



June 2010 Trendevents

We are running out of reasons to remain in Afghanistan

The Seattle Times Editorial Board calls for an end to the occupation of Afghanistan. - June 28, 2010

THE firing of Gen. Stanley McChrystal was a foregone conclusion after he publicly disparaged the president. The better question is why U.S. forces are in Afghanistan at all... The United States was not attacked by Afghanistan, but by a band of terrorists trained at a private camp there. The NATO occupation is based on the assumption that if the Taliban return to power, they will invite al-Qaida to set up another camp. The Taliban's goal is to put Afghanistan under religious law, with themselves administering it. To do that, they need to be left alone, and if they want that, they cannot permit an al-Qaida camp, which would likely trigger an American response.

So why can't America exit this budget-busting war and bring our soldiers home? Let them have their religious state... The defenders of the war offer weak and unconvincing answers. For example, The Economist, the London-based magazine, gives three reasons in its June 24 issue why the United States and the United Kingdom cannot bring their troops home... First is that Afghanistan would be "vulnerable to a civil war that would suck in the local powers including Iran, Pakistan, India and Russia." In other words, if America gets out of the killing zone other countries will go in, therefore America should stay in. And that makes no sense.

The Economist's second reason not to leave is that it "would be a humiliation for the West." We remember hearing that argument when U.S. forces were hip deep in Vietnam. Withdrawal would hurt American "prestige." It would make America look weak... In fact, what made America weak was the war, draining us in treasure and blood. Exiting Vietnam helped America get its strength back — especially its military strength... The magazine's final reason for remaining stuck in Afghanistan is that "having invaded their country, the West has a duty to return it to them in a half-decent state."

We would put a period after "them." Never mind about making Afghanistan decent. That is up to the Afghans



Guns or butter? Sentiment against war spending is spreading - (The Seattle Times June 28, 2010)

Over the past decade, Obey has been methodically campaigning against the Iraq war and the endless Afghanistan occupation, saying their rationales are weak, their prosecution inept and their deficit-financed costs unaffordable in the face of unmet domestic needs.

By [David Sirota](#)
Syndicated columnist

The last time America found itself in a budget debate pitting domestic priorities against war expenditures, Richard Nixon was in the White House and David Obey was the youngest member of Congress — an antiwar liberal whose insurgent campaign unexpectedly vaulted him into the House seat vacated by the hawkish president's new defense secretary... In those dark days of the late 1960s and early 1970s, as Obey was still learning his way around Washington, it was the guns of Vietnam and the Cold War versus the butter of the Great Society and the War on Poverty — and despite Obey's protests, guns won the day.

"President Nixon issued a call to counter-revolution at home," summed up Time magazine in 1973, noting that while the Republican administration was increasing the Pentagon budget, it was proposing the "abolition or deep cutting of more than 100 federal grant programs that have benefited the unemployed, students, farmers, veterans, small businessmen, the mentally ill and tenants in federally aided housing."

The resulting body bags and cuts to homeland investment were, of course, devastating — which is why it is fitting that Obey is choosing to end his congressional tenure where he started it: presciently on the side of butter in a 21st-century reprise of the ancient debate. And this time, the Wisconsin Democrat's seniority puts him in a far more powerful position to press his case. Over the past decade, Obey has been methodically campaigning against the Iraq war and the endless Afghanistan occupation, saying their rationales are weak, their prosecution inept and their deficit-financed costs unaffordable in the face of unmet domestic needs. For years, he has valiantly championed bills to legislate withdrawal timetables and war surtaxes.

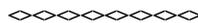
Now, with President Obama defiantly pushing a plan to boost Afghan war funding at the potential expense of economic aid on the home front, Obey has deftly replaced the scalpel strokes of proactive legislation with the blunt force of filibuster... According to Politico, Obey last week "drew a direct link between war funding and progress on domestic priorities" with his announcement that as House Appropriations Committee chairman, he will "withhold action on the war funds until there (is) some resolution on a major economic relief bill extending jobless benefits."

Like clockwork, the move was met with hypocritical hysteria. The same Republican Party that bewails deficits responded with a letter asking Defense Secretary Robert Gates to champion the deficit-exploding war-funding bill in order to avoid "undermining" the military. Gates, despite having just called for defense spending cuts, obediently complied — and on Republicans' insipid terms that perniciously question war critics' loyalty to our soldiers... "Gates to Congress: Stalling on War Funding Will Hurt U.S. Troops," read the Fox News headline after he publicly echoed the GOP demands... The Nation's Chris Hayes has written that such tripe boils down to "You're either with the war or you are against the troops" — and as the bloated Pentagon budget proves, that message has thwarted Obey for most of his life... Until, perhaps, now.

