360 REVIEW magazine covers energy, agriculture, finance, culture and faith on the Northern Great Plains. 360 Review presents in-depth inquiry, analysis and reflection on important issues, trends and events happening in and affecting this region. There will be a special focus on North Dakota, where we are located, especially in this first edition. More stories about surrounding states will be published in future issues.

“Magazine” derives from makhazin, the Arabic word for “storehouse,” which also soon gained military application as a “store for arms.” The world's first print magazines began publication in England in the 18th century and sought to provide a storehouse of information and intellectual armament. 360 Review joins that tradition with the Christian, Catholic and Benedictine tradition of the University of Mary, which exists to serve the religious, academic and cultural needs of people in this region and beyond.

As a poet once wrote: “The universe is composed of stories, not atoms.” 360 Review strives to tell some of these stories well—on paper (made of atoms, we presume), which is retro-innovative in a world spinning into cyberspace. There is also a digital version, available at: www.umary.edu/360.

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Oil production in North Dakota grew from 35.7 million barrels* in 2005 to 396.7 million barrels in 2014—which would fill the state capitol grounds (132 acres) to a depth of 387 feet. From 2005 to 2014, the total economic benefit (including primary and secondary business revenue streams) from the petroleum industry increased ninefold from $4.5 billion to $38.56 billion.**

If the entire capitol grounds turned into an oil barrel, the top of the barrel would be 146 feet or 13 stories above the top of the Capitol Building, which is 241 feet high.

During the same period, the number of jobs (primary and secondary employment) generated by the petroleum industry tripled from 27,571 to 81,540.

* A barrel of oil is equal to 42 US gallons  
** Above reflects energy impact in dollars.
Above are estimates of the number of homes that could be powered for a year in relative terms by North Dakota’s major energy sources. The total number of homes (77 million) represents 58 percent of the housing units in the United States.

Illustration by Tom Marple for 360 Review.
Homesteading
Then and Now

In 1862, President Abraham Lincoln signed the Homestead Act, a bill opening a half-million square miles of territory in the western United States for settlement.

This changed the face of America.
The photograph (left) of John and Marget Bakken and their two children, Tilda and Eddie, was taken in front of the family’s sod house in northeastern North Dakota in 1898. John Bakken was the son of homesteading Norwegian immigrants and built the house two years earlier. A colorized version of the photograph, originally taken by John McCarthy, was included in *The Pageant of America*, a 15-volume series commemorating the nation’s sesquicentennial, published in 1926. The photograph was discovered there by Charles Chickering, an artist for the Bureau of Engraving and Printing, who used the image to design the 1962 Homestead Act centennial stamp.

The photograph above was taken in February 2014 near Watford City, North Dakota, in the heart of the Bakken. Notice the bales of hay (not unlike sod) being used to insulate the recreational vehicle (RV) against the winter cold. The RV houses an oil field worker who recently migrated to the Bakken in search of opportunity. The most important difference between 1898 and 2014 is not the satellite dish but the absence of family. Most of today’s migrants are men who leave their families behind in states hundreds of miles away. This creates a far more transitory population than in previous centuries and hampers the organic growth of wholesome communities.
OF RIGS & STEEPLES

Samuel G. Freedman, author and New York Times columnist
On Father Brian Gross’s second day in Watford City, he drove from his church to the Outlaws Bar & Grill downtown.

It was late on a Friday afternoon in June 2012, and the place was thronging with roughnecks and geologists, engineers and construction hands, the whole range of men who had headed to a corner of North Dakota for the fracking boom. Father Gross took a moment in the parking lot just to count license plates; he lost track after 32 states. The next afternoon, the young priest drove to the local country club, which was sort of a grand name for another bar and grill, which happened to adjoin a golf course. Father Gross noticed the barmaid noticing him, her eyes widening at this stranger in a clerical collar.

“I’d like a Budweiser,” he said. “And I’d like you to show me where the Catholics are.”
He was asking a question that was both wry and profound, for Father Gross had just taken the first pulpit of his priestly career in what had to be one of the most challenging settings in America for propounding and sustaining faith.

From the hilltop fairway of the golf course, Father Gross could see the feverish remaking of the landscape. On the terrain once given over to soybeans, corn and cattle there now rose rigs, warehouses, apartments, strip malls and workers’ barracks. Plumes of dust rose from the newly cut roads as eighteen-wheelers roared along them. Watford City was in the process of doubling its population from 1,400 to nearly 3,000 within a decade.

The scene inside and outside Outlaws, meanwhile, hinted at another aspect of the boom. With a 20-to-1 ratio of men to women, with pockets full from good-paying jobs, the frackers of Watford City were not exactly strangers to indulgence. Outlaws represented the legitimate end of consumption, as sophisticated a nightspot as Watford City had, but the spectrum ran all the way to prostitution, pornography and crystal meth.

“You see what it is, and I understand that I’m only one person,” Father Gross, who is now 36, said during an interview late last year. “There’s a desire, certainly, to help people foster a relationship with God, and to help them understand that relationship is the beginning of the ordered life that people want.

“From the religious perspective,” he continued, “I’ve kind of broken it down to different groups. There’s the single guy in his 20s who’s eyeball-deep in student loans and wants a bit of
adventure. There are the guys in their 40s and 50s away from their families. They want to be good guys, but they’re constantly tempted. The alcohol, the drugs. What’s their relationship with their wife like? They feel like the cards are stacked against them, and they’re so in need of affirmation. There are the Mexicans who come here, maybe legal, maybe not. They might show up in the middle of winter without a coat or a place to stay. And from their culture, they’re looking at you as the representative of Christ.”

This particular representative had never envisioned such a role for himself. Brian Gross grew up in Bismarck the son of a nurse and an audio-visual technician at a local college. He attended public school—the future priest’s high-school mascot was, of all things, a demon—and reflexively attended church on Sunday with the conviction that it “doesn’t affect your life that much.” Through most of his college years at North Dakota State in Fargo, he fell out of even that desultory churchgoing habit, watching “The Simpsons” on television while his observant roommate went to Sunday-night Mass.

Yet some remnant of belief nagged at him. He started to say a private prayer once a week: “God, how are You doing? God, do You exist? God, here I am.” At the age of 23, he went to confession for the first time in 15 years. Walking out of church that day, he asked himself, “Am I going to be a Catholic or not?” The answers came with surprisingly rapidity—giving up drinking for Lent, meeting the priest at the Newman Center on campus, going to a live-in weekend at a seminary, hearing the call.
“I want to help people realize that a relationship with Christ isn’t some ethereal, pie-in-the-sky, nuns-with-crossed-hands cute thing. When it’s 10 degrees out and the wind is howling, Jesus is a man who gets what you do,” said Father Gross.

Even so, his vision of the priesthood had much more to do with North Dakota in its rural past than in its fast-growing present. “When I was in the seminary, this wasn’t on the radar screen,” Father Gross said of his flock in the fracking belt. “When I was ordained, this wasn’t on the radar screen. I thought maybe I’d be a high school teacher. Or I’d be in a typical North Dakota parish with traditional North Dakota families. You go hunting, you meet people at the coffee shop. It’d be the familiar small-town stuff. But everything’s changing at warp speed.”

Epiphany Catholic Church, to which he was assigned, was going to have to similarly change or fall into irrelevancy. When Father Gross arrived, replacing a predecessor who had been there for 24 years, the parish membership numbered barely 90, even though Epiphany was the only Catholic church for 20 miles in any direction. So Father Gross, rather than waiting for the already faithful to come to him, made a point of seeking out the wavering and the wayward. He baptized three-year-old children whose parents had never taken them to church and joined the 70th birthday party for a longtime resident who wasn’t even Catholic. He drove the twisty gravel roads that ended in patches of mobile homes or sometimes bare storage lockers that were rented out as living spaces.

He set up a men’s group and invigorated Christian education for children. In all those settings, he offered the common touch.

“You want to sit down and talk about sports? I can do that,” Father Gross said. “You want to tell me what you do on your rig? I’m authentically interested. I want to know who you are. And I
want to help people realize that a relationship with Christ isn’t some ethereal, pie-in-the-sky, nuns-with-crossed-hands cute thing. When it’s 10 degrees out and the wind is howling, Jesus is a man who gets what you do. He even understands you use the F-word a lot.”

Luke Taylor was among those who took positive notice. At 29, he is the fourth generation of his family to live in Watford City. His, however, is the generation that saw everything familiar be radically transformed. Within a matter of years, Taylor went from delivering fertilizer to farmers to owning a fleet of 50 water trucks that serve fracking operations.

“All I know is we were pretty excited when Father Brian came to town,” he said. “We were looking for a spark with all the activity going on. He’s dealing with all the challenges as we all are—housing shortages, lack of services and infrastructure, dangerous roadways. And he deals with it with all his energy and enthusiasm.” Shawn

Above, Shawn and Stephanie Ray are building their new house by hand east of Watford City.

Right, Fr. Brian Gross meets with Rev. Sheldon McGorman, the pastor of Watford City Assembly of God, to discuss Macedonian Ministries—a worldwide, interdenominational organization helping pastors work together and strengthen congregations.

and Stephanie Ray depended on those traits during the winter of 2013. Driven out of Florida by the recession, they had followed rumors of high-paying work to Watford City. There, Shawn found himself going from job to job and trying to build a house by hand as his wife and two young daughters lived in a camper so flimsy it had to be insulated with bunched-up blankets. Wondering if he should give up, Shawn Ray approached Father Gross.

“Our faith would falter,” Ray recalled. “You really question yourself when it’s 10-below and you’re out there putting in windows and living in a camper. What are we doing? Why are we doing this? And Father Gross was always available
to us. He would understand exactly what we’re going through. He’d always say, ‘There’s something going on here. You’re part of something big. And when you’re part of something big, you’re gonna come under some attacks.’ He’d remind us that fear isn’t from God. God doesn’t push. God doesn’t rush. God is just there waiting for you.”

For Anthony Loyola, who had come to Watford City so he could pay off $27,000 in college loans, Father Gross addressed both practical and spiritual obstacles. When Loyola was between jobs and unable even to rent a parking space for his van—the boomtown price is $500 a month—the priest let him keep it in the rectory’s lot for free. And when Loyola was working alongside hard drinkers and avid philanderers and prostitutes’ johns, he unburdened himself to Father Gross. “Guys would figure out I’m more religious and start kind of mocking me,” Loyola recalled. “But Father Brian reminded me that in the same room where people are mocking you, there are at least five people who agree with you and don’t feel able to say so.”

Thanks in no small measure to Father Gross, Anthony Loyola and the Ray family have persevered, building the stable lives that Watford City will need to endure the highs and the inevitable lows of hydraulic fracturing’s Gold Rush. They all have become regular communicants at Epiphany, part of a congregation that now exceeds 200. Lately, Father Gross has had his eye on a parcel of land a mile outside of town. There he hopes to build a new church and a Catholic school.

The priest might have had such rootedness in mind one afternoon last December when he was teaching a confirmation class to about a dozen 9th and 10th graders. “Our life isn’t just a random set of experiences that happen to us,” he gently told them. “There’s an order that makes sense. God is the one who brings that order. You just have to allow Him to.”
Great Western Anxiety

We do not ride on the railroad; it rides upon us.

Henry David Thoreau
Walden; or, Life in the Woods.

R. Jared Staudt, PhD
Assistant Professor of Theology and Catholic Studies, University of Mary

J. M. W. Turner, a revolutionary painter amidst another revolution, the industrial upheaval, bridged the artistic gap between Romanticism and Impressionism, while protesting the end of England’s agricultural and pastoral society. Turner contrasted technology’s sheer mechanical power to the raw, undeniable forces of nature. Turner’s painting, “Rain, Steam and Speed,” (1844) typifies his vision. It shows a train steaming toward London over the newly constructed Maidenhead Railway Bridge during an intense rain. Although much of the painting is indistinct, as field blends with storm—pregnant with a foreboding future—the locomotive slices through the painting, its distinct black stack rising like the truncated cross on industry’s new and relentlessly mobile cathedral. England’s Great Western Railway was
laid down in the early 1830s, and Turner shows what it displaced with a barely discernible farmer to the right of the track and a small rabbit running for safety ahead of the train.

Great art communicates to us in an ageless fashion as it springs from poetic insight rooted in an artist’s particular vision. Turner perceived the power of emerging technology and the anxiety it created in his day—and ours. The same insight speaks clearly to us today, especially in North Dakota.

Turner’s painting illustrates the awesome power and beauty of weather sweeping across the plains. The painting also resonates with the stark splendor of the Northern Great Plains.

But weather does not have the last say in Turner’s work, which focuses on the power of the locomotive, undaunted by the storm, cutting through the elements rather than being limited by nature. We experience the same tension now as trains barrel by our homes laden with the oil that is transforming our region. Oil presents both great opportunities and challenges for our state.

Is technology’s inexorable advance on a collision course with nature, whose raw power cannot be diminished? Or will science, the environment and industry find accord? What is the future of traditional agriculture and small-town life? These questions remain as poignant in North Dakota as evoked in Turner’s timeless and timely vision.

Opposite, “Rain, Steam and Speed—The Great Western Railway” by J. M. W. Turner was first exhibited at the Royal Academy in 1844.

Above, a BNSF freight train hauling grain east crosses the Missouri River High Bridge at Bismarck.
But gentlemen, it is all so infinitely complicated.” This favorite phrase of Gustav Schmoller, a 19th-century German economist, applies to many economic situations—especially predictions. While I would be the first to admit that physicists are smarter than economists, I would also say that economics is more difficult. In the natural sciences, there are constants, measurable variables and experiments to confirm or falsify theories. None of this is true for economics. Some causal connections are known while others remain mysterious. Many variables are only vaguely defined, immeasurable or unknown altogether, and even the known and measurable ones continuously change.

