

**[US] Wadi'h Halabi****Contact Information**

Address:

Telephone:

Fax:

Mobile:

Email Address:

Homepage:

Lecturer in international political economy, Center for Marxist Education, Cambridge, Mass.; and Technical R&D. Many visits to China since 2000, to lecture and for conferences on world political economy. Serves on the Economics Commission of the Communist Party USA. His focus has been on the impact of two social systems interacting and conflicting within the arena of a single world political economy. Other work has addressed the material basis for revolutionary optimism, and the political economy of hunger and of the environment. He has also worked on union organizing campaigns, strike solidarity and defense of political prisoners.

Some recent publications:

"Tale of Two Economies," on the unfolding crisis in finance, Political Affairs, Jan./Feb.2008

Political Economy of the Environment, series in People's Weekly World, May-June 2007

"Twin Challenges to Marxism" (relative US stability since WWII, collapse of USSR), Political Affairs, Feb.2007

## **Ten Considerations: The Political Economy of Scientific Development in this Epoch**

**[US] Wadi'h Halabi**

Capitalism in historic decline is incapable of advancing scientific development; it is not simply unwilling. This paper considers ten factors in political economy leading to this conclusion, and why capitalism's deepening contradictions compel it into accelerated destruction of humanity's capacity for scientific development. This analysis also identifies the critical role of the international working class and its organizations in ending this destruction and establishing the material basis for scientific development.

After a socialist revolution, societies are capable of making real if limited progress toward scientific development. This progress is not automatic, and faces considerable domestic problems, conflicting priorities, and obstacles. Furthermore, as long as capital appropriates most of the surplus created by labor worldwide, progress after socialist revolutions faces constant threats and limits. Freedom is the recognition of these limits.

States formed by socialist revolutions and their constituent organizations (including governments, parties, unions, scientific, environmental and other organizations) share a profound interest in scientific development with workers in capitalist countries and their organizations. Communist parties in power have capacities that those not yet in power simply cannot command. Sustainable progress on scientific development depends on international labor unity and coordinated action.

SCIENTIFIC DEVELOPMENT summarizes communism's basic goals. It assumes balance and sustainability: balance between the common yet distinct and sometimes conflicting needs of society and individuals in their intimate interaction with the rest of nature; and social and environmental sustainability in the face of constant change.

Scientific development requires and contributes to overcoming of poverty and ending the opposition between city and countryside and between physical and intellectual labor. These are among Marxism's oldest goals, consistent with ending exploitation.

Scientific development cannot jump ahead of backwardness in productivity, social organization and knowledge. This paper examines the political economy of scientific development in an epoch characterized by two opposed social systems and classes interacting and conflicting within the confines of a single world economy.

Those two systems are world capitalism in historical decline, and the superior system formed by socialist revolutions. The corresponding classes, capital and labor, are engaged in

a worldwide class struggle in which only labor represents the genuine interests of humanity and nature.

The method of science is self-correcting. It unceasingly, mercilessly and collectively assesses and reassesses both the whole and its parts. It fearlessly dissects all problems, old and new, their better and poorer solutions.

After a socialist revolution, even economically-backward societies gain significant advantages not previously possible. This paper examines some of these, along with problems and limitations that must be addressed. Great struggles, and further socialist revolutions, are necessary to overcome these limitations and the threats they pose to those societies.

## **Ten considerations for scientific development**

### **1. Scientific development requires overcoming collective and individual poverty, ignorance and insecurity.**

The greatest blocks to scientific development are poverty, ignorance and economic insecurity. (This point is the most detailed both because of its importance and the methodology it illustrates.)

Under monopoly capitalism (imperialism), individual and collective poverty, ignorance and insecurity deepen with advances in science and productivity. This exacerbates conflicts, racism, and environmental destruction. Wars and major armed conflicts are causing enormous damage to health and the environment today.

How can advances in science and productivity result in deepening poverty, environmental damage and war? To understand this counter-intuitive result, it is essential to grasp capitalism's fundamental contradiction. As Marx explained it, this is the contradiction between the growth in the productive forces and capitalist forms, which are too narrow for those expanding forces.

Private ownership of production is the best-known of capitalism's forms. Other significant capitalist forms include top-down rule without bottom-up control and interest; national borders; and accounting methods which exclude true costs.

Capital is squeezed on both sides of its fundamental contradiction. For reasons which Marx elucidated, advances in productivity inexorably concentrate ownership of production. Monopolization in turn exacerbates top-down-only rule in both workplace and society; border-barriers grow and become "higher, stickier and more expensive;" accounting methods become more dishonest, and so on.