Yes, just as Obey prepares to retire, there are signs that his crusade is winning converts. For instance, Oklahoma Republican Sen. Tom Coburn is using his position on President Obama's deficit commission to focus attention on Pentagon profligacy... Similarly, Politico reports that "key tea-party players (are) expressing a willingness to put the Pentagon budget on the chopping block." And rank-and-file congressional Democrats, once cowed by war proponents' saber rattling, are increasingly echoing Obey's rhetoric.

Whether or not the cacophony stops the Pentagon's latest blank check is less important than Obey having finally rekindled an honest discussion about guns and butter. In a storied 41-year career of venerable accomplishments, that is the most profound achievement of all.

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From Wikipedia, the free encyclopedia

War Is a Racket is the title of two works, a speech and a booklet, by retired [U.S. Marine Major General Smedley Darlington Butler](#), one of only 19 people to be twice awarded the [Medal of Honor](#), in which Butler frankly discusses from his experience as a career military officer how [business](#) interests have commercially benefited from [warfare](#).

After he retired from the [Marine Corps](#), Gen. Butler made a nationwide tour in the early 1930s giving his speech "War is a Racket".^[1] The speech was so well received that he wrote a longer version as a small book with the same title that was published in 1935 by Round Table Press, Inc., New York. The booklet was also condensed in [Reader's Digest](#) as a book supplement which helped popularize his message. In an introduction to the Reader's Digest version, [Lowell Thomas](#), the "as told to" author of Butler's oral autobiographical adventures, praised Butler's "moral as well as physical courage".^[2]

In *War Is A Racket*, Butler points to a variety of examples, mostly from [World War I](#), where [industrialists](#) whose operations were [subsidised](#) by [public funding](#) were able to generate substantial [profits](#) essentially from mass human suffering.

The work is divided into five chapters:

The intrigues in The Times dispatch, then, are not Afghanistan's "huge veins of iron, copper, cobalt, gold and critical industrial metals" that the paper quotes Pentagon officials gushing about — it is the gushing itself. Indeed, the real question is: What would prompt the government to portray well-known geology as some sort of blockbuster revelation?

The Atlantic's Marc Ambinder proffers a convincing answer. Noting the military's coordinated quotes in The Times piece, he writes that the Pentagon is probably trying to bolster Americans' support for the flagging Afghanistan campaign by "publicizing or re-publicizing valid but already public information about the region's potential wealth."

This assertion, mind you, is not coming from some antiwar ideologue in a "No War for Oil!" T-shirt. On the contrary, Ambinder is a quintessential buttoned-down establishmentarian far more interested in covering political process than in pushing a pet cause — which means his charge (later echoed by other Washington journalists) is a particularly powerful one. And if he's correct, we may be witnessing the final spasm of a radical shift.

Remember, the idea that the U.S. invades countries to pilfer natural resources was once written off as an inflammatory insult and/or an unsubstantiated conspiracy theory, irrespective of corroborating facts (like, say, pre-9/11 Pentagon plans to divvy up Iraqi petroleum, State Department proposals to privatize Iraq's oil fields and top government officials insisting Saddam Hussein's overthrow was "essential" to protect oil supplies). The assumption, of course, was that the public opposes resource conflicts and that therefore labeling wars as such is nothing but disreputable slander designed only to harm a political opponent.

This manufactured construct, though, began eroding as soon as George W. Bush started turning the "war for oil" aspersion into a proud clarion call.

In 2005, The Associated Press reported that the president "answered growing antiwar protests with a fresh reason for U.S. troops to continue fighting in Iraq: protection of the country's vast oil fields." During a news conference a year later, Bush three times pitched petroleum as a rationale for war, criticizing "extreme elements" who "want to control oil resources," insisting that "we can't tolerate a new terrorist state in the heart of the Middle East with large oil reserves" and warning that we must stop insurgents from gaining "the capacity to use oil as an economic weapon."

Now, under President Obama, we get leaked Pentagon memos cheerily promising that Afghanistan will become "the Saudi Arabia of lithium" and generals touting the minerals' "stunning potential" — the implication being that America is morally obligated to exploit such potential through armed occupation.

The theater of battle is different but the paradigm is the same: Whereas it was previously considered uncouth for anyone to even suggest that economic hegemony might motivate U.S. military action, our leaders are now boldly selling wars as commendable instruments of such profit-focused imperialism.

Importantly, this revised message relies on the new assumption that the public now sees resource conflicts not as detestable — but as worthy and even admirable. And should that assumption prove true, it would mean that this latest exercise in martial propaganda represents more than mere marketing innovation. It would signal a disturbing change in what the population thinks is — and is not — a just reason for war.

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Don't Listen to the Cheerleaders, the Main Street Economy Isn't Improving

By Robert Reich, Former Secretary of Labor, Professor at Berkeley — June 10, 2010
[\[http://www.huffingtonpost.com/robert-reich/dont-listen-to-the-cheerl_b_607854.html?ir=Daily%20Brief\]](http://www.huffingtonpost.com/robert-reich/dont-listen-to-the-cheerl_b_607854.html?ir=Daily%20Brief)

Today's most important economic news: U.S. household debt fell for the seventh straight quarter in the first three months of 2010 as Americans continued to respond to the recession's fallout... But like all economic news, its significance depends on where you're standing — whether you're a typical American or someone at the top.

