian mentor"; and other people have said, he's in the tradition of Vernadsky in Russia, or...

Anyway, when we met him, it was like an earthquake, a thunderstorm, which completely changed the

way you look at [the world]. Because if you meet a Plato, or you meet a Leibniz, or a Beethoven, I think that that changes your life.

Now, in the beginning there were incredible obstacles. People said, "Oh, you want to do this crazy thing? Don't think you can change history. You're just a little *Sandkorn* [grain of sand] on the ocean, the waves will come and push you away. And it takes this initial strength, to say, "No, I will devote my life to something better." Given the fact that anybody who has a heart and a mind, and who sees in what terrible condition this civilization is—I mean, Africa is dying: Who cares about Africa? You have millions of children dying and nobody cares! At least not in the so-called "advanced sector."

You have an incredible menticide going on: If you look at the youth, for me—even if I've been in politics with my whole heart for a very, very long time—when I see the condition of the youth, now, where you have reports almost every day that 12-year-olds are raping 11-year-olds, and they're making pornographic videos and put them on the Internet; or they use guns, when 4-year-olds shoot their parents, because the gun is lying around—I cannot look at the condition of civilization, knowing what is a positive image of man!

Fortunately, I had the luck that I had three good German teachers who never spoke about the 20th Century, but they always spoke about Schiller, Lessing, Mörücke, and all these other beautiful poets, so my image was extremely formed by—for example, if you read the letter exchanges between Schiller and Humboldt, Schiller and Körner, Schiller and Goethe, for that matter, you see how a human relationship can be: that human beings can struggle for the most beautiful ideas, and that is the basis of their social relationship!

Now, if I compare these letter exchanges from this period to the SMS of today, or the Twitter of today, you have a sense of how much man has shrunk in their communication! And I think it's one of the big curses, that in the future, historians will ask, what was the relationship among these people? Oh, this SMS, and that text message...! And you know, it will be a mirror of why we are in such a Dark Age.

So, when you see all of that, and you have a love for mankind, then you have to have a *compassion*, that you will do everything with your life possible, to not leave it like that. Most children have no chance! If they don't meet at least one individual, a teacher, a parent, who gives this divine spark to them, they will become veg-

etables, and take drugs, and be involved in this horrible youth culture, which is based on ugliness, on violence, and so forth.

So if you have *any* passion for mankind, you have to do what we do—there is simply no other way. And in the beginning, you will meet some friends, who will turn out not to be friends. Many people think friendship is friendship, but then it turns out, when the first test comes, they were just “warm bodies in the Winter night.” Or people you do banal things with, and when the first challenge comes, it’s not a real friendship.

On the other side, those of us who stuck with it—and some of us are in this for a very long time—we are now appreciated by our parents, as the *only* ones who are not black sheep! Because all the others are divorced or have many symptoms of the present culture.

So this is a transformation; you have to have a little patience, because afterwards, people appreciate you for what you had the vision to show them. And those who are valuable will be with you, and those who are not valuable, you lose. That’s the price, but I think the prize to be gained is what Nicholas of Cusa called “the sweetness of truth” which is much sweeter than any other thing you can know.

And since we *are*—really—we have a tremendous responsibility. I think that the few on the planet who really understand where civilization is at, they have a *tremendous* responsibility, because we are on the verge of extinction of civilization. And we are the few people, relatively speaking, who have knowledge of how it works, because we have never given up; whenever we were attacked, we did not capitulate like other people, but we said, “Who’s attacking us? Why? Let’s find out.” And that’s how we have one of the best private intelligence capabilities of anybody.

And that is why, in a certain sense, we are feared,

despite the fact that we have no physical power. We have no large amounts of money; we have only the insight into the laws of the universe. And I think that that is why I am optimistic after all these many struggles, that the

laws of the universe are with us, and they’re with us for the same reasons that Antonella [Banaudi] said, because I believe that, while I cannot guarantee this or that, we are in tune with the lawfulness of the universe, and our opponents are a disease which will eventually vanish.

So, be optimistic and join.

Q: Yes, maybe you want to say something on what we are going to do tomorrow. Because we have also, our youth movement, we have people here who are partly working with us, who are new people, who have known us for a long time, but we need really to defend our citizenship, of our nations. And, we can very quickly establish that we contact our parliamentarians, and I think, for example, we have now in the United States, we have this

fantastic [conference] call with organizers; and we also have that in Germany every Saturday, and every German can get on this call. We brief you and we can help you to actually organize the parliamentarian in your district. Because it’s very urgent right now that Glass-Steagall go through. And I think it’s very important to see this as the preparation for what we’re going to do tomorrow.