Lenin's "Imperialism" (1916) correctly identified two families, the Morgans and the Rockefellers, as having grown to dominate the US economy. Victor Perlo's "Empire of High Finance" (1957) and subsequent work consistently points to the emergence of the Rockefellers to domination of both capital and the US state apparatus.

The US Federal Reserve Bank's "Survey of Consumer Finances" indicates extreme inequality in capital ownership – a 98 Gini index, almost total inequality (zero is perfect equality; 100 indicates a single person owns all capital; inequality is severe when a Gini index reaches 50.)

An extraordinary global statistic confirms Marx's analysis of capital's fundamental contradiction. In 1999, economic historian Angus Maddison reported a nearly one percent annual decline in income per person in 143 (capitalist) countries over a 23-year period (1973-1995). (*Wall Street Journal*, Jan.11, 1999) Productivity simultaneously increased one percent or more annually. "Plus one percent equals minus one percent," one could say of capital's contradiction.

Falling income is not the only indicator of deepening poverty. Civil engineers document decay in the capitalist world's infrastructure, including water and sewage systems, roads, bridges and ports. Experts in other fields point to breakdowns in public health, education, housing conditions, and other signs of deepening social, enterprise and individual poverty.

Simultaneously, a few capitalist families are drowning in 'too much money,' i.e. capital they cannot profitably invest in production. This is the money expression of capital's problems with 'overproduction,' meaning that the capacity to produce commodities – even food -- exceeds paying demand, regardless of hunger and other unmet human needs.

'Overproduction' drives capitalists to speculation, in efforts to plunder each other, cheapen and weaken labor, and limit 'overcapacity'. A recent *Economist* (22 March 2008) reported that speculation in currencies exceeded \$3,200 billion (\$3.2 trillion) per day in 2007. That is up 10,000% since 1973, over 100% since 2003. By contrast, worldwide production of goods and services totals less than \$130 billion per day.

Environmental destruction generally parallels capitalism's deepening poverty. This destruction ranges from accelerating climate disruption (sometimes referred to as 'global warming'), to deforestation, acidification and general pollution of the oceans, pervasive pollution of soil and fresh waters, introduction of new chemicals, drugs, seeds and production techniques without proper testing, and so on.

Worldwide poverty, environmental damage and wars are certain to increase as monopolies raise the prices of foods, fuel and other necessities. Just since August 9, 2007, when finance capital suffered the first "heart attack" in its still-unfolding financial crisis, "market" prices of many necessities from oil to wheat have jumped over 50%.

Monopolies raise prices in times of crisis in efforts to compensate for losses. (Under competitive capitalism, commodity prices fell in times of crisis.) Monopolies can raise prices through direct control of industries (such as oil) or through their control of (speculative) "markets," such as those for wheat, copper, or global currencies.

Monopolies, however, can make price increases stick only because of weaknesses on the "consumer side" of the equation. The most significant of these weaknesses are in the

international working class movement, which suffers from confusion, especially after the Soviet collapse, and organizational disunity.

What about environmental damage in societies formed by socialist revolutions, such as China, Vietnam or Cuba? One portion is a product of capitalism's historical legacy, such as the extreme poverty, backwardness and war destruction when the People's Republic was formed in 1949. Production for capitalist export markets accounts for more of China's pollution.

In addition, economic, political, military, cultural and other pressures from capitalism on these societies (as on the USSR before its collapse) divert resources that could otherwise be directed to environmental protection.

Furthermore, misconceptions abound within the labor movement, for example that environmentalism is anti-worker. In addition, after socialist revolutions it is not easy to develop the mechanisms to balance economic growth, worker protection, social justice and environment.

#### Overcoming poverty after a socialist revolution

Nevertheless, socialist revolution opens a path to scientific development through progress against poverty, ignorance and insecurity. Progress is not automatic, and faces severe limits. Freedom is the recognition of those limits.

In China as elsewhere, the socialist revolution itself and its early years laid the basic foundations for subsequent rapid growth. The new society enjoys distinctive advantages favoring scientific development. By breaking the stranglehold of the banker-comprador-landlord, the revolution frees the toiling masses from enslavement.

Impossible under capitalism, more and more effective centralization and leadership becomes possible (again, not automatic) after a socialist revolution in part because the new state gains control of much of the surplus created domestically, but also because bottom-up control and interest also becomes possible.

After socialist revolution, society also becomes increasingly capable of honest accounting, which measures social and environmental costs, within limits. Scientific development is not possible without such accounting, yet capitalism is incapable of it.