The collapse of the price of oil, which began in June 2014, has been the most important story for the energy sector, not only in North Dakota but across the nation and worldwide. We know the obvious: that the price is determined by supply and demand. Just how supply and demand behave is controlled by countless volatile and unpredictable factors, including everything from engineering solutions in the Bakken to the monetary theories held by governors of the U.S. Federal Reserve.

Accordingly, the complexity of influences behind prices means that economists are—regardless of what TV pundits in search of attention say—fundamentally unable to forecast prices. The daily price of oil is a dynamic distillation of all possible information about current and future oil production and uses available to humans around the globe. Claiming predictive powers is tantamount to claiming superior insight into the cumulative knowledge assembled by global markets.
Reality Check and Signal

Oil prices result from filtering information from around the world and these prices also tell us something about the world. The recent fall in oil prices reveals, for example, that there is a lot of oil floating around. To a significant extent, this is due to the shale revolution, which started in the Bakken in 2008. Oil production increased dramatically in North Dakota, passing a million barrels per day in April 2014. Despite low prices, American oil production is still expected to grow in 2015, averaging 1.1 million barrels per day (bpd).

High oil prices crested in 2008 at over $140 per barrel, declined rapidly and then rose steadily to more than $100 per barrel in 2010, which persisted until mid-2014. Because of such high prices, many previously unprofitable oil fields became attractive and production increased further.

One popular estimate is that for every $10 drop in the price of oil, the world economic output grows by half a percentage point.
The U.S. ranks third in crude oil production behind Saudi Arabia and Russia and, since 2012, has ranked first in the production of petroleum and other liquid hydrocarbons, including natural gas liquid and biofuels.

The falling price of oil acts as a reality check and a signal in the opposite direction. Producers are already reacting, and in North Dakota applications for new permits have more than halved since last year.

Locally, it is important to know what kind of projects will be abandoned. Estimates for North Dakota’s breakeven price average in the mid-$30s per barrel, with large variations for different areas and producers. Some outlying areas of the Bakken break even at $85, where drilling has been suspended. Currently (September 28) the price of WTI crude oil is $44.74 per barrel.

Oil production requires significant fixed investment including equipment, personnel and other rig costs. Then when the well is drilled, pumping continues even below the breakeven price. In the short term, price drops will not drastically impact quantity. Bakken production hit a record 1.22 million bpd in December and 1.2 million in May. What matters are overall trends and expectations.

**Expectation of Abundance**

Judging from current prices, it seems the shale revolution has created the expectation of abundance. For most American consumers, and for most of the world, cheaper oil is good news. We save money at gas stations and falling transportation costs drive the prices of almost everything else down. Not only do consumers save, but cheaper oil—provided that prices are driven down by improving production and not by falling demand—is often associated with higher overall economic growth. One popular estimate is
that for every $10 drop in the price of oil, the world economic output grows by half a percentage point. Economic growth is good in itself and also acts as a self-correcting mechanism for the price of oil in the long run. A stronger economy means higher total demand for goods and services and, in turn, higher demand for oil. This pushes oil prices back up.

Naturally, world economic growth is swayed by factors more important than the price of oil, and it will take more than this feedback loop to lift oil prices significantly. Prognoses for long-term economic growth nowadays are as extreme as swings in oil prices. Several influential commentators, such as Larry Summers (former Secretary of the Treasury, economic advisor for the Obama administration and President of Harvard University), see a gloomy picture. Technological progress, their argument goes, is likely to slow down because technological low-hanging fruits were harvested in previous decades, and there is not much left to be invented. If true, a period of prolonged stagnation and stalling global demand might be in front of us.

Other commentators, in contrast, see endless possibilities ahead. Technological progress will not slow down but instead continue to advance and, combined with other innovations and inventions, accelerate future growth sometimes in directions unfathomable to us today.

**Central Banks**

Short-and medium-term economic growth prospects are more intelligible for economists. Save for wars and catastrophes, the strongest determinants of such economic growth are the actions of central banks around the world. This has been especially true in the aftermath of the recent Great Recession. The U.S. Federal Reserve’s decision to end the third round of quantitative easing, announced in October 2014, has contributed to the stronger dollar and therefore to cheaper oil in dollar terms. The traditionally conservative European Central Bank (ECB) has been, even by its standards, overly restrictive in the past several years, unwittingly slowing down economic growth in the eurozone. This year, ECB changed course and started a quantitative easing program, which has already been effective in boosting aggregate demand, growth and prices in Europe. This monetary intervention contributed to the partial oil price recovery in the first half of 2015. Still, with the sluggish Japanese economy and intensifying warnings of a coming slowdown in China, world consumer and investment demand has not been at its strongest. The very healthy supply of oil in combination with rather lukewarm demand makes for low oil prices.

This is merely a peek into the entire scenario but with impacts as diverse as...
the ones mentioned, it becomes clear why making sense of the oil market is, to borrow from Schmoller again, “so infinitely complicated.” Those adversely affected cannot do much about oil prices, but they are not entirely toothless. Producers reacted with improvements in efficiency that continuously increased drilling accuracy and lowered the cost of fracking. The silver lining of another negative price shock is the pressure it puts on producers to keep seeking technological innovations and organizational advancements.

Dutch Disease

Policymakers can do more. All across America, warning signs of previous economic declines remain: abandoned mining towns, rotting barns, rusting factories. Detroit, for example, was one of the most prosperous industrial hubs in the world and then declined all the way to bankruptcy. North Dakota has seen oil booms and busts.

The Economist coined the term, “Dutch disease,” in 1977 “to describe the woes of the Dutch economy,” the magazine reported. “Large gas reserves had been discovered in 1959. Dutch exports soared. But, we noticed, there was a contrast between ‘external health and internal ailments.’ From 1970 to 1977 unemployment increased from 1.1% to 5.1%. Corporate investment was tumbling. We explained the puzzle by pointing to the high value of the guilder, then the Dutch currency. Gas exports had led to an influx of foreign currency, which increased demand for the guilder and thus made it stronger. That made other parts of the economy less competitive in international markets…. Since that article, economists have proposed other Dutch-disease effects.”

When oil booms happen, it is normal and desirable that resources are diverted to the most profitable use. But the inevitable adverse effect is that other economic sectors suffer. As noted above, after the Netherlands found large reserves of gas and started exploiting them in the 1960s, its currency appreciated rendering the nation’s economy uncompetitive internationally and hindering the development of other business sectors. In North Dakota, this effect has manifested in high wages, rents and prices in general. It is wonderful that local workers are paid some of the highest wages in the nation. But that is not attractive for prospective investors in sectors other than oil, which have to compete for workers.

Welcoming Other Businesses

To offset the discouraging effects of high wages and other business costs, policymakers in North Dakota might consider what other successful states have done: Create a welcoming business environment for sectors other than oil and oil-related services. Although North Dakota is wisely building a

The way to think about Detroit in the early 20th Century is as one of the great boomtowns of the world, the center of the world’s most innovative industry. It was the Silicon Valley of the 1910s, 1920s. And because its growth was so concentrated, and so focused on a single industry, its fall has been very similar in its speed and in its depth.

Kevin Boyle, Author and Professor of American History, Northwestern University
rainy day fund with surplus oil revenue, it would be better to ameliorate the impact of downturns in one sector by diversifying the state’s economy.

After the oil bust in the 1980s, Texas launched development programs to stimulate business and encourage economic diversification. As a result, the state’s GDP grew from 6.5 percent of the nation’s total in 1995 to 9 percent in 2014. At the same time, between 1982 and last year, the proportion of tax revenue generated from oil and gas declined from 18 to 5.5 percent.

Delaware has permissive corporate laws and no sales tax. South Dakota has low unemployment rates comparable to North Dakota without the oil boom. Instead, South Dakota relies on zero individual income and corporate tax policies to stimulate business growth. South Dakota ranks second and Wyoming ranks first on the 2015 State Business Tax Climate Index, published by the Tax Foundation, a non-partisan research think tank based in Washington, D.C. In comparison, North Dakota ranks a distant 25th.

Business friendly policies are not always affordable in the short term and that is why states shy away from them. But in the long run they pay off. New businesses and their workers increase commercial activity, population density and establish networks. These stimulate communication, business exchange and idea sharing, which become sources of creativity and additional growth. The economy, as a result, becomes dynamic and versatile, which renders oil-price uncertainties much less worrisome.

In North Carolina, policies to reduce taxes (individual and corporate) and unemployment insurance benefits helped create 200,000 jobs, lowered the unemployment rate by 30 percent since 2013 and produced a budget surplus of $400 million.
Fracking Then

Today’s hydraulic fracturing technologies trace their roots to the Civil War. In 1865, Col. Edward A. L. Roberts received his first patent for an “exploding torpedo.”

**ARTILLERY SHELLS** exploded in a canal during the Civil War and fracking was born. During the Battle of Fredericksburg in 1862, Col. Edward A.L. Roberts of the New Jersey Regiment observed Confederate artillery rounds plunging into a millrace, a narrow canal built to feed water through a mill’s waterwheel, on the battlefield. The effects of the explosions on the canal’s stone walls gave him the idea for the first fracking technique, which he termed “superincumbent fluid tamping.”

On April 25, 1865, Roberts received the first of many patents for what became known as “Roberts Torpedo.” The patent shown on the left for an improved version was awarded in November 1866. The new technology greatly improved oil-well yields up to “1,200 percent within a week of being shot,” reported the Titusville Morning Herald.

“The torpedo, which is an iron case, containing an amount of powder varying from fifteen to twenty pounds, is lowered into the well, down to the spot, as near as can be ascertained, where it is necessary to explode it. It is then exploded by means of a cap on the torpedo, connected with the top of the shell by a wire.” The well’s borehole was filled with water to provide “fluid tamping,” which focused the detonation and fracked the oil strata.

**Moonlighting**

Roberts charged high fees ($1,850 to $3,700 per torpedo in today’s dollars) and a royalty of one-fifteenth of the increased flow of oil. To avoid these costs, some oil producers hired unlicensed imitators who operated by moonlight and became known as “moonlighters.” By 1868, nitroglycerin was used by Roberts and copycats despite the danger—which increased greatly when pouring the volatile explosive (pictured to the right) by moonlight. Nights in the oilfields of Pennsylvania were sometimes lit up by more than the moon.
A shooter pouring nitroglycerin explosive into the torpedo
(American Oil & Gas Historical Society)
The shale is fractured by the pressure inside the well. Wells are horizontal at the Middle Bakken Formation. Sand keeps fissures open, and a mixture of water, sand, and chemical agents is pumped down the well. Natural gas flows from fissures into the well. Water and other fluids are pumped up to the surface.
FRACKING INVOLVES drilling two to three miles straight down and then curving horizontally for another one to three miles. The goal is to intersect layers of oil-filled dolomite rock between impermeable layers of shale. Explosives are used to pop small “perforations” in the sides of the horizontal pipes, and then millions of gallons of water mixed with sand proppants are blasted down to pulverize the rock and open up fractures, which enable oil and natural gas to escape. So far, about 12,000 wells have been drilled out of an estimated 100,000 wells needed to extract the Bakken’s reserves. Even then, only 15 to 25 percent of the area’s oil will have been squeezed out of the Bakken formation. Future technologies and refracking techniques might access the remaining hydrocarbons.

Watering Down Fracking Fears
After four years of exhaustive study, the EPA released a 998-page report in June concluding that “[w]e did not find evidence that these mechanisms have led to widespread, systemic impacts on drinking water resources in the United States.” No one doubts that the EPA’s investigation was rigorous. The report cited ways that fracking activities could possibly impact drinking water resources negatively, including “water withdrawals in times of, or in low water availability; spills of hydraulic fracturing fluids and produced water; fracturing directly into underground drinking water resources; below ground migration of liquids and gases; and inadequate treatment and discharge of wastewater.” However, such possibilities have precipitated only isolated incidents and mostly when fracking technology was in its early stages. As can be seen in the graphic to the left, groundwater, as well as rivers, lakes and streams, is protected from drilling and all stages of fracking by multiple layers of concrete encased steel piping.
Geology, Gender & God

Kathy Neset’s unique journey from small-town New Jersey through the Ivy League to the farms and oil fields of the Bakken

Patrick J. McCloskey, author and Director of Research and Publications, University of Mary

How does a Jersey girl end up running the Bakken’s premier geologic and geosteering consulting company? Kathy Neset co-founded Neset Consulting Services with her late husband Roy in Tioga, North Dakota in 1980. The company now has 38 employees led by Kathy Neset, who serves as president, and her two sons. RC is a petroleum geologist in charge of researching and designing gas analyzers for the company’s gas detection division. Randy is a petroleum engineer for Neset Consulting and also an operations vice president for an upstream oil and gas company.

“How my story happened could be nothing other than God-driven,” Neset said in an interview. “I could never have made this up myself.”

Naturally (or divinely) Neset’s first step to becoming a mudlogger involved cheerleading. There she was on top of the cheerleader’s pyramid at a Friday night football game at Warren Hills Regional High School in central New Jersey. Brown University’s athletic director sat in the stands watching the game hoping to find recruits. He didn’t find any suitable players but he noticed Neset and said, “Let’s take her.”

The next day, Neset learned that “brown” was not just a color and the following September, she was off to the Ivy League university in Rhode Island. “Brown is one of those snobby schools, very ultra liberal,” she said with a laugh at a talk she gave at the Lunch & Learn series at the University of Mary’s Gary Tharaldson School of Business last December. “I survived and I am a testament that if you stay true to yourself, you can maintain your identity.”
For Neset, this meant cheerleading, playing soccer and ice hockey, and majoring in math, which kept her in the more traditional cultural areas at Brown. She never strayed from family and church as fundamental principles. “Stay true to your beliefs,” she said. “This is how you follow your path, follow what God has designed for you.”