The common wisdom is that excessive debt-financed spending was one of the causes of the recent recession, so the news that household debt is dropping is being celebrated by business cheerleaders as reason to believe we're on the mend... Baloney. The reason so many Americans went into such deep debt was because their wages didn't keep up. The median wage (adjusted for inflation) dropped between 2001 and 2007, the last so-called economic expansion. So the only way typical Americans could keep spending at the rate necessary to keep themselves — and the economy — going was to borrow, especially against the value of their homes, but that borrowing ended when the housing bubble burst.

So now Americans have no choice but to pare back their debt. That's bad news, because consumer spending is 70 percent of the economy. It helps explain why so few jobs are being created, and why we can't escape the gravitational pull of the Great Recession without far more government spending.

It's also a bad omen for the future. The cheerleaders are saying that for too long American consumers lived beyond their means, so the retrenchment in consumer spending is good for the long-term health of the economy. Wrong again. The problem wasn't that consumers lived beyond their means. It was that their means didn't keep up with what the growing economy was capable of producing at or near full-employment. A larger and larger share of total income went to people at the top... So in the longer term, it's hard to see where the buying power will come from unless America's vast middle class has more take-home pay. Yet the economy is moving in exactly the opposite direction: Businesses continue to slash payrolls, and the hourly wage of the typical American with a job continues to drop, adjusted for inflation.

Here's more news: A Federal Reserve report Thursday showed the net worth of Americans rose a fourth straight quarter in January-March. Don't be fooled by this one either. That increase was almost entirely based on the stock market's rise in the first quarter, but the market has since fallen back to where it was at the start of the year. More to the point, most Americans don't have many assets in the stock market. To the extent they have any net worth, it's in their homes, and home prices continue to languish... Don't be fooled by the cheerleaders. The economic news continues to be dismal.



"Impossible Choices in a World Depression" — Commentary No. 283, June 15, 2010

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As the world's leaders and pundits continue to deny the reality of the world depression — they won't even use the word — the impossible choices that are faced by government after government become more and more obvious every day. Consider what has happened in just the last month.

The United States had its worst unemployment figures in quite a while. Yes, there were some new jobs, but 95% of them were of temporary census workers. Private employers added just 10% of the jobs they were expected to add. Despite this, it has now become politically impossible to get further stimulus money voted by Congress. And the Federal Reserve has ceased to buy Treasury securities and mortgage bonds. These had been the two main strategies to increase jobs. Why? The call for deficit cuts has grown too strong.

The most immediate consequence can be seen at the level of the budgets of the separate state governments. The cost of Medicaid has gone up because of the economic crisis. This cost is borne by the separate states. They have been helped in the past year by increased federal subsidies of state spending on Medicaid. Congress won't renew this. Gov. Edward Rendell of Pennsylvania says this will increase his state's budgetary shortfall by two-thirds, and force it to lay off 20,000 teachers, police officers, and other government workers. Of course, this is in addition to lost medical services for many people.

In Great Britain, the new Prime Minister, David Cameron, says that cutting down on borrowing is "the most urgent issue facing Britain today." The *Financial Times* sums up his proposals in its headline: "Cameron pitches an age of austerity." Its assessment of this policy: "If the government is to make such steep reductions in spending, it cannot avoid visibly damaging frontline services. The cuts will be more savage than anything contemplated by even the Thatcher government."

Germany's Chancellor Merkel has announced her version of austerity: deep public spending cuts immediately, rising in amount each year for the next four years. She has also announced new taxes on airlines, which the world's airlines immediately announced would seriously hurt their ability to reduce their negative balance-sheets and save them from bankruptcy. Germany's unemployment rates will increase, but its unemployment benefits will be reduced. Other governments in Europe plus the United States have been urging Germany to spend more and export less, in order to restore world demand. Merkel rejected these demands, saying that debt reduction was her priority.

Japan's new Prime Minister, Naoto Kan, warned the country that the debt situation is so bad that Japan could face a situation comparable to that of Greece. To remedy this, he proposed some increased taxation, more regulation of the financial arena, and new kinds of public expenditures.

In the middle of all this super-austerity in the North, a most remarkable thing has occurred, which seems to have escaped almost all notice. As everyone knows, Spain is one of the many European countries now in economic difficulty because of very large debt ratios. On May 30, Fitch Ratings joined other ratings companies in reducing Spanish bond ratings from AAA to AA+. The question is why. Just the day before, the Spanish parliament had voted the country's deepest budget cuts in 30 years.