So I just wanted to add that. And you can probably say more.

Cease Having Confidence in the Past

Zepp-LaRouche: I want to give the concluding word to Lyn.

LaRouche: The thing I desire the most, from all of you, and many people beyond, is *to cease having confidence in what happened yesterday*. The only thing that is really worthwhile, is, when you know you are living



Beethoven composed his sublime music, and conducted his compositions, while deaf! He was able to do this because he operated in the domain of ideas, and not of the senses, LaRouche said.

in a troubled universe, anyway, you know that you cannot continue to do what you are doing, because what you are doing is leading nowhere.

Therefore, the solution lies in the definition of the question of future: Do you know a better future? Now, this is not merely a matter of choice of choosing a future; you have to be right. It would be a terrible thing to make a mistake. And what's your passion *to know what the true future potential is?*

Take the case of Beethoven, as I referred to earlier, today: Beethoven was deafened to a degree, at which, in his last public performances, direction of his own compositions, he had trouble in matching what the orchestra was doing with his own composition. And yet he was right! And the reason was, that this man was composing brilliantly, in terms of composition of *ideas*, composition of ideas—he was at the acme of his capability, and still inspiring people. And yet, he could not hear! And yet, he had been deaf, for years. And his past ability to hear was disappearing all along. And yet, in this precise period, this man, this man's mind, was doing the greatest creation, greater than what he had ever done before.

Therefore, the thing that's important about human beings, and what's bad about them in their performance, is they believe in sense-perception. They believe in the sense-perception that has been *heard*, or the sense-perception they *wish* to hear, immediately, forgetting, recklessly, without finding what the actual future might be.

The most precious thing in society, is the development of people in society, who have a prescience of the future, of what the present is leading to—that you don't see the present only. You see the process of the past, leading into the present; now, can you *know* what the future is going to bring?

I've done this repeatedly. Other people, who are usually exceptional people, have done the same thing: I've often said, and been right, when I said, "five years from now is about the limit before this new development is going to occur." It could be more or less, but it's in those kinds of ranges. I've often prophesied, in the sense of ranges, and have been right.

Now, this is the same principle that you see demonstrated by *all* great composers. *All* great composers. The principle is to see the future, by seeing a better quality of idea, of importance of the idea in the future, at a relatively greater distance.

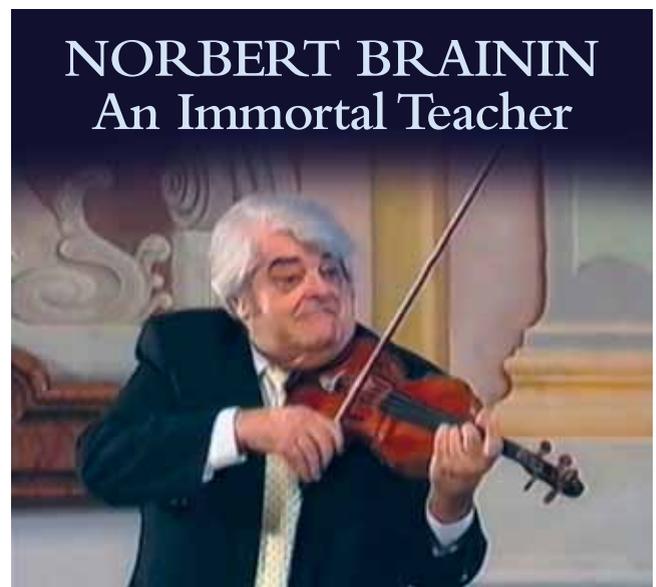
This is most essential, because otherwise, how can you judge what you can do with your life, or do for hu-

manity during your life? How can you prove that that choice was not a waste of time? That your whole life is not a waste of time, because you didn't *know* the idea you should have been able to know? And that's what makes all creativity.

If you really understood Shakespeare's performances in drama, a good performance of Shakespeare, you come into the same thing. You realize that you are gradually foreseeing the future development within that drama. All great musical opera, Classical opera, the same thing; Classical song, the same thing. The opera is useful for this process, because it does involve a lapse of time. Can you foresee *the irony* of what's going to happen in the future in that drama, in the Classical drama? Can you apply that ability to a real life experience?

I'm telling you, man is perfectly capable of doing that. It's a species capability of a human being. It's what makes the difference between a human being and a beast. *And you all have possession of it.* You simply have to take charge of your possession.

Zepp-LaRouche: So, with that, this Schiller conference is concluded.