Sitting in math classes, Neset had no idea that God’s design involved oil fields. Nor would she have believed it—until she took a geology course and went on a field trip with her class and a “dynamic” professor. On the bus, she realized, “Wait a second. You’re allowed to drink a beer on the way home? I don’t have to go back to the library and bury myself in studying imaginary numbers?” She fell in love with geology and changed her major.

After graduating, Neset was hired by Core Laboratories to be trained as a mudlogger. “I really didn’t know what a mudlogger was, but it sure sounded neat to me,” she recalled with a smile. Checking for and recording traces of oil in the mud stream used in the drilling process (mudlogging) took Neset to Texas, Wyoming and then to North Dakota in 1979.

**Spirit of Pioneering Women**

It was unusual for women to work in the oil fields then and it’s still uncommon. “The golden era of the hardy pioneer woman has not faded into a shadowy relic of the past,” said Neset in an interview. “Today she may not be
breaking virgin sod with a horse and plow, but there remain plenty of challenges on the prairie for a strong and tenacious spirit to test herself against.”

Neset’s career and private life are a testament to that spirit. After marrying, she and Roy moved to his farm near Tioga, which can be seen—along with a Hess gas processing plant—from the northeast edge of town. The 1980s oil boom provided opportunity for the consulting business to flourish. “The oilfield was a little different then,” she remembered. “I was able to bring the boys to the rig with me and they grew up washing samples and learning about oil fields.”

But then came the bust in the mid-1980s. “Farming kept us alive,” she said. “These were difficult days, living one slip and fall away from bankruptcy.” Roy taught her and their sons how to farm, while Kathy also taught high school science as a substitute teacher.

In 2005, Roy died just 10 days after their son RC married. “We regrouped as a family and thought about going back to New Jersey.” Neset’s mother still lived there and was 80 years of age. “But my children knew North Dakota as home, so I stayed here.”

Then in 2008 as the fracking boom began, both her sons were deployed to Iraq, RC with the North Dakota National Guard and Randy with the Montana Air National Guard. So for most of that year, Neset was alone as she worked to grow Neset Consulting Services to meet the quickly increasing demand.

A Neset Consulting employee monitors mudlogging at a drill site in the Bakken near Tioga, ND. These technicians provide 24/7 wellsite geology, mudlogging and geosteering data. This enables the drilling company to place the drill stem precisely in the oil-producing Middle Bakken shale formation, which might be only 10 feet thick.
Role Model for Young Women

“When young women apply to work for Neset Consulting Services,” Neset said, “they say, ‘Hey, I want to do this. I like science, engineering and technology. I want to have a good-paying job.’” She emphasized how important it is for successful women to act as role models for young girls and encourage them in the early grades to study math and science.

The big question that gets asked next is, “Am I safe in the oil field?” Neset puts her hands on her hips, at least figuratively, and always answers, “Yes, I have lived it for years on drilling sites. I don’t care if you’re living in Bismarck or on a rig out in Park City, Utah, you have to be professional. Your demeanor is what you bring to the table. You set the standard, young lady, and tell the world: ‘I’m here for business.’”

Leadership as Comfort in the God Zone

The question today’s leaders and those aspiring to leadership need to ask, Neset stressed, is: “Are you comfortable with yourself? Are you comfortable leading others?” Neset’s sense of “comfort” has nothing to do with contentment or ease but rather with integrity.

To begin, “stay true to your roots,” which might seem contradicted by Neset’s move far away from the East Coast. But she fell in love with North Dakota because it “reminded me of the New Jersey of the 1960s and 1970s.”

Most importantly, Neset takes Jesus as the ultimate leadership role model and recommends reading Lead Like Jesus by Ken Blanchard. “Of course I’m in tune with this at church on Sunday. But how about when you’re in the boardroom or talking about Bakken oil wells? It’s important to develop that level of comfort.”

In practice, Neset talked about the Benedictine value of servant leadership as a mandate, as the way of leading as Jesus lived. For parents, instead of seeking to be friends with one’s children, this means fulfilling “our responsibility to lead and teach our children.” In the office or at the supermarket, servant leadership means influencing other lives positively, “which makes everyone a leader.”

In business, this also means giving back to the community, which Neset does via various charities and local projects, and through serving as a board member for the Lewis and Clark Fort Mandan Foundation and as the secretary of the Saint Thomas Parish Council in Tioga.

On Top of the Pyramid

Kathy Neset still stands on top of the pyramid—in the Bakken, both as a cheerleader and oil industry leader. In 2014, she was awarded the Prairie Business Top 25 Women in Business Award, the American Petroleum Institute’s Top 50 Women Award, and the North Dakota Governor’s Secretary of the Year Award.
Institute’s Outstanding Achievement Award and the Williston Regional Economic Development Corporation Ambassador of the Year Award. Neset serves on the Board of Directors of the Federal Reserve Bank of Minneapolis and of the North Dakota Petroleum Council. She is also a member of the Bismarck State College Petroleum Technology Advisory Committee and the University of North Dakota’s Petroleum Engineering Advisory Committee. Looking to the future, Neset serves as Chair of North Dakota’s State Board of Higher Education.

“I’m passionate about fracking as safe, effective and good for this country,” she said. “The hardest part of any oil field is finding it. Now it’s a matter of increasing the recovery percentage maybe up 20 percent, but that will take a lot of work.”

Today, with oil prices down, “people ask me about the state of the oil industry. What is this doing to our industry, to our nation? And I say this world is so chaotic, we don’t know.” Yet for Neset, geology and geopolitics converge not always in an answer but certainly as challenges enveloped in her faith: “God is not going to leave us to do this by ourselves; He is with us. He is not going to burden us with things we can’t handle.”
Political support to lift the U.S. ban on exporting crude oil is gaining momentum in Congress, yet the White House opposes legislation banning the ban. The underlying problem is that the export ban was instituted as a tactic to achieve a strategic goal, which no longer makes sense. A new national energy strategy, however, has not been articulated, nor is there any indication this is forthcoming. How can the oil export ban question be addressed in this strategic vacuum?

Imagine the federal government deciding to ban the export of automobiles or agricultural products in order to secure a steady supply for American consumers. The net impact would include a significant drop in economic output and massive job losses. Consumers would pay more for American cars, and manufacturers would lose market share to foreign competitors. Food prices would increase sharply, and many smaller farms and related businesses would go bankrupt.

We rail at trade, but the historian of the world will see that it was the principle of liberty; that it settled America, and destroyed feudalism, and made peace and keeps peace; that it will abolish slavery.

Ralph Waldo Emerson
Of course, there are situations in which it makes sense to restrict exports—temporarily. During WWII, American producers weren’t exporting to Germany, both to avoid helping the enemy and meet the needs of our military. After the war, exports resumed and our economy roared.

In the 1970s, the U.S. imposed a crude oil export ban in reaction to several factors, including the Arab oil embargo in retaliation for our support of Israel, rising energy prices and peaking domestic production. For the last 40 years, the ban has stayed in place ostensibly as a means (tactic) towards energy independence (strategic goal).

Has the export ban helped the U.S. achieve energy independence? Oil imports increased by 392 percent through the 1970s to 2.38 billion barrels per year. Imports then declined through 1985, after which imports rose over 200 percent to 3.7 billion barrels per annum in 2005. Since then, oil imports have declined steadily by 28 percent. The oil export ban has proven somewhat successful, since much more oil would have been imported prior to 2005, and afterwards domestic production has finally been alleviating our dependency.

Can energy independence be achieved? Since the shale revolution began in 2008, crude oil production has increased nationwide by 74 percent, which accounts for the decline in imports. Oil production would have to increase by another 85 percent to cover the full amount of imported crude. Given fracking’s potential, combined with ever-increasing technological efficiencies, it is possible to produce enough oil to eliminate imports.

However, it’s not as simple as increasing production. Shale oil is sweet, light
crude and most U.S. refineries are configured to process heavy, sour crude. While some domestic refineries are being upgraded to also process sweet crude, shale oil production will still exceed refinery capacity as early as 2018. As well, no plans have been announced to build new large-scale refineries, which would be enormously expensive.

The first domestic refinery to be built since 1976 opened in May near Dickinson, North Dakota. Dakota Prairie Refinery (DPR) processes 20,000 barrels of sweet crude per day, which is less than 2 percent of Bakken production. Still, DPR cost $400 million. What would a refinery capable of processing a half-million barrels per day cost? What would ten of them cost?

In the absence of sustained high oil prices, investments on that scale, especially in the context of onerous Environmental Protection Agency (EPA) regulations and opposition from environmental activists, would only be made as part of a national energy strategy—which is missing.

Since the 1970s, American president after president has failed to generate a comprehensive plan for energy security. Creating such a plan has become urgent considering the growing chaos, violence and threat of a major war in the Middle East, which could disrupt oil exports from that region.

As well, the recent nuclear deal with Iran could dramatically increase the likelihood of escalating conflicts throughout the Middle East. Significantly, the deal includes lifting the ban against that country exporting oil.

Clearly, national energy policy makes sense only in the context of foreign policy. Yet missing again is a comprehensive American foreign policy strategy, about which our allies have been voicing increasing concern for several years. This vacuum also dampens criticism of U.S. policy since there is no objective by which to assess it. Any specific action can be seen as completely effective or completely ineffective. Policy, as a result, is adjudicated by polls.

In the meantime, permitting producers to access international markets would at least help companies stay in business. A recent report by Wood McKenzie, a global consulting firm, estimates “that $1.5 trillion of uncommitted spending on new conventional projects and North American unconventional oil is uneconomic at $50 a barrel.” Tough times might last and worsen. It would be prudent to increase the odds there will enough oil being produced to export when (if) a future administration develops national strategies. Ironically, lifting the ban now is the only way to ever justify one later.

**New Reality, New Legislation**

Since 2008, horizontal drilling and hydraulic fracturing, primarily in the Bakken and Texas, have propelled the U.S. to become the world’s largest producer of petroleum products, nearly doubling Saudi Arabia’s output. “America’s energy landscape has changed dramatically since the export ban was put in place in the 1970s. We have moved from energy scarcity to
energy abundance,” said Senator Lisa Murkowski (R-AK), the Senate Energy Committee Chair. “Unfortunately, our energy policies have not kept pace.”

In response, Sen. Murkowski introduced a bill in May that would permit the export of crude oil. The legislation has been gaining support among Republicans, including North Dakota’s Senator John Hoeven and Congressman Kevin Cramer, and Democrats. Significantly, the bill was co-sponsored by Senator Heidi Heitkamp (D-ND). Given the rarity of bipartisan cooperation in recent years, the eventual passing of legislation in both chambers seems hopeful.

### Strategic Thinking

Coherent strategic thinking involves four key aspects: (i) identifying a strategic goal, with realizable, measurable outcome(s); (ii) aligning all tactics with the strategic objective; (iii) adhering to a timeframe that will lead to success, while depriving the opponent (or status quo) of the ability to react; and (iv) forming an exit plan to transition effectively from success or failure.

This summarizes the strategic approach created by USAF Col. John A. Warden III (Ret.) who was the strategic architect of the successful U.S. air campaign in Gulf War I, which saved tens of thousands of lives on both sides. Col. Warden is currently the president of Venturist, Inc., a strategic planning, consulting and executive training firm. As well, Col. Warden has written several articles applying strategic thinking to international security issues on Forbes.com with this article’s co-author, Patrick J. McCloskey.

The first two aspects of strategic thinking are especially relevant here. The strategic goal is all about determining the desired future, which means envisioning an objective, quantifiable picture of the future that an individual or organization wants to create. This “future picture” acts as a beacon telling the planner where to end up, but it doesn’t articulate the details of how to get there. Often this is overlooked, resulting in tactics being mistaken for strategy, which can be fatal. Consider the Vietnam War, during which American armed forces successfully executed a wide range of tactics over many years. Tactical victory was almost perfect, yet the U.S. lost the war precisely because tactics were not aligned to a coherent future picture.

To align tactics with strategy, a realizable goal must be articulated. Pulling U.S. troops from Iraq in 2011 was a strategic goal regarding domestic politics but was tactical in foreign policy terms. Ergo, the chaos. The move appeared to be the execution of an exit plan, but it was hardly effective, not connected to a coherent strategic military or geopolitical goal, and constituted abandoning a precarious situation. As Obama’s military advisors warned, massive destruction ensued and now the Islamic State of Iraq and al-Sham (ISIS) threatens to unite Sunnis from southern Iraq to Pakistan into a radical Islamic caliphate determined to oppress its own people and destroy the West.

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*Do you not know, my son, with what little understanding the world is ruled?*

— Pope Julius III
This scenario and the Iran deal are significant here since top regional oil exporters, such as Saudi Arabia, are now caught in a dangerous trap. It seems likely they will invest large sums in developing nuclear weapons, while simultaneously fighting both Iran’s Shiite proxy forces and ISIS.

The Big Ouch

Before ISIS was allowed to become a major threat and before the U.S.-Iran deal, the Saudis initiated a strategic attack on American shale oil producers, which they considered a threat. For decades, Saudi Arabia adjusted its production to keep world oil prices high. Last October, the Saudis believed that causing oil prices to fall from over $100 to $80 per barrel would prove fatal for U.S. companies. But they adjusted quickly and oil production increased. Prices fell below $50 in February and then rallied for a few months, which turned out to be like a dead cat bounce as prices tumbled below $39 in August. Approaching the end of September, prices were back in the mid-$40s, but no one knows whether felines or bulls will dominate the future.

The Saudis are losing about $300 million per day, which amounts to almost $110 billion a year. Worldwide, oil producers are projected to lose $4.4 trillion over the next three years, according to the Wall Street Journal.

Bakken producers are losing over $70 million per day, which negatively cascades through the region’s economy and impacts state tax revenues. Also, the ban causes shale oil companies to sell at a significant discount, averaging about $5 per barrel. This amounted to a loss of almost $190 million in 2014. While this is a sustainable loss at $100 per barrel, it becomes a matter of survival at $60 for many producers.