Budget cuts are presumably what Germany and others have been calling for in Greece, Spain, Portugal, and other countries threatened by too much debt. Spain responded to this pressure, and just because it did, Fitch Ratings downgraded it. Brian Coulton, Fitch's person in charge of ratings for Spain, said in the statement downgrading Spain: "The process of adjustment to a lower level of private sector and external indebtedness will materially reduce the rate of growth of the Spanish economy over the medium-term."... So there it is: damned if you do, and damned if you don't. The financial speculators have created a disastrous fall in the world economy. The ball was then thrown to the states to solve the problem. The states have less money and more demands on them. What can they do? They can borrow, until those who lend money won't do it, or demand too high a rate of interest. They can tax, and the businesses say that this will cut back their ability to create jobs. They can reduce expenditures, and in addition to the terrible pain this inflicts on everyone — but especially on the more vulnerable, this action also will reduce the possibility of growth, as Mr. Coulton points out for Spain.

Of course, there is one big place to reduce expenditures — the military. Military expenditures do provide jobs but far fewer than if the money were used otherwise. This does not apply only to the biggest spenders like the United States. A virtually unmentioned aspect of Greece's debt problems was its heavy expenditure on the military, but are governments ready to reduce significantly military expenditures? It doesn't seem too likely. So, what can the states do? They are trying one thing today and another thing tomorrow. Last year, it was stimulus. This year, it's debt reduction. The year after, it will be taxation... In any case, the overall situation will be worse and worse.

Can China save us? Stephen Roach, Morgan Stanley's very acute analyst, seems to think so, provided the government "stimulate(s) private growth." In that case, rising wages will be offset by higher productivity. Maybe. But the Chinese government has been resistant to such a policy up until now, not for economic but for political reasons. Its drive to maintain political stability has been paramount up to now. Furthermore, even Roach has one great fear: China-bashing in Washington leading to trade sanctions. Myself, I think that's a high probability, as the U.S. economic situation continues to deteriorate.

The way out of all of this is not some small adjustment here or there — whether of the monetarist or the Keynesian variety.

To emerge from the economic box in which the world finds itself requires a fundamental overhaul of the world-system. This will surely have to come, but how soon?

By Immanuel Wallerstein

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BP and the Perils of Corporate Citizenship, By Robert Reich, Robert Reich's Blog — June 15, 2010

BP: It's Not a Contest Between the US and Britain; It's a Contest Between Citizenship Interests and Shareholder Interests

This from today's Wall Street Journal: *In a letter sent Sunday to U.S. Coast Guard Rear Admiral James Watson, BP said it expects to have the capacity to capture between 40,000 and 53,000 barrels of oil a day by the end of June. That compares with 15,000 barrels a day now, out of a flow of 20,000 to 40,000 barrels scientists estimate are coming from the well... BP, which said further enhancements will increase the collection capacity to as high as 80,000 barrels a day by mid-July, submitted its latest plan after Mr. Watson, the federal government's second-in-command for the spill response, told the company Friday its previous plan was insufficient and gave BP a 48-hour deadline to come up with a revised approach... Mr. Watson said in a statement Monday that "BP is now stepping up its efforts to contain the leaking oil," noting that the new plan's call for collecting 50,000 barrels of oil by the end of June is two weeks earlier than the previous timeline.*

But the Journal isn't telling the truth. BP is not capable of writing a letter or "saying" anything, "submitting" anything, or "stepping up its efforts."... You see, BP is not a person...

Like any other corporation, BP is a collection of contracts. The collection includes employment contracts - with people who are paid to be executives, with others who are expert in how to plug holes a mile below the surface of the Gulf, and with lots of workers. There are contracts with BP's creditors, who expect to be paid on time. There are contracts with numerous suppliers, with other companies like Halliburton, with the owners of tankers. And there are contracts with the U.S. government, which has leased part of the Gulf to BP for drilling.

At the center of this web of contracts are BP's shareholders, who legally own BP. That means they own BP's assets - oil reserves under land or ocean bed that BP as a corporation is entitled to, its physical capital (rigs, tankers, and so on), and its financial assets, which amount to tens of billions of dollars... BP's shareholders (including pensioners who have shares of pension funds, small investors who own shares in mutual funds, and major investors, all over the world) are interested in only one thing - maximizing the value of their shares. Over the last month and a half, these shareholders have got clobbered. Some have sold out to other investors who believe BP's share values will rise. Others are holding on in the hope that they will.

It's impossible for **BP** to commit to doing anything because BP is not a human being capable of making commitments. BP's executives (like Tony Hayward) work for BP's shareholders. They can be replaced by BP's shareholders if BP's shareholder aren't satisfied with their performance. Or, more likely, BP's shareholders can sell out to major investors who will then replace BP's executives if they don't like the job they're doing...It doesn't matter if Tony Hayward is called to the White House. It doesn't matter that President Obama says he'd like to fire him. Hayward's first responsibility is to BP's shareholders... Some Americans are also be BP shareholders, but their interests as U.S. citizens aren't represented in their roles as shareholders. Their citizenship interests are represented by our government, headed by the President.