The new state power takes control of much of the domestic surplus previously appropriated by the capitalists, and can allocate it toward maintaining balance between production, income and demand, and meeting social and environmental needs. (It is state control over the surplus that allows economies after socialist revolutions to avoid cycles.)

Planning makes it possible to allocate scientific and other resources to solve important problems. Freed from the barriers of secrecy and profit, scientists can cooperate broadly, without waste and duplication of effort.

The insights of dialectical materialism can offset the common errors of over-specialization, of posing problems too narrowly and too statically, within the confines of current fashion in bourgeois science.

Science is both universal, a product of the whole human species, and specific to local and historical developments. Science after a socialist revolution is both part of world science, and a critic of it.

Most importantly, socialist revolution can begin to unlock the masses' enormous intellectual potential, previously wasted and excluded from the scientific process. This opens the path to finding solutions to particular as well as general problems. Ending this waste of humanity makes the struggle against poverty and discrimination an economic as well as a social necessity.

#### Proof of the pudding —poverty in China and India

One 'proof of the pudding' is poverty reduction. In China, several hundred million have emerged from extreme poverty since its socialist revolution in 1949; fewer than 100 million remain below the line today. By contrast, extreme poverty is growing in India; it rose by more than 100 million just between 1990 and 1996, by US Army and World Bank accounts. Jump in food and oil prices will worsen this.

In India income per person today is 30% lower than in 1950, while in China it has more than tripled. Beyond income, there is infrastructure, health, education, culture – the list is long, and the gap between China and India will increase until India has its socialist revolution.

Capitalism's central contradiction contradicts the idealist belief that small private farming is superior to collective and state farming. State and collective agriculture can be consistently more productive and humane than private farms, with greater resources to increase productivity while protecting the environment. Most small farmers in poor capitalist countries, India included, consume more food than they produce!

At the same time, China's development of productive forces through its understandable use of market mechanisms has come at great costs, including to socialist ideals and practice. Without assessing those costs and reaffirming commitment to those ideals and practice, scientific development is threatened, as happened in the USSR.

Poverty has exploded in former Soviet republics since capitalist restoration; it sometimes exceeds that in the most oppressed capitalist countries. Even in the USA, poverty, hunger and homelessness are growing; in fact, production workers' wages today are lower than in 1973, if inflation and debt are properly accounted for.

#### Deforestation and reforestation

Deforestation can be an indicator of social and individual poverty. Deforestation contributes about as much to climate-disrupting emissions as modern transport (around 20%

each). Deforestation occurs in part as a result of individual poverty; over one billion cut trees daily for heating and cooking purposes because they cannot afford modern fuels. In addition, collective poverty results in destructive instead of sustainable deforestation, for both lumber and agriculture.

As recently as 2000, China suffered significant net deforestation. Floods, mud slides and soil erosion caused a re-evaluation by the state. By 2006 China was recording significant net reforestation, an extraordinary achievement.

China's reforestation is remarkable. Yet it faces considerable limitations and challenges. One challenge lies in gaining workers' and peasants' assent and support, since jobs and society can suffer, at least temporarily, from environmental initiatives. Without that informed and collective assent and support, the state risks having workers' and peasants' turn against environmental policies – and possibly against the state itself.

Grasping the limitations of China's reforestation achievements is also important. Deforestation is accelerating now from Indonesia to Siberia to West Africa, ultimately because of deepening poverty. This causes global climate damage that China cannot escape.

Furthermore, the latest studies point to sharp declines in tree growth rates worldwide; almost all species are affected. The exact reasons are the subject of ongoing research, but there is no doubt that global pollution is ultimately responsible. China's remarkable reforestation is thereby inevitably limited.

## **2. Scientific development requires great expansion of production!**

Liberal environmentalists believe sustainable development requires sharp cuts in production. That is certainly true of production of oil and other environmental toxins. But, in this epoch, production must generally be greatly expanded in order to advance scientific development and protect the environment.

Why? Above all, to meet the most basic needs of billions who must otherwise turn to destructive or unhygienic practices simply to survive, such as deforestation, non-sustainable agricultural methods, or use of rivers and streets for waste.

To be certain, expanded production after a socialist revolution is very different from production under capitalism. It does not mean unbridled consumerism, but production to meet needs, following methods that are humane for the producers and which minimize environmental impact.

But as capitalism's fundamental contradiction deepens, it becomes increasingly incapable of expanding production to meet human needs, and turns to methods increasingly destructive to workers, humanity and environment.

Humanity urgently requires new industrial methods, machinery and infrastructure to produce environmentally-sustainable production of necessities. We need fundamental transformation of industry, agriculture, construction and transport.