From rubbery cat mortality, the Saudis have proceeded to “dog chasing its tail” tactics. To make up for lost revenue, the Saudis increased production, which remains high. This contributes to lowering prices further and the barking death spiral accelerates. At the same time, global demand remains stagnant in many regions and growing only slightly in others.

What the Saudis need is an exit plan from a failed strategy. But after initiating a price war that has hurt OPEC and non-OPEC nations alike, the Saudis have lost much of their clout in setting world rates.

Iranian Oil & the Big Opportunity

The U.S.-Iranian nuclear deal will allow Iran to export oil freely, which could not come at a worse time. The current imbalance of supply and demand will persist through 2016, according to a recent International Energy Agency report—without new Iranian oil, which could amount to an additional 3 million barrels per day (bpd) in the coming years.

It is difficult to imagine why President Obama supports lifting the oil export ban for Iran, which is not an ally, and opposes lifting the ban on American producers. Once again, no U.S. strategic framework has been

Oil is like a wild animal. Whoever captures it has it.

J. Paul Getty
articulated within which to decipher this apparent contradiction.

Worse, Iran produces sweet as as well as sour crude and could eventually compete for market share at refineries in Europe and even South America, if the ban on exporting U.S. crude remains in place. These refineries are configured for sweet crude, and production has stagnated or is declining among their traditional suppliers in the North Sea, Africa and Latin America.

According to a recent report by Turner, Mason & Company, consulting engineers, U.S. producers could profitably export “as much as 1.7 [million barrels per day] ... to European and Latin American refineries.” This opportunity offers huge benefits to the U.S. at a most opportune time. As well, American producers can export profitably at less than half the cost of Iran’s breakeven price ($131), which would curtail Iran’s geopolitical influence.

**Jobs as Job One**

Consensus has been growing in support of lifting the ban among a wide range of businesses, labor unions, think tanks, foreign nations and prestigious academic institutions, such as Harvard Business School. They agree that lifting the ban will lower gas prices, increase crude oil investment, create jobs and secure America’s geopolitical standing.

Job growth estimates range from 300,000 to one million new jobs nationwide. Given the likelihood of sustained low prices, however, lifting the ban might not precipitate this in the short term. Meanwhile, letting producers, who are major job creators, create—and save—as many jobs as they can via competition is the best bet.

In the long term, the Bakken will be producing for decades. EOG Resources, Inc., for example, just increased its estimate of potential resources on its assets by 2.5 times to 1 billion BOE (barrel of oil equivalent, which includes all petroleum products).

**Number Two and Trying Harder**

In July, the Mercatus Center at George Mason University released its ranking of the nation’s states by fiscal condition according to short- and long-term debt and other key fiscal obligations, including unfunded pensions and health care benefits. North Dakota ranked second, due to “high revenues from the oil and gas industry” and state fiscal responsibility.

The legislative component was highlighted in April when the American Legislative Exchange Council released its annual report, “Rich States, Poor States: ALEC-Laffer State Economic Competitiveness Index.” The index ranked North Dakota second on both economic performance (through 2013) and economic outlook (for 2015). The top marginal tax rate for corporations in North Dakota is 4.53 percent, compared to 17.16 percent in New York, which ranks 50th. North Dakota’s continued fiscal prosperity depends on the Bakken, which is also critical to national economic growth.

*Very few people can afford to be poor.*

George Bernard Shaw
Made in the USA, Again

A report by the Boston Consulting Group (BCG) in 2011 reached the astonishing conclusion that “[w]ithin five years … the cost gap between the U.S. and China for many goods consumed in North America” will close. Manufacturing costs are now 10 to 20 percent less than in major European countries, and many products will soon become cheaper to make than in China. The “U.S. can look forward to a manufacturing renaissance.”

In 2014, the International Monetary Fund (IMF) released a working paper titled, “The U.S. Manufacturing Recovery: Uptick or Renaissance?” The IMF praised the resilience of American manufacturing since the Great Recession, but a renaissance has not arrived quite yet. Both China’s and the U.S.’s shares of global manufacturing output have stabilized at 20 percent.

Essential to U.S. manufacturing’s future resurgence is the “significant reduction in domestic energy prices following technological breakthroughs in the exploitation of shale gas; in particular, recent advancements in drilling technology (including shale gas fracking) resulted in a significant increase in natural gas production in the U.S. and led to a reduction of domestic prices, which are currently about one fourth of those in Asia and Europe.”

Strategy (Beginnings) Found

Engineering a domestic manufacturing renaissance would involve a complex coordination of financial institutions, the small business and corporate sectors, and local, state and federal government legislators and regulators. Those issues are tactical and certainly doable. To begin, a renaissance could be proposed as a prime strategic goal for the nation’s future by private sector leaders and politicians who advocate economic growth.

Millions of jobs would be created in the long term and U.S. economic dominance would be reestablished, which would help restore geopolitical influence. This would help diffuse tensions in the Middle East, if tactically aligned with an effective foreign policy strategy, and prevent dead cat bounces. Volatility in oil prices harms economic growth.

Although not all factors required for a manufacturing boom are now present, the most important component is in place: cheap, reliable, safe and abundant energy. Lifting the oil export ban could safeguard this gift.

Energy & Moral Imperatives

At the top of the opposite page is an illuminating graph, showing that the demand for oil will increase greatly in the long term as the economies of developing countries become robust. Keeping up with demand will become a far greater challenge than the current oil glut.

Accordingly, the U.S. oil industry can make a powerful case for its potential contribution at home and abroad to alleviating poverty. A massive
increase in world demand will happen only because 85 percent of the planet’s population is finally climbing out of poverty. This imperative will only become more urgent as the world’s population is projected to increase by 2.4 billion people by 2050, overwhelmingly in impoverished countries. Affordable petroleum products are necessary conditions to transcending poverty.

Happily, American producers could help resolve this centuries-old plight and also generate enormous economic and geopolitical advantages, which the U.S. could use to address moral imperatives regarding the environment. It is essential to reduce both poverty and pollution.

Unilaterally reducing carbon emissions, for example, will have a negligible effect on world levels. The real challenge is to reduce carbon emissions and other contaminants at the same time as hydrocarbon use increases.

What the U.S. needs is a coherent national strategic framework to maximize international leverage through prosperity and increased investment in clean (conventional and alternative) energy research. On this basis, the U.S. could provide leadership in cultivating a balanced global strategy for properly developing human and natural resources.

In the meantime, lifting the oil export ban is a necessary prologue to this hopeful story.
On Monday and again on Tuesday afternoon (April 13-14), wildfires broke out to the west of the University of Mary and burned over 1,500 acres. High winds with gusts up to 39 mph after a prolonged period of arid weather created optimal conditions for the fire, which incinerated stands of trees and dense dry vegetation, crossed Apple Creek and reached the top of the hill behind campus. The photo above shows one of the three Black Hawk helicopters deployed by the North Dakota National Guard dropping water on the fire—or is this a scene from “Apocalypse Now”? On Monday, the helicopters completed a total of 101 runs, scooping water from the Missouri River with 600-gallon buckets, dousing the flames and preventing damage to university facilities.

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Edward F. Croker
Chief, New York City Fire Department
1899-1911

Photography

Fire on the Hill

“When a man becomes a fireman his greatest act of bravery has been accomplished. What he does after that is all in the line of work.”

Edward F. Croker
Chief, New York City Fire Department
1899-1911
Fire-fighting crews from the Wilton Rural Fire Department battle April 14th’s wildfire as it burns to the top of the hill near Sageway Path behind the University of Mary’s main campus threatening buildings. Firefighters and law enforcement from area departments, including Bismarck, Burleigh County, Mandan, Lincoln and Sterling, were also deployed and successfully helped suppress the fire.

Photographs Jerry Anderson, University of Mary
People often refer to the Crusades without understanding their actual history and meaning.

R. Jared Staudt, PhD  
Assistant Professor of Theology and Catholic Studies, University of Mary

Reactions to the Crusades tend to be black or white. Either the Crusades were evil crimes or they were glorious triumphs of medieval Christendom. The truth is somewhere in between and requires a recognition of the honorable aims of the Crusades and also the crimes committed in their various campaigns.

At the National Prayer Breakfast last February, President Barack Obama exhibited popular misconceptions about the Crusades (and the Inquisition, but that is beyond this article’s focus). Trying to put the atrocities of the Islamic State of Iraq and al-Sham (ISIS) in context, Obama said: “Lest we get on our high horse and think this (barbarity) is unique to some other place, remember that during the Crusades and the Inquisition, people committed terrible deeds in the name of Christ.” The real problem, which led many commentators to object, is the comparison of the Crusades to ISIS, as if barbaric evil was sanctioned by the Church during the Crusades.

President Obama is not alone in misunderstanding history. Shortly after 9/11, President Bill Clinton argued that the memory of the crusaders’ sack of Jerusalem in 1099 led to continued animosity between Muslims and Christians. Ironically, Bin Laden and other leaders of Al-Qaeda have also viewed their actions as responses to the crusaders, even when their targets are secular Westerners and not religious zealots.

According to Professor Thomas Madden, the Director of the Center for Medieval and Renaissance Studies at Saint Louis University, the truth is the Crusades were not major events in Islamic history, especially as Muslims.
ultimately won. Rather, misconceptions of the Crusades were introduced as “constructed memory,” in response to the modern West’s alleged imperialism in recent history.

President Obama’s facile comparison of the Crusades and Islamic terrorism earned a strong reaction, not because the crusaders were innocent. Their atrocities have been well documented. The real difference lies in the motives and goals of these distinct movements. Islamic radicalism sees the use of violence as a legitimate means of establishing the Dar al-Islam, the realm of Islam, in the world. Indeed, Pope Benedict touched a nerve in his Regensburg Address when he cited a dialogue between the Byzantine Emperor Manuel II and a Muslim, referred to as an “educated Persian.” The exchange linked the use of religious violence to a distorted understanding of the nature of God in violent jihad, the aggressive struggle or resistance against the enemies of Islam. Jihad is a duty for all Muslims and thus a central aspect of Islam. Certainly many Muslims and many interpretations of Islam don’t view jihad as primarily violent, but radical jihad has a long history.

Unlike Mohammed, a warrior and secular leader, Jesus preached love and peace and rejected the establishment of a physical kingdom. Nonetheless, medieval Christendom saw itself as a unified society only in and through the Catholic faith, and accepted Christ as its true King. The Crusades were not seen as an act essential to the Christian faith, comparable to jihad, but rather as a defensive measure in response to centuries of Islamic expansion at the expense of Christians. The Holy Land, Syria, Egypt, North Africa and modern-day Turkey were all Christian lands conquered by Islamic armies. By the late 11th century, the Byzantine Empire was in danger of extinction and Catholic pilgrims to Jerusalem were being slaughtered by Seljuk Turks. The Byzantine Emperor called upon the Pope to organize a response to this aggression, and Pope Urban II responded by calling the First Crusade in 1095.

The misreading of the Crusades, which persisted in academia into the early twentieth century and remains popular, saw them primarily as both a power grab by young, landless nobles and an expression of religious intolerance. In What Were the Crusades?, published in 1977, Jonathan Riley-Smith transformed Crusade studies. He is an historian, the founder of the Society for the Study of the Crusades and Latin East and the author of 15 additional books on the Crusades. The key point he establishes is the defensive nature of the Crusades—in stark contrast to Islamic expansionism and terrorism—which followed Augustine’s teaching on Just War Theory:

“It was just to defend one’s country, laws and traditional way of life, just to recover property unlawfully taken by another, perhaps even just to enforce by physical means a properly delivered judicial sentence. It was not just to wage a war of aggrandizement or conversion.”
Although it must be said that the Baltic and Albigensian Crusades were conceived as conversion campaigns, the Crusades to the Holy Land definitely met Augustine’s criteria by liberating Christian lands, defending the Byzantine Empire (even if some actions were criminal) and protecting pilgrims visiting the holy sites.

Smith refutes the false assumptions of modern scholars, especially Steven Runciman, whose writings have helped perpetuate contemporary Crusade myths. Smith explains that “the image of the landless youngsters on horseback riding off in search of land and wealth has been replaced by a more complex picture of knights and nobles … making sacrifices” of wealth, time, and especially their lives. Further, Smith argues that taking up the cross—worn literally on a crusader’s clothing—in a Crusade was ultimately an act of love and penance, since crusaders knew they were unlikely to return (and few did). Their goals included the liberation of Holy Sites, defense of pilgrims and atonement of sin through the hardships of traveling far and risking one’s life.

Because of the fractured feudal political situation in Europe, a central figure was needed to direct the effort. Accordingly, the Pope assumed the key coordinating role and called on Christians to set aside violent conflicts at
home and pledge service to the true king of Christendom, Christ.

Smith defined the nature and purpose of a Crusade as “an expedition authorized by the pope on Christ’s behalf, the leading participants which took vows and consequently enjoyed the privileges of protection at home and the [reception of an] indulgence.” The Crusades were holy wars authorized by the Church with the aim of liberating the holy sites. Smith further clarified that this “was a special kind of holy war in that it was also penitential. It was at first associated with pilgrimage to Jerusalem.” The penitential nature referred to the indulgence granted to crusaders, which resulted in the forgiveness of all temporal punishment for the forgiven sin (in shorthand, known as the forgiveness of sin).

If it is important to put the Crusades in the proper context and to appreciate their legitimate goals, it is just as important to recognize that the Crusades were marred by the sins and failures of individual and groups of crusaders. For example, as noted in a New York Times article in February 2015, Jews were slaughtered during the First Crusade. Tragically, some crusaders
and other Christians saw Jews as enemies of Christ. However, such attacks were never an accepted aim of any Crusade and instead were condemned by many bishops, popes and even personally stopped by St. Bernard.

Also, crusaders often participated in reprisals against Muslims. However, this was not done primarily through religious intolerance, but rather according to the common, albeit egregious, siege practices of the day.