As citizens, we want the hole in the Gulf plugged up as fast as possible, we want the spill contained, and we want everything cleaned up and damages paid - no matter how much it costs BP's shareholders. But if we're BP shareholders, we want to minimize all such expenditures - including our long-term liabilities... Get it? There's no conflict between Britain and the United States. The conflict is between two kinds of interests - shareholder interests and citizen interests... And unless or until citizenship interests predominate in the Gulf - unless or until BP's shareholders are forced by law to part with their assets to ensure the safety of the American public - shareholder interests will come first. That's why it's so important for the Administration (and, if necessary,

Congress) to take steps to put BP America under temporary receivership, establish an escrow fund of at least \$10 billion that BP must pay into, and whatever else is necessary to trump shareholder interests.

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China's monopoly on 'green' minerals - Source: UPI, 10 Dec 2009

China's monopoly on "rare earth" minerals, essential for green technologies, may not keep up with increasing demand. While China has 53 percent of the world's rare earth deposits, it provides about 95 percent of the world's supply. In the last 10 years, a 40,000-ton per year global market for rare earth has grown to 125,000 tons per year, according to the U.K. Times Online. By 2014 demand is predicted to reach 200,000 tons per year... Yet China's Ministry of Industry and Information Technology has cut the country's target output from rare earth mines by 8.1 percent this year and is forcing mergers of mining companies in a bid to improve technical standards, according to the government-controlled China Mining Association... In 1987, when rare earths started to be used in manufacturing computers and other electronic gadgets, Chinese leader Deng Xiaoping said, "The Middle East has oil, but China has rare earth."

Uses for the 15 rare earth elements vary. The permanent magnets in a three-megawatt wind turbine use about two tons of neodymium and other rare earths. Each Toyota Prius uses 25 pounds of rare earth elements. Cerium and lanthanum are used in catalytic converters for diesel engines. Compact fluorescent light bulbs use europium, terbium and yttrium. New uses for rare earth elements continue to emerge. The Tokyo Institute of Technology's recent breakthrough in superconductivity uses rare metals that lower the friction on power lines, thus cutting electricity leakage. Most of the world's rare earth comes from a single mine in Baotou in China's Inner Mongolia. Much of the rest comes from small, often unlicensed mines in southern China... Outside of China, only two projects are expected to be producing rare earth in the next five years: Molycorp Minerals' Mountain Pass in California and Lynas Corporation's Mount Weld in Australia. At a Hong Kong rare earths conference last month, foreign executives spoke about the Chinese monopoly.

"If the purpose of putting hybrid vehicles on the road is to lower our dependence on foreign oil, and all we're doing is buying cars that need Chinese rare earth materials, aren't we trading one dependence for another?" asked Mark Smith, chief executive of Molycorp Minerals, Times Online reports... "If we don't get a couple of projects up and running there's going to be a severe shortage of rare earth in the world and all these clean energy policies aren't going to be possible," said Smith. But readying a rare earth mine to Western environmental standards is expensive. Those living near China's rare earth mines and processing plants are also paying a price. Farmland surrounding a tailing lake in Baotou that stores the toxic rare earth elements before processing has been affected by seepage from the lake... "The crops stopped growing after being watered in these fields," said Wang Cun Gang, a farmer, Times Online reports. The local council paid villagers compensation for loss of income. "They tested our water and concluded that neither people nor animals should drink it, nor is it usable for irrigation."

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What's Wrong With the Sun? <http://www.newscientist.com/article/mg20627640.800-whats-wrong-with-the-sun.html?full=true>
by [Stuart Clark](#) - June 14, 2010

SUNSPOTS come and go, but recently they have mostly gone. For centuries, astronomers have recorded when these dark blemishes on the solar surface emerge, only for them to fade away again after a few days, weeks or months. Thanks to their efforts, we know that sunspot numbers ebb and flow in cycles lasting about 11 years... But for the past two years, the sunspots have mostly been missing. Their absence, the most prolonged for nearly a hundred years, has taken even seasoned sun watchers by surprise. "This is solar behaviour we haven't seen in living memory," says David Hathaway, a physicist at NASA's Marshall Space Flight Center in Huntsville, Alabama... The sun is under scrutiny as never before thanks to an armada of space telescopes. The results they beam back are portraying our nearest star, and its influence on Earth, in a new light. Sunspots and other clues indicate that the sun's magnetic activity is diminishing, and that the sun may even be shrinking. Together the results hint that something profound is happening inside the sun. The big question is what?... The stakes have never been higher. Groups of sunspots forewarn of gigantic solar storms that can unleash a billion times more energy than an atomic bomb. Fears that these [giant solar eruptions could create havoc on Earth](#), and disputes over the sun's role in climate change, are adding urgency to these studies. When NASA and the

European Space Agency launched the [Solar and Heliospheric Observatory](#) almost 15 years ago, "[understanding the solar cycle](#) was not one of its scientific objectives", says Bernhard Fleck, the mission's project scientist. "Now it is one of the key questions."