But monopolies fiercely resist innovations that threaten their profits --- the oil industry is the prime example. Capital turns instead to propaganda, such as BP's false claims that it is now a 'green' company, or GE's pervasive "ecomagination" advertising, while it produces heavily for – imperialist war.

Great struggles – with the participation of states and other organizations formed by socialist revolutions -- are necessary to expand production to meet human needs scientifically. Through those struggles, Communist and workers parties need to patiently educate workers and the masses why socialist revolutions are necessary to put humanity on the path of scientific development.

### **3. Extraordinary planning, centralization and mass organization is essential for scientific development in this epoch.**

Scientific development today requires extraordinary centralization, planning, mass participation and organization to achieve effective implementation. In the future, all this will become automatic, like the laws that choreograph schools of fish in the ocean, or pedestrians on crowded sidewalks. We are not there yet.

Unprecedented long-term central planning and mass participation will be necessary to reverse destruction of the environment, and deal with the unavoidable mass dislocations that humanity faces as a result of pollution, climate-disruption, breakdowns of infrastructure, and other damage from poverty. Hurricane Katrina provided a glimpse.

Yet capitalism is incapable of long-term planning, and even less capable of the necessary mass participation and organization. Why? One reason is that capitalism's periodic crises blow even its best-laid plans to pieces, disrupting everything from scientific and feasibility studies to public-works projects.

In addition, planning and implementation can only be as effective as the control and interest from below. But capitalism is a top-down-only system, hostile to both interests and control "from below." It is telling that the Pentagon is seriously considering dangerous, top-down efforts to cool the earth.

After a socialist revolution, society becomes more capable of developing control from below. Its implementation is difficult and not automatic, but possible. The greatest difficulties involve international limitations; this is where parties and organizations of workers in capitalist countries can join forces with those in power to lead the path in overcoming those limitations.

### **4. Scientific development conflicts with national borders.**

There is a single world economy, a single global ecosystem. Scientific development requires properly assessing the whole, not simply the parts, and taking the corresponding measures to address problems and challenges.

Borders form major blocks to effective international planning and action essential for scientific development. Yet capitalism must perpetuate borders to divide and rule. As its contradictions deepen, border-barriers grow. Since 1989, the number of borders grew sharply worldwide, after capitalist restoration broke up the USSR, Yugoslavia and Czechoslovakia.

Rising international inequality is also making borders ‘thicker, stickier and more expensive,’ as an unhappy capitalist recently complained. And he was referring to the US-Canada boundary, long considered the most open in the capitalist world.

A decade ago, a study revealed that Canadian provinces traded many more times with each other than they did with equidistant US states because the border already formed such a significant barrier. (*International Economic Trends*, Federal Reserve Bank of St.Louis, August 1999) The barrier has since grown.

After some (weak) environmental laws were passed in the US three decades ago, capitalists evaded them in part by moving production outside the US, sometimes just across the Mexico boundary. Pollutants do not stop at borders.

After a socialist revolution, the new state needs to take measures to protect its borders against capitalism. Nevertheless, the continued existence of borders conflicts with and limits the new society’s scientific development.

The solution is antagonistic to capitalism, but an old one for communism: for a world without borders. ‘Workers of the world unite’ is an essential step towards it.

##### **5. The past must support the present for scientific development.**

Under socialism, Marx explained, the past will support the present instead of suffocating it, as it does under capitalism and previous exploiting systems.

Nothing expresses the weight of the past more than capitalist debt. Debt repayment routinely takes top priority in capitalist states; except in periods of social turmoil, even public debt is almost never brought to a vote against other needs, such as for education, health or environmental protection. And yet debt service is little more than income security for the wealthiest families who own most capital. Scientific development is choked by debt.

In the US, debt service by government bodies alone equaled \$410 billion in 2006. (*Flow of Funds Accounts of the US*, Federal Reserve Bank, March 2008) This excludes massive interest payments by “off the books” government units, such as special agencies paying off debts of collapsed banks, highway bonding authorities, and others. In addition, there is corporate and personal debt. In many countries, debt service exceeds all expenditures on health, education, infrastructure and environmental protection.

According to experts, the annual interest payments by US government bodies would be more than sufficient to bring proper nutrition, clean drinking water and sewage treatment for everyone on earth.

This, then, is the global environment that societies face after their socialist revolutions, including China today. Limited domestic steps can be taken so that the accomplishments of the past are used to advance the future. At the same time, world capital's debt burdens threaten those steps. Once again, the problems and solutions are international – and internationalist. Clarity on this can help chart the path to sustained scientific development.