In 2000, St. John Paul II officially apologized for crimes committed during the Crusades. Regarding the Fourth Crusade, the pope spoke to the Patriarch of Constantinople, saying:

“Some memories are especially painful, and some events of the distant past have left deep wounds in the minds and hearts of people to this day. I am thinking of the disastrous sack of the imperial city of Constantinople, which was for so long the bastion of Christianity in the East. It is tragic that the assailants, who had set out to secure free access for Christians to the Holy Land, turned against their own brothers in the faith. The fact that they were Latin Christians fills Catholics with deep regret. How can we fail to see here the *mysterium iniquitatis* at work in the human heart?”

Although war is at times justified and even necessary, it also unleashes dark forces within the human heart, the *mysterium iniquitatis*. As a result—but not as an excuse—Christians did commit terrible sins in the name of God. But this was not equivalent to Islamic terrorism, which sanctions violence as a religious obligation. In fact, ISIS commits outrageous atrocities—public beheadings, immolations and crucifixions even of children, as well as rape and selling captives into slavery—as part of a strategic plan to incite apocalyptic worldwide violence, as chronicled at length recently in The Atlantic magazine. While most Muslims reject this radicalism, it can’t be denied that intrinsically violent forms of Islam have existed since the religion’s founding.

How dangerous then to misinterpret Christian failings as essentially similar. Alternatively, it would be dangerous to valorize the Crusades, which would create the opposite false equivalency, and could be used to rationalize unjust aggression.

As Ross Douthat noted last February in the New York Times:

“The Crusades as an epoch-spanning phenomenon aren’t in and of themselves a great stain on Christian history: They’re a phenomenon in Christian history that includes many stains and sins and great crimes, but also involves many admirable figures and heroic moments, many great tragedies, and many individuals and incidents that simply resist any kind of manichaean reading.”

Many critics of the Crusades would seem to suppose that after the Muslims had overrun a major portion of Christendom, they should have been ignored or forgiven; suggestions have been made about turning the other cheek. This outlook is certainly unrealistic and probably insincere. Not only had the Byzantines lost most of their empire; the enemy was at their gates.

Rodney Stark
*God’s Battalions: The Case for the Crusades*
In London two years ago, I took part in one of the most surreal and expensive taste tests in human history. No, I didn’t eat a black Périgord truffle seasoned with gold or a bowl of beluga caviar. With 200 journalists and several hulking cameras staring at me, I was one of the two people chosen to taste the so-called Frankenburger: the world's first lab-grown beef burger, a five-ounce patty grown from bovine stem cells that took a Dutch scientist four years of research and $332,000 to create.

Since the event, I’ve been asked “the question” dozens of times, and each time I have given variations of the same underwhelming answer: “It was OK, needs more fat.” But as time passes and I get fewer opportunities to say “it was one small bite for man, one giant bite for mankind,” I wonder: Was this really the beginning of the Cultured Meat Age?

Will the Frankenburger devour the American beef industry?

Because of the costly research needed to make the cultured beef economically viable, I had my doubts. But when I found out that the mystery man bankrolling the burger was Sergey Brin, the co-founder of Google with an estimated net worth of $30.6 billion and a history of making sci-fi a reality, I instantly thought: Cultured beef could really happen on an industrial scale.

If Sergey Brin is right, cultured beef would have a devastating effect on the beef industry, especially in the Great Plains states. Almost half the nation’s 29.7 million beef cows are on ranches from Texas through North Dakota. Not surprisingly, there are over twice as many cattle than people in Wyoming and North Dakota, over three times as many in Nebraska and over four times as many in South Dakota.

High production costs and low beef prices precipitated a one-third decline in the number of cattle nationwide from the mid-1970s to last...
year. But increases in beef and milk prices in recent years finally resulted in a 2-percent increase in bovines by January 2015, and 60 percent of this occurred on the Great Plains. Last year, the beef and dairy industries generated $130.6 billion in cash receipts nationwide.

The Frankenburger is especially a threat (or boon, depending on one’s point of view) since ground beef constitutes 56 percent of the beef consumed in the U.S., and this could increase to 70 percent over the next 25 years according to a leading agricultural economist.

Of course, it’s a long way from one synthetic beef patty costing over $300K to tons of Frankenburger at $3 per pound. But Brin has nearly limitless resources. On the other hand, he also has limitless, omnivorous interests—everything from driverless cars to adventure space travel to asteroid mining projects. Brin didn’t attend last year’s burger tasting and hasn’t made any public comment on cultured meat for the past year. I wondered whether this was a one-burger-and-done project for him?

Not the case, said Dr. Mark Post, the Dutch scientist who created the cultured beef burger.

“He’s as determined as we are to make this happen,” Post told me, emphasizing that Brin’s second round of support will increase the size of his team from five to 20. In addition to tissue engineers and food scientists, the larger team will have experts on consumer preferences and on how to get the burger approved by food regulators. Will future farmers be teams of scientists, engineers and lab technicians?

“Fifty years hence,” wrote Winston Churchill in 1932, “we shall escape the absurdity of growing a whole chicken in order to eat the breast or wing by growing these parts separately under a suitable medium.” Below are several examples of future food startups:

- In an industrial area of Brooklyn, New York, Modern Meadow pioneered 3-D bioprinting and is now developing a range of cultured meat products “in collaboration with renowned chefs,” the website notes.

- In Israel, the Modern Agriculture Foundation recently launched a worldwide initiative focusing on creating lab-grown chicken meat.

- Near San Francisco, Impossible Foods recently created a plant-based burger that bleeds like real meat. The startup is developing what it terms “a new generation of meats and cheeses made entirely from plants.”

- In San Francisco, vegan bioengineers are close to marketing synthetic milk made from genetically engineered yeast. It’s called Muufri—pronounced “moo-free.”

- Also in San Francisco, Clara Foods is developing eggs without yolks—and chickens.
With Brin’s funding, Post said that the 2.0 version of the lab burger will have several major improvements:

- **More fat.** My biggest complaint was that even fried in oil and butter, by a Gordon Ramsay-trained chef, the cultured beef burger tasted about as dry as a turkey burger. The first cultured beef burger had 20,000 muscle fibers but zero fat cells. It’s fat that gives a burger its critical juiciness. And it’s fat, some believe, that drives our meat cravings. During the next year, Post’s team will focus on growing fat tissue, which is slower and more technically challenging than growing muscle.

- **More red meat.** Most burger-eaters have never heard of myoglobin. But this protein, which stores oxygen in muscle cells, is what makes red meat red. The first cultured beef burger lacked myoglobin, and if it wasn’t for some coloring additives—a mix of beet juice, saffron and caramel—the burger would have looked more like chicken: yellowish and white. By adding myoglobin, the next burger will not just look like red meat, it will also have a higher iron content.

- **No more serum derived from blood from unborn calves.** By far the biggest issue Post will address in the next year is the growth factor problem, which is more or less a dealmaker or deal-breaker for lab-grown meat. My burger was created from 20,000 strands of muscle tissue grown in fetal bovine serum (FBS), which is collected from unborn calves at slaughterhouses. This is hardly consistent with the animal welfare spirit of cultured meat. More importantly, FBS is ridiculously expensive. Some critics, such as synthetic biologist Christina Agapakis, call the high cost of cell culture the idea’s fatal flaw. But Post believes otherwise. He said he’s experimenting with 30 vegetarian and yeast-based growth serums—broths of amino acids, salts and sugars that will mimic hormones and catalyze meat cell growth. He says two of these cultures are particularly promising.

It’s an ambitious agenda, but with Brin’s backing, the increased staff and growing signs of consumer interest in meat alternatives, Post has radically revised his timetable. When I first visited his lab in 2009, he scoffed at the idea that a cultured meat product would be available in 10 years. But now Post believes a commercially viable cultured meat product is achievable within six years. He expects to finish his work in a year and a half—and then pass along his product to experts on “scaling up.”
This doesn’t mean we’ll have a cultured beef option at McDonald’s in six years. Post warns that these first cultured beef patties (appearing in 2021, if his estimate is right) won’t be feed-the-world burgers, let alone cost-competitive with conventional meat. Post envisions cultured meat will begin as a high-end product for affluent environmentalists (think Lexus Hybrid or Tesla drivers). If there’s consumer demand, production will increase and prices will fall quickly.

Another reason Post is increasingly optimistic about a commercial future for cultured meat is that his work is getting interest from a different audience. Whereas lab meat used to attract interest from science-minded journalists and connoisseurs of futuristic moonshot ideas, now Post often gives talks to the food industry’s rank and file, from flavor companies to food additives suppliers. “They’re considering it as a business idea.”

Where’s the Beef … Prices?

Over the past decade, average retail prices for ground beef have almost doubled from $2.19 to $4.16 per pound. Chief among price factors have been long-term droughts in cattle states such as Texas (which finally abated in May) and California. Drought forces ranchers to buy more hay, for example, the price of which has doubled. Beef cattle inventories are the lowest since the early 1950s and will take years to rebound fully, if ever. As prices for all cuts of beef increase and the economy remains weak, more consumers are buying ground beef. But this accounts for only 20 percent of revenue for producers and will pressure prices upward. Cultured beef might well find a receptive market when production costs become reasonable.

Price of ground beef in the United States

![Graph showing the price of ground beef from 2008 to 2015 with data from the US Bureau of Labor Statistics.](image)

*Hamburger is the new steak. Steak is the new Maserati.*

— David Ciancio, Director of Marketing for Schweid & Sons, which sells ground beef to Five Guys, Fatburger and other chains.
Imagine that you are hungry. You want a burger and a beer, and you will be sating your appetite in Colorado Springs, Colorado. Also, please consider that the date of this beer and burger quest is not now, or next year, but July 25, 2035.

You choose to go to Moby’s, a pub on Tejon Street. You sit down in a booth. You check out the menu on your 10G iPhone.

Moby’s has a “Real Beef Burger” special tonight—a quarter pound of grass-fed, free-range, antibiotic-free Hereford; chargrilled, topped with coarsely ground Balinese long pepper, slathered with white cheddar and homemade papaya ketchup, with a side of cassava fries and choice of soup or salad. Sounds fine. It’s sixty dollars—it’s by far the most expensive thing on the menu.

The waitress, detecting your price point discomfort, notes that “it’s real meat.” She suggests another burger—that’s almost as good—and is only ten dollars. “We have cow meat, bison, chicken, and pork—all fresh out of the bioreactor. We have an excellent meat-grower.” …

Colorado Springs is landlocked; it’s more than 1,000 miles from the nearest salt water, the Gulf of Mexico. The state isn’t exactly teeming with freshwater lakes. Yet several fish are listed [on the menu] as “today’s catch.” Puzzlingly, the place of origin for all of Moby’s seafood—African pompano, Atlantic salmon, Dublin Bay prawns, Arctic char, Chilean sea bass—is “Colorado Springs, Colorado.”

The server chuckles when you ask, skeptically, how it’s possible that African pompano, a saltwater fish, can be from Colorado Springs. She points across the street to a steel-and-glass tower that looks like a corporate headquarters. “That’s Deep Sea Farms—the largest aqua-farm in Colorado Springs.” …

And the couple sitting next to you—a pair of nonagenarians, judging from their conversation—eat two burgers (real and house-grown). … The elderly man drinks at least three coffee stouts, and several single-malt scotches. …

At the end of the gluttonous display, the ninety-something pulls out a pillbox from his breast pocket and produces a thin wafer. He puts it on his tongue, smiles at his companion, and looks at his watch. “I’ll be perfectly sober in ten minutes. Thank God for nano-encapsulation.”
Bioethics

Reality Optional:
Science, Law & Marijuana

Marijuana is becoming legal and is now the fastest growing industry in the U.S., at the same time as research is demonstrating marijuana’s serious dangers.

Fr. Tadeusz Pacholczyk, PhD
Director of Education at the National Catholic Bioethics Center and Adjunct Professor of Bioethics at the University of Mary

A June 2014 article in the New England Journal of Medicine (NEJM), written by researchers from the National Institute on Drug Abuse and the National Institutes of Health, points out that marijuana is not the harmless drug that many imagine. Rather, it is associated with “substantial adverse effects, some of which have been determined with a high level of confidence.” These negative outcomes include the risk of addiction, symptoms of chronic bronchitis, an elevated incidence of fatal and non-fatal motor vehicle accidents, and diminished lifetime achievement and school performance in cases of long-term use, especially beginning in adolescence.

We can add that the decision to use a drug recreationally for the purposes of dissociating ourselves from reality through induced euphoria raises significant moral concerns and, like all unethical human choices, can be expected to correlate with significant adverse ramifications.

Despite these issues, the use of marijuana is growing and now the majority of Americans believe it should be legal for adults over 21 years of age. Currently four states—Alaska, Colorado, Oregon and Washington—have legalized marijuana for recreational use, and an additional sixteen states plus the District of Columbia have decriminalized the possession of small amounts of the drug.

In Colorado, Maggie’s Farm Marijuana, for example, operates seven retail locations. Statewide, more than 300 recreational dispensaries have been licensed, earning $288 million in sales and $37 million in tax revenues in 2014. A rival company, Mindful, runs a 44,000 square-foot factory producing 500 pounds of marijuana per month, according to a report on “60 Minutes,” which aired in January 2015.

Part of the unethical character of drug abuse flows from the fact that we
are treating something good, namely our normal personal experience as if it were an evil to be avoided. Recreational drug users seek to escape or otherwise suppress their lived consciousness and, instead, pursue chemically altered states of mind or drug-induced pseudo-experiences. Anytime we act in such a way that we treat something objectively good as an evil by acting directly against it, we act in a disordered and immoral manner.