Sun behaving badly

Sunspots are windows into the sun's magnetic soul. They form where giant loops of magnetism, generated deep inside the sun, well up and burst through the surface, leading to a localised drop in temperature which we see as a dark patch. Any changes in sunspot numbers reflect changes inside the sun. "During this transition, the sun is giving us a real glimpse into its interior," says Hathaway... When sunspot numbers drop at the end of each 11-year cycle, solar storms die down and all becomes much calmer. This "solar minimum" doesn't last long. Within a year, the spots and storms begin to build towards a new crescendo, the next solar maximum... What's special about this latest dip is that the sun is having trouble starting the next solar cycle. The sun began to calm down in late 2007, so no one expected many sunspots in 2008. But computer models predicted that when the spots did return, they would do so in force. Hathaway was reported as thinking the next solar cycle would be a "doozy": more sunspots, more solar storms and more energy blasted into space. Others [predicted](#) that it would be the most active solar cycle on record. The trouble was, no one told the sun... The first sign that the prediction was wrong came when 2008 turned out to be even calmer than expected. That year, the sun was spot-free 73 per cent of the time, an extreme dip even for a solar minimum. Only the minimum of 1913 was more pronounced, with 85 per cent of that year clear.

As 2009 arrived, solar physicists looked for some action. They didn't get it. The sun continued to languish until mid-December, when the largest group of sunspots to emerge for several years appeared. Finally, a return to normal? Not really... Even with the solar cycle finally under way again, the number of sunspots has so far been well below expectations. Something appears to have changed inside the sun, something the models did not predict. But what? The flood of observations from space and ground-based telescopes suggests that the answer lies in the behaviour of two vast conveyor belts of gas that endlessly cycle material and magnetism through the sun's interior and out across the surface. On average it takes 40 years for the conveyor belts to complete a circuit.

When Hathaway's team looked over the observations to find out where their models had gone wrong, they noticed that the conveyor-belt flows of gas across the sun's surface have been speeding up since 2004... The circulation deep within the sun tells a different story. Rachel Howe and Frank Hill of the National Solar Observatory in Tucson, Arizona, have used observations of surface disturbances, caused by the solar equivalent of seismic waves, to infer what conditions are like within the sun. Analysing data from 2009, they found that while the surface flows had sped up, the internal ones had slowed to a crawl... These findings have thrown our best computer models of the sun into disarray. "It is certainly challenging our theories," says Hathaway, "but that's kinda nice."

It is not just our understanding of the sun that stands to benefit from this work. The extent to which changes in the sun's activity can affect our climate is of paramount concern. It is also highly controversial. There are those who seek to prove that the solar variability is the major cause of climate change, an idea that would let humans and their greenhouse gases off the hook. Others are equally evangelical in their assertions that the sun plays only a minuscule role in climate change... If this dispute could be resolved by an experiment, the obvious strategy would be to see what happens when you switch off one potential cause of climate change and leave the other alone. The extended collapse in solar activity these past two years may be precisely the right sort of test, in that it has significantly changed the amount of solar radiation bombarding our planet. "As a natural experiment, this is the very best thing to happen," says Joanna Haigh, a climatologist at Imperial College London. "Now we have to see how the Earth responds."

The climate link

Mike Lockwood at the University of Reading, UK, may already have identified one response - the unusually frigid European winter of 2009/10. He has [studied records covering data stretching back to 1650](#), and found that severe European winters are much more likely during periods of low solar activity ([New Scientist, 17 April, p 6](#)). This fits an emerging picture of solar activity giving rise to a small change in the global climate overall, yet large regional effects... Another example is the Maunder minimum, the period from 1645 to 1715 during which sunspots virtually disappeared and solar activity plummeted. If a similar spell of solar inactivity were to begin now and continue until 2100, it would [mitigate any temperature rise through global warming by 0.3 °C on](#)

[average](#), according to calculations by [Georg Feulner](#) and [Stefan Rahmstorf](#) of the Potsdam Institute for Climate Impact Research in Germany. However, something amplified the impact of the Maunder minimum on northern Europe, ushering in a period known as the Little Ice Age, when colder than average winters became more prevalent and the average temperature in Europe appeared to drop by between 1 and 2 °C... A corresponding boost appears to be associated with peaks in solar output. In 2008, Judith Lean of the Naval Research Laboratory in Washington DC published a study showing that high solar activity has a disproportionate warming influence on northern Europe ([Geophysical Research Letters, vol 35, p L18701](#)).