NORBERT BRAININ An Immortal Teacher

On Sept. 20-22, 1995, the Schiller Institute sponsored a series of seminars/master classes, featuring Lyndon LaRouche's close friend and collaborator Norbert Brainin (1923-2005), the first violinist of the legendary Amadeus Quartet. The seminars, held at the DolnáKrupá castle in Slovakia, trace the revolution, begun by Hadyn's discovery of *Motivführung*, through the works of Mozart and Beethoven. The 40-minute LPAC video is a montage from the seminar; the full videos can be found at: larouchepac.com/culture.

<http://larouchepac.com/node/20178>

Party Politics Leads to Disaster

The United States is 12 years into a disastrous decline on every front—political, economic, and moral—and, by and large, the American population realizes it. A large majority is fed up with both political parties for having failed miserably to deal with a deepening economic crisis, and for enmeshing the nation in grinding perpetual war. Yet even though those actions which could reverse the “trend” have been put on Congress’s agenda—from reviving Glass-Steagall, to impeaching a President who violates the Constitution by going to war—those measures are bogged down, and the politics of disaster are moving right ahead.

How can Congress be forced to take the right decisive action? Partisan party politics must be crushed!

The problem is immediately evident by looking at the Congressional line-ups on HR 129 (the Glass-Steagall bill of Reps. Marcy Kaptur (D-Ohio) and Walter Jones (R-N.C.), on the one hand, and the moves to investigate Obama’s impeachable crimes on the other.

HR 129 currently has bipartisan lead sponsors, and 61 additional Congressmen have signed on. Yet, of the total of 63, only 3 are Republicans! This is despite the fact that memorials in favor of passing HR 129 have been supported by state legislatures dominated by Republicans, such as Indiana, South Dakota, and Alabama, and that there is prominent support for restoring Glass-Steagall by Republicans such as former Reagan Administration OMB head David Stockman.

What is stopping other Republican Congressmen from signing on? One gets the strong stench of party politics, which, of course, is combined with the heavy influence of Wall Street money.

The other side of the divide is epitomized by

the sponsorship of HR 36, Republican Congressman Frank Wolf’s call for a Select Committee to investigate Benghazi 9/11. That bill has 146 co-sponsors—but not one of them is a Democrat! Clearly, the Democratic Party leadership has laid down the line, and demanded that no Democrat cross it. There is no other way to explain that not even one Democrat is willing to demand this investigation.

Outside the Congress, of course, a wide swath of traditional Democrats are “up in arms” about the President’s lies and violations of the Constitution, all of which are becoming more and more publicized. Even those who held their noses and voted for Obama for re-election now feel compelled to speak out. Take Cornel West, the iconoclastic professor of philosophy and African-American studies, who, while criticizing Obama on his economic policy for years, still urged a vote for him last November. Speaking in London last week, Professor West said:

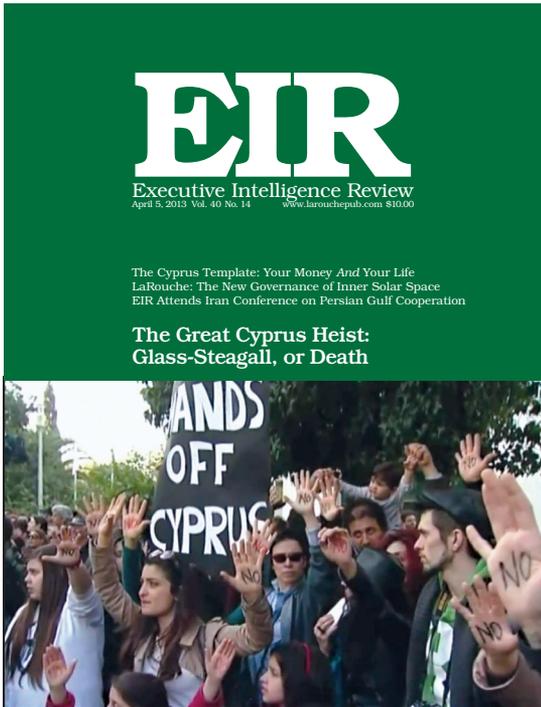
“He [Obama] is a brilliant, charismatic black brother. He’s just too tied to Wall Street. And at this point he is a war criminal. You can’t meet every Tuesday with a killer list and continually have drones drop bombs. You can do that once or twice and say: ‘I shouldn’t have done that, I’ve got to stop.’ But when you do it month in, month out, year in, year out—that’s a pattern of behavior. I think there is a chance of a snowball in Hell that he will ever be tried, but I think he should be tried, and I said the same about George Bush. These are war crimes.”

It will take less than a trial for war crimes to remove Obama from power, pass Glass-Steagall, and begin to right politics in the U.S.A. As a people, we must force the Congress to dump partisan politics now, and act on principle—now.

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