Similarly, the decision to pursue inebriation and drunkenness is a choice directed against the good of human conscious experience, which raises serious moral concerns. The responsible enjoyment of alcohol, meanwhile, presupposes that a moderate use of the “fruit of the vine” can aid us in the pursuit of certain aspects of friendship and interaction by stimulating conversation with others and by diminishing the hesitations people might have when interacting with each other. The moderate use of alcohol also appears to offer positive physiological effects on health. The notion of the “responsible enjoyment of marijuana and other mind-altering drugs,” meanwhile, is a dubious concept, given that the more powerful and varied neurological effects of these substances readily take us across a line into alternate states of mind, detachment from reality, “getting stoned” and so on.

Retail marijuana outlets display wide arrays of marijuana candy products for sale. Cannabis can be chewed, eaten, sipped or smoked. This packaging appeals not just to adults but powerfully to teens and children. The legal age for purchasing recreational marijuana is 21 in Colorado and other states, but this societal affirmation encourages use among the young.

Whenever we look at alcohol, marijuana or more powerful drugs, additional moral concerns arise due to the risk of addiction, which threatens authentic freedom and constitutes a serious form of human bondage. Alcohol, of course, poses a risk of addiction for some people, and the responsible use of alcohol might become nearly impossible for them, necessitating complete abstinence to maintain their freedom. Marijuana, despite some contentious debates about the matter, similarly has a significant addictive potential, as noted in the NEJM article:

“Approximately 9 percent of those who experiment with marijuana will become addicted…. The number goes up to about 1 in 6 among those who start using marijuana as teenagers and to 25 to 50 percent among those who smoke marijuana daily. According to the 2012 National Survey on Drug Use and Health, an estimated 2.7 million people 12 years of age and older met the DSM-IV criteria for dependence on marijuana, and 5.1 million people met the criteria for depen-
dence on any illicit drug (8.6 million met the criteria for dependence on alcohol) . . . Indeed, early and regular marijuana use predicts an increased risk of marijuana addiction, which in turn predicts an increased risk of the use of other illicit drugs.”

The NEJM article also notes that adults who smoke marijuana regularly during adolescence have decreased neural connectivity (abnormal brain development and fewer fibers) in specific brain regions. Although some experts have disputed a cause-effect relationship for this phenomenon, studies of brain development in animals strongly suggest a causal effect. The authors surmise that the effects of marijuana on brain development might help explain the association between frequent marijuana use among adolescents and significant declines in IQ, as well as poor academic performance and an increased risk of dropping out of school. These deleterious effects speak to us of the fundamentally unethical character of inhaling, injecting or otherwise ingesting harmful chemical substances into our bodies.

The Other Addiction

Sales of legal marijuana grew 74 percent to $2.7 billion in 2014, according to a report by The ArcView Group, a cannabis industry investment and research firm. Marijuana is now the fastest growing industry in the U.S. The report predicts that “full legalization of marijuana nationwide would result in $36.8 billion in retail sales, larger than the $33.1 billion U.S. organic foods market.” This translates into billions of dollars in state revenues. In Washington, for example, taxes account for 75 percent of marijuana’s retail price—before sales tax. Pot farms are becoming large operations and there is no shortage of investors eager to reap huge profits. While marijuana users court a substantial risk of addiction, many business interests and legislators are embracing economic dependence, which might be more difficult to kick.

The Final Revolution?

The “Spirit of ’76” is one of dozens of marijuana strains for sale at retail outlets in Colorado. Whatever “spirit” users experience is certainly not what inspired the American Revolution. Perhaps the infectious spirit of the “Enter a Higher State” state was best articulated in 1961 by Aldous Huxley in a talk at the University of California, San Francisco Medical Center:

There will be, in the next generation or so, a pharmacological method of making people love their servitude, and producing dictatorship without tears, so to speak, producing a kind of painless concentration camp for entire societies, so that people will in fact have their liberties taken away from them, but will rather enjoy it, because they will be distracted from any desire to rebel by propaganda or brainwashing, or brainwashing enhanced by pharmacological methods. And this seems to be the final revolution.
At a restaurant in Manhattan some years ago, I asked the waitress, apparently on her first lunch shift in that profession, about the *soupe du jour*. She went to ask the chef and three minutes later returned to say, “The *soupe du jour* is soup of the day.” Her answer wasn’t helpful but not deliberately inaccurate as what’s on many of today’s mainstream cultural, intellectual and political menus.

America is sliding down the rabbit hole and stepping through the mirror. In Lewis Carroll’s *Through the Looking Glass, and What Alice Found There*, Alice meets Humpty Dumpty who declares, “When I use a word … it means just what I choose it to mean—neither more nor less.”

Whether or not one supports the Affordable Care Act (ACA), it is anything but “affordable.” Most premiums are increasing steeply, government subsidies are growing and the number of health providers is shrinking. This has to produce less health care as health coverage increases.

In 2012, ACA was challenged for the first time before the Supreme Court. The majority of justices invalidated the administration’s argument that the law does not impose a tax, but then turned the rejected contention into the reason for the law to stand. “That carries verbal wizardry too far, deep into the forbidden land of sophists,” wrote the four dissenting justices.

Worse, ACA’s religious freedom exemption, instead of allowing the Little Sisters of the Poor to practice their faith and serve the elderly poor, enables the federal government to crush the order’s ministry because, miraculously, the state rightly determines what Catholic teachings require. Will sanity prevail when the U.S. Supreme Court rules on this in the fall?

Part of the problem is that everyone—from plumber to judge—has been conditioned by marketers for decades on the slippery nature of words. How many times can Tide detergent be “New and Improved!”? About 100 times and counting. One would think Tide could cleanse sins by now.
How many bloggers have developed severe allergies to dictionaries and other library resources? Absurd conspiracy theories have become cyber-epidemics. Some commentators claim that Pope Francis is a “Marxist,” for example, because he dares to criticize. Regardless of his economic acumen, he did not suddenly become an atheistic materialist.

In recent years, Humpty Dumpty has gone mainstream. TV “reality” shows proliferate and make “AWA All-Star Wrestling” look authentic. For the most part, today’s pop music, hip-hop culture, art, pulp fiction, movies and other commercial “creative” ventures seek not to inspire but degrade and exploit.

As we slide further from what is good, beautiful and true—from a sustainable, civilized culture—is it more shocking or predictable to learn that Planned “Parenthood” has been blithely selling body parts from aborted babies for profit for at least 15 years, according to an ABC News 20/20 investigation? The organization scavenges from late-term abortions and even live-born infants. After being exposed again in July, the organization’s defense was to claim it facilitates the donation of human “tissue to scientific research that can help lead to medical breakthroughs … with full, appropriate consent from patients and under the highest ethical and legal standards.” Sounds like the Nuremberg defense. Perhaps Planned Parenthood’s directors mistook Jonathan Swift’s satire, “A Modest Proposal,” for a serious business plan and added takeout menus.

This almost makes Bruce Jenner’s decision to become a woman seem trivial. The end result, pictured provocatively on the cover of Vanity Fair, exhibits an extreme transformation. But after multiple surgical procedures, every cell in Jenner’s body remains 100-percent male. Transexuality is biologically impossible.

“Transgender” is an entirely different matter because “gender” is a grammatical term, which originated in sexuality but, in the postmodern world, has no fixed reference. In French, “cat” is masculine (le chat)—go figure, which illustrates the point. Anyone can change gender now since gender can mean exactly what one wants it to mean. Accordingly, Facebook recognized 58 different gender-identity varieties—until last February when the ultimate arbiter of social reality stated this was not inclusive enough. Now members can fill in the category as they wish. Not only can there be as many different genders as people, each person could select more than one.

This is not a call to revert to highly restrictive gender roles. Differences in human physiology became the basis for separate functions. For eons, men were hunters, warriors and proverbial hewers of wood, while with few exceptions women nursed and reared children, tended the home and prepared meals. One of the West’s greatest accomplishments has been enabling men
and women to transcend social straitjackets. Now women become doctors, lawyers, construction workers, and men work as nurses, raise children, let a wife’s career take precedence. But unless the goal is to patent reality, limits must be recognized. Perhaps a rereading of Franz Kafka’s novella, The Metamorphosis—first published in October 1915—would be sobering.

None of the above is meant to disparage people’s emotions or their right to make choices. Many people feel their sex doesn’t match their emotions and other subjective factors. But as Daniel Patrick Moynihan—a senator, ambassador, presidential advisor and scholar at Harvard University—put it: “Everyone is entitled to his [or her] own opinion, but not his [or her] own facts.”

“Sex-change” surgery was pioneered at Johns Hopkins Medical School but then discontinued in the 1970s since it failed to treat gender dysphoria. “[T]ransgendering is a psychological rather than a biological matter,” Paul McHugh, former psychiatrist-in-chief at Johns Hopkins, wrote recently. “The treatment should strive to correct the false, problematic nature of the assumption [that one is of the opposite sex and this is a matter of choice] and to resolve the psychosocial conflicts provoking it.”

A 30-year study in Sweden showed that after surgery, transgendered patients commit suicide at 20 times the rate of non-transgender people. Meanwhile in 75 percent of cases without surgical or medical treatment, McHugh noted, transgender feelings spontaneously disappear.

Sex-change surgery is really transrational, an essential component of the new Humpty Dumpty Zeitgeist. We can choose racial identity too, according to a chapter president of the NAACP who is white but posed as African American. Identity is “new and improved,” too.

Exaggerated meaning also warps truth to the point of causing harm and self-deception. In 2012, after Bette Midler mocked Donald Trump’s idio-pathic hairstyle, he took the lowest road available and tweeted: “While Bette Midler is an extremely unattractive woman, I refuse to say that because I always insist on being politically correct.” Then, in August, after the tense exchange with moderator Megyn Kelly, during the first Republican presidential debate on Fox News Channel, about Trump’s history of calling women “fat pigs,” “dogs” and worse, the Donald retweeted followers’ references to Kelly as a “bimbo” with “porn-star makeup.” Not done with
guerrilla wordfare, Trump told NBC during a round of appearances on Sunday TV news programs that “[w]hen I was attacked viciously by those women, of course, it’s very hard for them to attack me on looks, because I’m so good looking.” Not surprisingly, Trump had announced his presidential campaign with: “I will be the greatest jobs president that God ever created.” No doubt Trump will walk across the unfrozen Potomac River on Inauguration Day to be sworn in, but with his hand on an unabridged copy of *Trump: The Art of the Deal* instead of the Bible.

Recent decisions by the Supreme Court seem equally delusional. On June 25, the majority decided that ACA’s clear, plain language—that federal subsidies can only flow through exchanges established by states—means something else. In dissent, Justice Antonin Scalia wrote, “Words no longer have meaning if an Exchange that is not established by the State is ‘established by the State.’”

Chief Justice John Roberts invoked the principle of “judicial restraint” to justify substituting what the bill’s authors actually penned for what they now wish it said. Why? Roberts wrote that ACA contains “more than a few examples of inartful drafting.” But “restraint” means leaving the “inartful” untouched by excessive judicial influence.

Similarly, the Supreme Court’s majority decision on same-sex marriage a day later was based on the Humpty Dumpty paradigm. A gay marriage is simply not a marriage, the nature of which predates every nation’s constitution by many millennia. Civil unions would work as a legal solution, but that didn’t satisfy the magical desires of activists.

Much has been made of the alleged discriminatory nature of traditional marriage. But throughout history, gays have always been allowed to marry and many have done so. And as anyone else, they had to marry someone of the opposite sex. This is no more discriminatory than excluding squares from the fraternity (or sorority) of triangles.

Marriage is not merely a traditional institution. If it were, then the definition could be changed whenever society’s elite or the majority decided to do so. Of course that means it can keep morphing to include polygamy and worse—there is no internal logic of limitation in a plastic world, as Roberts noted in his dissent. The legal definition of marriage has not been expanded but obliterated, along with any definition of family or community.

As James Jacobs, a philosophy professor at Notre Dame Seminary in New Orleans, wrote: “Marriage is based on the biological constitution of the sexes,
ordered toward the physical and—more crucially—spiritual complementarity of the spouses, and brought to full fruition in the procreative union of the couple.” Marriage begins with friendship in virtue between the sexes and moves spiritually towards fulfillment and naturally towards children. In Aristotelian terms, the family is the first school of virtue and the necessary basis of society. Destroy this and civilization falls, as it is currently doing. The Supremes exorcised any regard for the interests of children entirely from marriage and instead treat adults as permanent children with no responsibilities other than satisfying their whims.

“Liberty is in the balance,” wrote Scalia in dissent. “Not only are the Court’s opinions untethered to reason and logic, they are also alien to our constitutional system of limited and divided government. By redefining the meaning of common words, and redesigning the most basic human institutions, this Court has crossed from the realm of activism into the arena of oligarchy.” The Constitution has become Jabberwocky.

Much responsibility for creating the United States of Alice belongs to higher education. For decades, most universities have based instruction on theories of cultural and moral relativism. In practice, this created political correctness (PC), which psychologist John Ferudi coined as “velvet totalitarianism.” Ferudi grew up in Communist Hungary as the son of Jewish parents who survived WW II labor camps and witnessed the effects of hijacking language and thought for political power.

Now many professors, administrators and students function as thought police on campuses nationwide. The most recent and ridiculous incarnation is called “microaggression,” which dictates that a growing list of what normal people see as innocent phrases are “really” forms of mini-racism, -sexism and so on. Examples include: “the most qualified person should get the job;” “everyone can succeed in this society if they work hard enough;” and “there is only one race, the human race.” The Onion, a satirical magazine, published an article in April spoofing PC uni-think: “College Encourages Lively Exchange of Idea: Students, Faculty Invited to Freely Express Single Viewpoint.”

Once the meaning of words becomes arbitrary and subject to elitist control, any manipulation in society becomes possible. In Seattle, “sex education” means that middle-school girls can get IUDs (intrauterine devices) without parental consent but, Dei gratia, soda is verboten.

“It's a great huge game of chess that's being played—all over the world—if this is the world at all, you know. Oh, what fun it is!”
No wonder a recent sociological study at a major university recommends that society should start accepting people who “identify as real vampires.” They are everywhere, it seems.