So why does solar activity have these effects? Modellers may already be onto the answer. Since 2003, space borne instruments have been measuring the intensity of the sun's output at various wavelengths and looking for correlations with solar activity. The results point to the sun's emissions of ultraviolet light. "The ultraviolet is varying much, much, much more than we expected," says Lockwood... Ultraviolet light is strongly linked to solar activity: solar flares shine brightly in the ultraviolet, and it helps carry the explosive energy of the flares away into space. It could be particularly significant for the Earth's climate as ultraviolet light is absorbed by the ozone layer in the stratosphere, the region of atmosphere that sits directly above the weather-bearing troposphere... More ultraviolet light reaching the stratosphere means more ozone is formed. And more ozone leads to the stratosphere absorbing more ultraviolet light. So in times of heightened solar activity, the stratosphere heats up and this influences the winds in that layer. "The heat input into the stratosphere is much more variable than we thought," says Lockwood.

Enhanced heating of the stratosphere could be behind the heightened effects felt by Europe of changes in solar activity. Back in 1996, Haigh showed that the temperature of the stratosphere influences the passage of the jet stream, the high-altitude river of air passing from west to east across Europe... Lockwood's latest study shows that when solar activity is low, the jet stream becomes liable to break up into giant meanders that block warm westerly winds from reaching Europe, allowing Arctic winds from Siberia to dominate Europe's weather... The lesson for climate research is clear. "There are so many weather stations in Europe that, if we are not careful, these solar effects could influence our global averages," says Lockwood. In other words, our understanding of global climate change could be skewed by not taking into account solar effects on European weather... Just as one mystery begins to clear, another beckons. Since its launch 15 years ago, the SOHO spacecraft has watched two solar minimums, one complete solar cycle, and parts of two other cycles - the one that ended in 1996 and the one that is just stirring. For all that time its [VIRGO instrument](#) has been measuring the total solar irradiance (TSI), the energy emitted by the sun. Its measurements can be stitched together with results from earlier missions to provide a 30-year record of the sun's energy output. What this shows is that during the latest solar minimum, the sun's output was 0.015 per cent lower than during the previous lull. It might not sound like much, but it is a hugely significant result... We used to think that the sun's output was unwavering. That view began to change following the launch in 1980 of NASA's [Solar Maximum Mission](#). Its observations show that the amount of energy the sun puts out varies by around 0.1 per cent over a period of days or weeks over a solar cycle.

Shrinking star

Despite this variation, the TSI has dipped to the same level during the three previous solar minima. Not so during this recent elongated minimum. Although the observed drop is small, the fact that it has happened at all is unprecedented. "This is the first time we have measured a long-term trend in the total solar irradiance," says Claus Fröhlich of the [World Radiation Centre](#) in Davos, Switzerland, and lead investigator for the VIRGO instrument... If the sun's energy output is changing, then its temperature must be fluctuating too. While solar flares can heat up the gas at the surface, changes in the sun's core would have a more important influence on temperature, though calculations show it can take hundreds of thousands of years for the effects to percolate out to the surface. Whatever the mechanism, the cooler the surface, the less energy there is to "puff up" the sun. The upshot of any dip in the sun's output is that the sun should also be shrinking... Observations suggest that it is - though we needn't fear a catastrophe like that depicted in the movie *Sunshine* just yet. Back in the 17th century French astronomer Jean Picard made his mark by measuring the sun's diameter. His observations were carried out during the Maunder minimum, and he obtained a result larger than modern measurements. Was this simply because of an error on Picard's part, or could the sun genuinely have shrunk since then? "There has been a lot of animated discussion, and the problem is not yet solved," says Gérard Thuillier of the Pierre and Marie Curie University in Paris, France... Observations with ground-based telescopes are not precise enough to resolve the question, due to the distorting effect of Earth's atmosphere. So the French space agency has designed a mission, aptly named [Picard](#), to return precise measurements of the sun's diameter and look for

changes... Frustratingly the launch, on a Russian Dnepr rocket, is mired in a political disagreement between Russia and neighbouring Kazakhstan. Until the dispute is resolved, the spacecraft must wait. Every day of delay means valuable data being missed as the sun takes steps, however faltering, into the next cycle of activity. "We need to launch now," says Thuillier.

What the sun will do next is beyond our ability to predict. Most astronomers think that the solar cycle will proceed, but at significantly depressed levels of activity similar to those last seen in the 19th century. However, there is also evidence that the sun is inexorably losing its ability to produce sunspots ([see "The sunspot forecast"](#)). By 2015, they could be gone altogether, plunging us into a new Maunder minimum - and perhaps a new Little Ice Age... Of course, solar activity is just one natural source of climate variability. Volcanic eruptions are another, spewing gas and dust into the atmosphere. Nevertheless, it remains crucial to understand the precise changeability of the sun, and the way it influences the various regional patterns of weather on Earth. Climate scientists will then be able to correct for these effects, not just in interpreting modern measurements but also when attempting to reconstruct the climate stretching back centuries. It is only by doing so that we can reach an unassailable consensus about the sun's true level of influence on the Earth and its climate.