### **6. Scientific development and profit are ultimately incompatible.**

Is this not at the heart of it all? Yes it is. Private profit is the sole criterion for capitalist investment. Yet many essential projects to advance scientific development will not be profitable.

If capitalist societies are too poor to “cure” hunger, how can they possibly find solutions to the far more complex destruction of humanity's environment?

Indeed, capitalism's can increase its short-term profits, or reduce losses through steps that harm scientific development, such as increasing work hours, cutting wages and employment, raising the price of necessities (food, fuel, etc.), polluting, etc. These steps multiply as capital's contradictions deepen.

We need to beware of capitalists using the environmental crisis to promote false solutions. One example is its calls for more nuclear plants without resolving issues of waste and safety, including worker safety.

After a socialist revolution, society can begin to use honest, comprehensive social and environmental accounting to openly assess all projects. To the extent that a society must permit capitalist methods after a socialist revolution, it is to help develop the productive forces. But these methods will be effective only within limits ultimately determined democratically by workers and peasants (not exploiters), through the organizations which really form the new state apparatus, including government, unions and the Communist party.

Even then, as long as global economy remains primarily capitalist, the new society faces limits on what projects are feasible to advance scientific development. The problems are international, the solutions are class-based and also international.

### **7. Scientific development requires social insurance.**

Insurance is required against inevitable mistakes and failures of projects required for scientific development. The potential losses, however, are often such that private insurance – the other major arm of private capital – will not take them up. After a socialist revolution, the new state can set aside surplus for insurance.

### **8. Scientific development requires public ownership of land.**

Few factors are as important for scientific development as land use. Whether it is for agriculture, urban planning, water basins, recreation, green zones, separation of

potentially-dangerous industrial projects from residential areas – the list is very long – appropriate land use is critical for advancing scientific development.

Private land ownership disrupts even capitalist governments' efforts to promote some rationality in land use. Speculation in land can rapidly negate urban and countryside planning efforts. Enormous pollution hides behind land ownership rights. All these in turn have global implications.

After a socialist revolution, significant progress can be made around scientific use of land domestically. The international equations remain.

**9. Honest, global social and environmental accounting is absolutely essential for scientific development.**

Capitalism cannot face the truth; it must hide its contradictions and the source of its profits. Capitalism is profoundly hostile to whole-system science. It sponsors one-sided development of fragmented disciplines that are rational in the small, and irrational in the big. Capitalism views science as a business opportunity, a means of social control and for waging war. It views people and the environment as resources to be exploited while denying social and environmental harm.

The international working class, its parties, unions and states, can face the truth. Need more be said?\_

**10. Scientific development requires a population that is not only literate, but educated in science, technology and scientific practices.**

Capitalism has a profound interest in keeping the masses ignorant and dependent. The capitalist class consciously mis-educates the masses, if it educates at all, and limits access to scientific understanding and practice. It sows doubt and confusion about even the most solid theories, such as evolution.

Functional illiteracy is a significant and growing problem, even in the US and other imperialist countries; it disproportionately affects women and oppressed nationalities. Yet how can there be any democratic control without an educated and informed population?

To advance scientific development, the international communist movement needs to take leadership in education, including in science, dialectical materialism, and class consciousness.

## **Summary**

The workers of the world, our states, parties and other organizations, share common interests in aligning social organization, science and the environment.

Capitalism does not share this interest or potential; its deepening contradictions in fact compel it into accelerated destruction of the material basis for scientific development. Scientific development everywhere will therefore be threatened if the capitalist class continues to control most of the global surplus created by workers, as it does today.

Communist parties in power (China, Vietnam, Cuba, northern Korea and Laos) have the organizational capacity to take up initiatives on scientific development that are generally unavailable to Communist and workers' parties not yet in power, including battles against pollution or monopoly prices. What is essential is recognition that the workers and their organizations, whether in power or not, share the same interest in scientific development.

The analysis presented here points to urgency in the task of saving humanity from destruction by capitalism. Its conclusion adds to Marx and Engels' call on workers of the world to unite, the call on Communist and workers' parties of the world to unite in the cause of scientific development.

Special thanks to Richard Levins, Harvard University, Boston, and Instituto de Ecología y Sistemática, Havana, for significant comments and contributions to this paper. Thanks also to Marc Brodine, Environmental Commission, CPUSA; Paul Kaczocha, Labor Commission, CPUSA; John Bachtell, district organizer, CPUSA; and so many comrades in China and the United States for help and encouragement. Errors belong to the author.

Economics Commission, Communist Party USA and Center for Marxist Education, Cambridge, Mass.