“I was asked to say a few kind words about education,” said Fulton J. Sheen (then an archbishop and now Venerable) at a dinner in 1970 to honor the founding of Thomas Aquinas College near Los Angeles. “I recall going into the Grand Central Station one morning for breakfast and I said to the waitress, ‘I want a cup of coffee, a boiled egg, some toast and a few kind words.’ When she brought me coffee, the toast, the egg—and the check, I said, ‘Don’t you have a few kind words?’ She replied, ‘Don’t eat the egg.’”

Fortunately, the word “egg” meant a real egg then. Today, one might heed the waitress’s warning, bite into the toast and keel over in pain with food poisoning. The waitress would come over and say without apology: “This morning, the chef told us that eggs are now made of wheat and cooked in a toaster. It’s only fair.”

“The next powerful force is, of course, sentimentality,” wrote Fyodor Dostoyevsky prophetically in The Possessed in 1871. How often now, reasoned positions are countered not by true debate but claims of being “offended,” which terminate discussion and democracy. And the new constitutional right for a minority “to define and express their identity” in same-sex marriage is already becoming a sledgehammer to destroy the rights of the majority to religious liberty, employment, private businesses and faith-based educational and other institutions.

Lewis Carroll’s Through the Looking-Glass was also published in 1871 and ends with a question: “Life, what is it but a dream?” Perhaps, but hopefully not delirium.

How to reverse this downward spiral was demonstrated in June after the slaughter of nine worshipers at an African Methodist Episcopal Church in Charleston, North Carolina. Relatives of the slain confronted the racist perpetrator and heeded the exact meaning of Christ’s words about forgiveness. He and his Divine Father said a few other things, too, that inspired the transformation of the ancient pagan world into Western Civilization.

In the beginning was the Word, and who but God will have the last word? And who but God can put America back together again?
How not to fall down Alice’s rabbit hole:

Civilization: The West and the Rest

By Niall Ferguson, MA, D.Phil., Laurence A. Tisch Professor of History at Harvard University. He is also a Senior Fellow at the Hoover Institution, Stanford University, and a Senior Research Fellow at Jesus College, Oxford University. Dr. Ferguson has published 14 books and is currently working on a biography of Henry Kissinger.

An Excerpt (pages 286-87):

After much hesitation, at least some of China’s communist leaders now appear to recognize Christianity as one of the West’s greatest sources of strength. According to one scholar from the Chinese Academy of the Social Sciences:

We were asked to look into what accounted for the … preeminence of the West all over the world. … At first, we thought it was because you had more powerful guns than we had. Then we thought it was because you had the best political system. Next we focused on your economic system. But in the past twenty years, we have realized that the heart of your culture is your religion: Christianity. That is why the West has been so powerful. The Christian moral foundation of social and cultural life was what made possible the emergence of capitalism and then the successful transition to democratic politics. We don’t have any doubt about this.

Another academic, Zhuo Xinping, has identified the “Christian understanding of transcendence” as having played a “very decisive role in people’s acceptance of pluralism in society and politics in the contemporary West.”

Only by accepting this understanding of transcendence as our criterion can we understand the real meaning of such concepts as freedom, human rights, tolerance, equality, justice, democracy, the rule of law, universality, and environmental protection.

Yuan Zhiming, a Chinese filmmaker, agrees: “The most important thing, the core of Western civilization … is Christianity.” According to Professor Zhao Xiao, himself a convert, Christianity offers China a new “common moral foundation” capable of reducing corruption, narrowing the gap between rich and poor, promoting philanthropy and even preventing pollution. “Economic viability requires a serious moral ethos,” in the words of another scholar, “more than just hedonistic consumerism and dishonest strategy.” It is even said that, shortly before Jiang Zemin stepped down as China’s president and Community Party leader, he told a gathering of high-ranking Party officials that, if he could issue one decree that he knew would be obeyed everywhere, it would be to “make Christianity the official religion of China.”
Many people use the word “medieval” as an epithet meaning dark, backwards, violent. The term simply means “middle ages,” as if at the very best not much happened in the thousand years between the glories of classical pagan Greco-Roman culture and its attempted resuscitation in the Renaissance. But ever more people are discovering that the medieval world offers answers to the questions postmodernity poses anew: questions of nature, community, meaning, peace and ultimately of God.

The medieval centuries presented glories that were stifled by modernity in its will to power to make man the pinnacle of all things by excluding God and subjugating nature. These brilliant glories, however, are experiencing a present-day, postmodern renaissance in thought, religion, culture, art and architecture, as incarnated in such extraordinary figures as St. Hildegard of Bingen (1098-1179). In her visions, the cosmos—although fallen and in need of the redemption that Christ, through the Church, established—is a unity communicating God’s beauty, goodness and truth with man at the center as a microcosm reflecting the cosmos. “Humanity, take a good look at yourself,” wrote St. Hildegard. “Inside, you have heaven and earth, and all of creation. You are a world—everything is hidden in you.”

A Medieval and Modern Saint

St. Hildegard’s medieval era was much like our modern age, with its widespread cultural and ecclesial malaise, with the State encroaching increasingly
into Church affairs and the clergy often indolent and ineffective, and with the laity poorly catechized and gnosticism advancing. Into this age stepped St. Hildegard armed with divine visions, a keen creative intellect, a life of monastic prayer, and a love of reason, nature and the Church. Indeed, the similarity of the ages led Pope Benedict XVI not only to name St. Hildegard an official saint and also to declare this Benedictine sister a Doctor of the Church. He called her “a true master of theology and a great scholar of the natural sciences and of music,” hoping her medieval witness would illuminate our modern day.

St. Hildegard was born in 1098. As a tithe child, she was dedicated to the monastic life from birth by her noble family. They sent her at eight years of age to live and study with Jutta, a comely young anchoress, also from a wealthy family, who lived as a monastic in a tiny room attached to a church in Disibodenberg, Germany. Jutta provided young Hildegard and other girls with a rudimentary education and instruction in the spiritual life. Hildegard lived as a member of Jutta’s monastic community in the tiny anchorage for thirty years until Jutta’s death, when Hildegard was chosen to lead the community. Later, as membership grew, she relocated to found a convent at Bingen, Germany, on the west bank of the Rhine.

**Compendium of Scripture and Divine Visions**

In 1141, St. Hildegard had a God-given vision commanding her to write down the interpretations of religious texts He would give her. She did not doubt but did hesitate. Eventually, she wrote to St. Bernard who conferred with Pope Eugenius (1145-53), who in turn instructed St. Hildegard to obey the visions and start writing.

The inscribed visions are contained in her major work, *Scivias* (Know the Ways of the Lord), in which she writes as a graced interpreter of sacred Scripture, integrating her divine visions with her thorough biblical knowledge. She prayed Scripture as a Benedictine, interpreted it for her sisters as well as for monks and others, and preached it in major European cathedrals, such as in Mainz, Cologne and Trier. St. Hildegard pays careful attention to the details of the text with mind and spirit fully and prayerfully engaged, as she interprets Scripture in accord with the Church’s rule of faith. St. Hildegard’s interpretations flow from an assumed cosmic harmony among God, humans, nature, Church and liturgy.

**Gnostic Heresy Then and Now**

Although some writers today present St. Hildegard as a rebel, she always thought, prayed and acted in conscious concord with the Church. Pope Benedict recommended her to contemporary Catholics, noting that “the
person endowed with supernatural gifts never boasts of them, never flaunts them and, above all, shows complete obedience to ecclesial authority. Every gift bestowed by the Holy Spirit is in fact intended for the edification of the Church, and the Church, through her pastors, recognizes its authenticity.”

St. Hildegard’s obedience to the Church flowed from faith, not a submissive personality. She showed herself to be an implacable enemy of the gnostic Cathars, by preaching, teaching, and writing against them. Their nature-denying, creation-hating, Churchless descendants remain with us today.

Gnosticism is a perennial heresy rooted in a radical interpretation of Plato that sees matter—and thus bodies—as inherently evil prisons of the spirit. Since the body is bad, gnostics often engaged in all manner of licentiousness and practiced contraception and abortion as a matter of principle. Further, the belief that creation is evil means sacraments are impossible, rendering the Church irrelevant.

Many scholars, such as Harold Bloom, have seen contemporary American religion and culture as gnostic, as shown for example by our confusion about the body in the ever-increasing acceptance of physical modifications, such as tattoos, piercings and plastic surgery. Other examples include the dramatic increase in eating disorders, from bulimia to obesity, and the popularity of the “heroin chic” look in runway models. This devaluing of the body fuels the ever-broadening regime of contraception and abortion, backed by state power.

**Fierce Fidelity**

St. Hildegard’s day was thus not unlike ours and so her visions might help us bear witness in the present. For St. Hildegard’s incarnational, sacramental vision takes seriously the concept of a
visible, authoritative Church speaking truth about the goodness and harmony of God, nature and man as its microcosm. What if, however, the Church on earth appears feckless and fallible, divided and impotent, unable to speak the beauty and goodness of truth? To answer, Pope Benedict pointed us to Hildegard’s example and to her call for renewal as a way to battle gnosticism: “In a special way Hildegard countered the movement of German catari (Cathars). They … advocated a radical reform of the Church, especially to combat the abuses of the clergy. She harshly reprimanded them for seeking to subvert the very nature of the Church, reminding them that a true renewal of the ecclesial community is obtained with a sincere spirit of repentance and a demanding process of conversion, rather than with a change of structures. This is a message we should never forget.”

In the same spirit of fierce, fervent fidelity, St. Hildegard opposed Holy Roman Emperor Frederick Barbarossa’s attempts to install antipope after antipope—false popes who would do his imperial bidding—on the Throne of Peter. With holy boldness she wrote, “You will be sorry for this wicked conduct of the godless who despise me! Listen, O King, if you wish to live! Otherwise my sword will pierce you!” Confronting him not only with her pen but also in person at Ingelheim on the Rhine, she risked her position and convent to protect the liberty of Holy Mother Church.

Creative Works

Controversies occupied comparatively little of St. Hildegard’s work, however. Her creative work includes beautiful chants and antiphons composed in honor of various saints for their feast days, as well as dramas, including her morality play Ordo Virtutum (Order of the Virtues), which was performed by her sisters. For St. Hildegard, the arts—and especially music—were crucial, since they reflect Edenic paradise in a fallen world cast far from Eden. She considered vocal chant as the original and highest possible form of Edenic praise.

Reason, Nature and Religion

For Catholics and all Christians who take reason and nature seriously, religion is not a matter of raw submission to divine revelation enforced by ecclesiastical authority. God also speaks to all people through nature, which reason can read even in humanity’s fallen state. St. Hildegard investigated nature on its own terms in a spirit of profound curiosity. Unlike her visionary Scivias, her scientific treatises (the only such works extant from the 12th-century West) are rooted in observation, not divine inspiration, and geared toward healing in their medicinal application.

For St. Hildegard, although nature is not a matter of revelation, it is insep-
arable from the divine. As Pope Benedict observed, “Hildegard stresses the deep relationship that exists between man and God and reminds us that the whole creation, of which man is the summit, receives life from the Trinity . . . For her, the entire creation is a symphony of the Holy Spirit who is in himself joy and jubilation.” In this, she anticipates Pope Benedict’s and Pope Francis’ repeated calls for an “ecology of man” that seeks to understand and promote the location of the human person in his or her rightful place within the ecology of nature, from which modern man is so severely estranged.

**Calling All Proclaimers**

Peter Berger, a renowned sociologist of religion, once remarked, “Ages of faith are not marked by ‘dialogue’ but by proclamation.” If only our age was marked more by holy women and men like St. Hildegard, fearless in faithful proclamation for the sake of God and His creatures, finding man’s place in deep harmony with the cosmos. In the meantime, we can learn from a humble and powerful Benedictine, St. Hildegard of Bingen, the Sibyl of the Rhine.

“Angelic Visions,” from *Scivias.*
The flag of United States of America flies everywhere from the top of the United States Capitol in Washington, D.C., to the World Trade Center in New York City, to the Golden Gate Bridge in San Francisco. The flag flies just as proudly from everyday spots, including a mailbox in rural Morton County, North Dakota (top left), a farmhouse porch in Door County, Wisconsin (bottom left), and an antique store window in Cut Bank, Montana (left).

All photographs Jerry Anderson/University of Mary

I Am the Flag of the United States of America

I am the flag of the United States of America.
My name is “Old Glory.”
I fly atop the world’s tallest buildings.
I stand watch in America’s halls of justice.
I fly majestically over institutions of learning.
I stand guard with power in the world.
Look up and see me. …
I have slipped the bonds of Earth
and stood watch over the uncharted frontiers of space
from my vantage point on the moon.
I have borne silent witness
to all of America’s finest hours.
But my finest hours are yet to come.

By USMC GY Sgt. Howard Schnauber (1922-2004)

Sgt. Schnauber was a veteran of World War II
and the Korean War. He was awarded four Purple Hearts
and then served as a state park manager in Colorado.
Watford City sits near the center of the Bakken shale formation where it is deepest and contains the most oil.

Illustration based on maps by Mason Inman and data from the ND Department of Mineral Resources.
Oil: The Once & Future Fuel

Shale oil has the potential to reshape the global economy, and increase U.S. energy security, independence and affordability in the long term

Mark Mills
Author and Senior Fellow, Manhattan Institute

If oil didn’t exist, we’d invent it. It is a uniquely dense fuel with Goldilocks attributes: just the right combination of transportability, storability, safety and cost. That’s why civilization consumes nearly $2 trillion worth of oil a year. It’s the world’s largest traded commodity, with food in second place trading at 20 percent less.