The sunspot forecast

Although sunspots are making a belated comeback after the protracted solar minimum, the signs are that all is not well. For decades, William Livingston at the National Solar Observatory in Tucson, Arizona, has been measuring the strength of the magnetic fields which puncture the sun's surface and cause the spots to develop. Last year, he and colleague Matt Penn pointed out that the average strength of sunspot magnetic fields has been sliding dramatically since 1995... If the trend continues, in just five years the field will have slipped below the threshold magnetic field needed for sunspots to form... How likely is this to happen? Mike Lockwood at the University of Reading, UK, has scoured historical data to look for similar periods of solar inactivity, which show up as increases in the occurrence of certain isotopes in ice cores and tree rings. He found 24 such instances in the last few thousand years. On two of those occasions, sunspots all but disappeared for decades. Lockwood puts the chance of this happening now at just 8 per cent... Only on one occasion did the sunspot number bounce back to record levels. In the majority of cases, the sun continued producing spots albeit at significantly depressed levels. *Stuart Clark's latest book is The Sun Kings (Princeton). He blogs at stuartclark.com* depressed levels. It seems that the sunspot bonanza of last century is over ◇◇◇◇◇◇◇◇◇◇

That '30s Feeling <http://www.nytimes.com/2010/06/18/opinion/18krugman.html?th&emc=th>

By [PAUL KRUGMAN](#) – BERLIN - June 17, 2010

Suddenly, creating jobs is out, inflicting pain is in. Condemning deficits and refusing to help a still-struggling economy has become the new fashion everywhere, including the United States, where 52 senators voted against extending aid to the unemployed despite the highest rate of long-term joblessness since the 1930s. Many economists, myself included, regard this turn to austerity as a huge mistake. It raises memories of 1937, when F.D.R.'s premature attempt to balance the budget helped plunge a recovering economy back into severe recession. And here in Germany, a few scholars see parallels to the policies of Heinrich Brüning, the chancellor from 1930 to 1932, whose devotion to financial orthodoxy ended up sealing the doom of the Weimar Republic.

But despite these warnings, the deficit hawks are prevailing in most places — and nowhere more than here, where the government has pledged 80 billion euros, almost \$100 billion, in tax increases and spending cuts even though the economy continues to operate far below capacity... What's the economic logic behind the government's moves? The answer, as far as I can tell, is that there isn't any. Press German officials to explain why they need to impose austerity on a depressed economy, and you get rationales that don't add up. Point this out, and they come up with different rationales, which also don't add up. Arguing with German deficit hawks feels more than a bit like arguing with U.S. Iraq hawks back in 2002: They know what they want to do, and every time you refute one argument, they just come up with another... Here's roughly how the typical conversation goes (this is based both on my own experience and that of other American economists): German hawk: "We must cut deficits immediately, because we have to deal with the fiscal burden of an aging population..." Ugly American: "But that doesn't make sense. Even if you manage to save 80 billion euros — which you won't, because the budget cuts will hurt your economy and reduce revenues — the interest payments on that much debt would be less than a tenth of a percent of your G.D.P. So the austerity you're

pursuing will threaten economic recovery while doing next to nothing to improve your long-run budget position.”... The key point is that while the advocates of austerity pose as hardheaded realists, doing what has to be done, they can’t and won’t justify their stance with actual numbers — because the numbers do not, in fact, support their position. Nor can they claim that markets are demanding austerity. On the contrary, the German government remains able to borrow at rock-bottom interest rates... So the real motivations for their obsession with austerity lie somewhere else: In America, many self-described deficit hawks are hypocrites, pure and simple: They’re eager to slash benefits for those in need, but their concerns about red ink vanish when it comes to tax breaks for the wealthy. Thus, Senator Ben Nelson, who sanctimoniously declared that we can’t afford \$77 billion in aid to the unemployed, was instrumental in passing the first Bush tax cut, which cost a cool \$1.3 trillion.

Germans tend to think of running deficits as being morally wrong, while balancing budgets is considered virtuous, never mind the circumstances or economic logic. “The last few hours were a singular show of strength,” declared Angela Merkel, the German chancellor, after a special cabinet meeting agreed on the austerity plan. And showing strength — or what is perceived as strength — is what it’s all about... There will, of course, be a price for this posturing. Only part of that price will fall on Germany: German austerity will worsen the crisis in the euro area, making it that much harder for Spain and other troubled economies to recover. Europe’s troubles are also leading to a weak euro, which perversely helps German manufacturing, but also exports the consequences of German austerity to the rest of the world, including the United States.

But German politicians seem determined to prove their strength by imposing suffering — and politicians around the world are following their lead... How bad will it be? Will it really be 1937 all over again? I don’t know. What I do know is that economic policy around the world has taken a major wrong turn, and that the odds of a prolonged slump are rising by the day.

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