The shale oil boom, which emerged in the past decade, is the beginning of the next and third great foundational shift in the technologies that can supply the world with liquid hydrocarbons. The first shift began about a century ago with “conventional” drilling on land at places like Spindletop, Texas and Bakersfield, California, then spread across America and throughout the world. The second era began just over a half-century ago with the first offshore rigs in deep waters off Louisiana, and this technology developed around the world too. The third great cycle began back on land in the shale fields around Williston, North Dakota, Midland, Texas, and a half-dozen other states.

The shale revolution is not—despite erroneous claims by peak-oil proponents—a short-term bubble. Instead, this is a long-term phenomenon emerging from the combination of two facts: a) the physical resource base of shale hydrocarbons is enormous and barely tapped, and b) continually emerging technologies promise to increase the efficacy of oil and gas extraction from shale fields. Further, even as the shale revolution eventually spreads around the globe—just as the previous tech-driven oil revolutions did—America will continue to be the leader for quite some time, not only because of first-mover advantages and our vast domestic hydrocarbon infrastructure, but also because of uniquely favorable land and mineral rights in the U.S.

As for long-hyped alternatives to oil, underlying physics and economics profoundly advantage oil. The wizards in Silicon Valley have no “Moore’s Law” for energy technologies that can emulate the torrid rate of change
However, there is a deeply symbiotic relationship between the silicon and shale revolutions. Information technologies promise to keep advancing the economics of producing shale hydrocarbons. In addition, the rise of the next information revolution is the primary reason the demand for oil will increase, perhaps much more than current forecasts anticipate.

Energy Demand: “Fly Me to the Moon”

Energy demand comes from wealth. Rising wealth allows more people to live with greater comfort, safety and convenience, and have more satisfying lives. This requires energy in ever-increasing amounts. And as incomes rise, more people around the world want, in particular, the convenience and luxury that comes with driving and flying.

Thus, the first step in understanding the future of energy demand comes from understanding that the future demand for energy in general, and oil in particular, can be seen in the deep trends—trends that are tidal forces, not episodic short-term economic ripples—illuminated by several graphs.

First, we see that not only does energy use per capita grow with wealth, but it increases suddenly and dramatically once a critical threshold is reached. It bears noting that 80 percent of the world’s seven billion people are still to the left of the ‘knee’ in the curve seen in Graph 1 on the left.

Thus, the next step in understanding the future of energy demand comes from understanding what has driven and what will drive wealth growth. In 1987, Harvard’s Robert Solow was awarded the Nobel Prize in Economic Sciences for work that definitively proved what many people and businesses experienced in information technologies.
have long believed: technological progress is the dominant force that propels economic growth. In *The Lever of Riches*, Joel Mokyr, a Northwestern University economic historian, wrote: “Technological progress has been one of the most potent forces in history in that it has provided society with what economists call a ‘free lunch,’ that is, an increase in output that is not commensurate with the increase in effort and costs necessary to bring it about.”

The Global Innovation Index measures and tracks a basket of core indicators of innovation across nations (Graph 2). More innovation leads to more wealth. A 25-percent increase in the Innovation Index is associated with a 400-percent rise in per-capita wealth.

When billions of people become wealthier, they will want more of what the one billion in developed economies already have: more comfort, convenience, safety, luxury and beauty—and, of particular relevance to oil use, they will especially want more access to air and ground travel. Technology and innovation are thus the key factors that will determine how much wealth there is and how soon, and consequently how much driving and flying will take place.

Conventional global forecasts—which see continued economic growth but make no case to return to Reagan-era growth rates—expect that in two decades, there will be 3,000 billion more passenger air miles flown annually and at least 3,000 billion more car-miles driven per year. Each increase represents an energy demand of about 10 million barrels per day of oil (bpd). It won’t be easy to add 20 million more bpd to the world’s current 90-million bpd production rate, two-thirds of which is used for transportation (Graph 3).

These projections of additional energy demand, especially regarding oil, often inspire one or both of these pushbacks:

- Global growth is slowing since we are entering a new era of tech-driven reduced growth.
- Alternatives to oil are inevitable.

But in today’s information tech communities, we find evidence that makes lies of both notions: robust economic growth is not over and companies such as Exxon will not be displaced by technologies like Tesla.

**Prospects for Growth: Mobile Disrupts the World**

When President Ronald Reagan was first elected in 1980, the U.S. was deep in the proverbial doldrums. The economy was dragging, unemployment was in double-digit percentages with college graduates egregiously underemployed, and inflation was destroying both savings and the housing market. The big innovations that changed the world post-WWII—the car, aviation, central computers, electrification—were all maturing and competition was ascending from Asia (Japan in those days). Also, the geopolitical landscape
It's not so much that a smartphone's computing power is so amazing (which it is: A single smartphone outperforms the computing power of a room-sized 1980 mainframe), but that the radio inside the 'phone' enables ubiquitous, real-time access to the remote super-computing power of the web-scale cloud.

was a mess: The Cold War was in full swing, the Soviets were waging a war in Afghanistan and Islamic extremists had taken over oil-rich Iran. In short, the U.S. and world were beset with problems.

No one in 1980—not in the media, punditocracy nor among government forecasters—imagined that information technologies would ignite nearly two decades of torrid growth, which would create thousands of new companies and millions of jobs. In fact, most economists imagined quite the opposite, including the Nobel Laureate Paul Samuelson at the Massachusetts Institute of Technology, who published a scholarly article at the time forecasting a tepid future. No one imagined that the software business, for example, would evolve from a tiny niche to become a $300-billion global industry.

What happened? In the simplest terms, by 1985 far more computing power was moving onto desktops than was cosseted away in centralized mainframes. That precipitated the distribution of economic power to millions of people and existing businesses, and the emergence of entirely new classes of services and companies. It was also relevant that collaterally the world saw an unprecedented increase in countries embracing free—or at least freer—market principles.

Remarkably in 2000, the world crossed a threshold with 300-million desktop personal computers (PCs) wired to and episodically using the Internet. There was considerable rational, and some irrational, exuberance about the economic power unleashed by that information revolution. Then a year ago, an even more remarkable threshold was passed: more mobile computers (smartphones) were connected to the Internet than desktop PCs. This growth continues with 3,000 million mobile computers now in pockets and purses, each far more powerful than a 1984 PC, and each not episodically but continually connected to and using the Internet. The world is on track to building-out the wireless Internet at a scale that dwarfs the previous build-out of the wired Internet that took place at the end of the 20th century and propelled so much prosperity.

All this happened because, even as computing and communications capability increased, the cost of the underlying technologies collapsed. When something so valuable becomes affordable, revolutions happen.

It is difficult to forecast specifically how the economic power of the wireless Internet—“mobile”—will be used, just as in 1980 it was impossible to anticipate companies like Google, Amazon and Uber. However, some concrete data about the underlying economic power, and thus the future economic impact of mobile technologies, was revealed in a recent global survey by the Boston Consulting Group (BCG). The survey and analysis found that an average consumer puts an implied value of $6,000 on their smartphone. That number indicates the yet-to-be-realized economic potential from billions of connected people.
The same BCG analysis surveyed 3,500 businesses (in the U.S., Germany, South Korea, Brazil, China and India) and found that small and mid-sized companies, which were “mobile leaders” (defined by the intensity of mobile usage), saw 200-percent greater revenue growth and hired people at a rate 800-percent faster than “mobile laggards.” Such remarkable numbers portend an immense emerging economic disruption as the mobile revolution rolls out.

A key feature of today’s mobile revolution is that the wireless part enables consumers and businesses to connect seamlessly to the supercomputing revolution that has followed a similar transformation in cost, size and power. It’s not so much that a smartphone’s computing power is so amazing (which it is: A single smartphone outperforms the computing power of a room-sized 1980 IBM mainframe), but that the radio inside the ‘phone’ enables ubiquitous, real-time access to the remote super-computing power of the web-scale cloud, and does so through a breathtakingly easy user interface called an “app.”

Apps are an entirely new class of product that makes the smartphone phenomenologically different from—and far more powerful than—a stand-alone mainframe or an Internet-wired desktop PC. The $6,000 value, which BCG identified, is effectively a measure of the value of apps to consumers. We also see the value of apps in the rate of adoption: Apps went from zero to 60 billion downloads in the first four years. And according to the mobile analytics firm Flurry, overall app use still rose nearly 80 percent last year alone.

Today, over a half-million specialized mobile apps are available across the entire pantheon of social, business and medical activities. The “app economy” has become a $100-billion industry. While messaging and social media dominate app growth, running a close second (with 150-percent growth last year) are “utility and productivity” apps, for everything in the interstices of economic activity and increasingly for health and medical purposes.

We are now at the end of the beginning of the mobile revolution, which is the next and biggest cycle in the expansion of the information economy. Cisco Systems, Inc., forecasts wireless traffic—the measure of how much the mobile Internet is put to use—will grow tenfold in the next five years alone. With this, the world will get wealthier, perhaps at a rate faster than during the previous tech cycle.

However, some analysts believe the ascent of ubiquitous mobile connectivity will lead to greater use of Facetime, Skype
or other teleconferencing, which will decrease travel. But we have seen this “movie” before. When Internet 1.0 took off, pundits and forecasters believed that world travel would slow and even reverse because of the advantages and convenience of the Internet. A few visionaries thought otherwise, including Vint Cerf, credited as one of the handful of key players who engineered the Internet. Cerf predicted that the Internet would increase world travel because it would make it easier for remote and disparate businesses to work together—which he believed would lead to more travel and greater transport of goods. He was right.

We know two things for sure about the future of transportation: people like it and commerce requires it. In addition to increasing air travel, there will also be more cars on the world’s roads in two decades. Forecasters see a billion more cars, in addition to the 800 million automobiles in use today, and hundreds of millions more trucks.

Even in the U.S. there will be more cars. In fact, the trope that millennials (18- to 34-year-olds) eschew cars and choose instead to ride bicycles and walk appears wrong. The downturn in auto ownership breathlessly flagged by “new economy” mavens turns out to have been the consequence of joblessness and lack of money, and thus the inability to buy a car. As the Great Recession slowly recedes, data show that millennials are buying cars; surveys show they want them roughly as much as their boomer parents did.

Thus, even if the march of technology keeps the energy use of light-duty vehicles flat, as Exxon’s forecast expects, the overall demand for energy used to carry people and things on roads, rails, water and airways will rise substantially in the coming decades.

If there is no doubt that wealth will grow and transportation use will increase, what chance then is there that a major proportion of those trillions of ground and air miles will not be propelled by hydrocarbon molecules but instead by biofuels or electrons?

**Demand: The Teslification of Transportation?**

Most anti-oil advocates have shifted their enthusiasm from biofuels to batteries and big data. The idea that Silicon Valley will deliver some kind of demand disruption is sufficiently seductive to persuade Saudi Arabia’s oil minister to ask: “Is there a black swan that we don’t know about, which will come by 2050, and we will have no demand [for oil]?”

It is unquestionably true that emerging networks and data analytics will wring far more efficiency out of everything society uses, including whatever is powered by oil. The “sharing economy” allows capital assets, whether homes and hotels or cars and aircraft, to be more fully used, thus rendered less expensive per use. But it is a silly idea to think that Uber’s ride-sharing, for
example, disrupts the oil market. Algorithms mated with ubiquitous smartphones will make many things cheaper, including aircraft and automobiles, but these still use fuel. Capital and asset sharing doesn’t change the laws of physics in terms of energy consumed per mile. It’s as easy to share a ride in an SUV (now made more affordable by “sharing”) as an all-electric vehicle (EV).

But the Tesla is the iconic and ostensible evidence—for some, the proof—of the inevitability of the disruption of oil’s stranglehold on the highways. Seductively designed and impressively engineered, the nearly $100,000 Tesla is in the must-own class for the One Percent. But could it be that Tesla’s CEO, Elon Musk, has built the corporate equivalent of a modern Ferrari—an iconic, successful and valuable niche company—and not the equivalent of what Henry Ford built a century ago?

Tesla and GM, along with over a dozen other automakers, plan to soon release next-generation, lower-cost, all-electric cars. Nonetheless, even the most enthusiastic forecasts predict between one million and 20 million EVs at most on the world’s roads by 2020. Although impressive, this will remain a tiny fraction of more than 1,000 million cars on the road by then (Graph 4).

However, for Tesla’s aspirational acolytes—environmentalist groups such as the Sierra Club and Tesla stockholders—the future is “obviously” one where most cars will depend on batteries of electricity rather than barrels of oil. Is that likely? We can find the answer in the physics of energy storage.

The inherent characteristics of the physical chemistry of the molecules used to store energy determine what engineers can accomplish at a price that most people will pay for transportation. Pound for pound, the chemicals comprising gasoline store at least 50 times more energy than the best chemicals in batteries. Pounds matter in all transportation and they are utterly determinative for aviation. Gasoline is not just more dense but also remarkably safe, easy to store and move. Ask a chemist: If you started with a blank slate to design a near ideal way to store energy for a mobile platform, you’d invent the oil molecule.

The disparities in physics are revealed in practice. The weight of the battery pack plus electric motor in a Tesla is over 1,500 pounds, while the combined
weight of a loaded fuel tank and internal combustion engine in a Ford Taurus is about 500 pounds. Also, using batteries is expensive because they are consumable; that is, they degrade. While driving 200 miles in an EV uses just 40 kilowatt-hours (kWh), about $5 of electricity, each recharge actually costs about $90 when you include the amortized cost of the battery over its useful lifespan. In comparison, driving 200 miles in a Volkswagen GTI uses $15 of gasoline and $0.25 of steel, if you amortize the fuel tank’s cost over the vehicle’s life. One can disguise such vast economic differences with subsidies, but in the end they become obvious.

Tesla promises a 30-percent battery cost reduction with the company’s giga-scale battery factory now under construction. Batteries have a very long way to go to overcome the 5,000-percent disadvantage in energy density compared to oil (Graph 5). No venture capitalist, government subsidy or computer magic can change that.

Still, battery advocates respond that the technology will improve. Yes, but where technology really gets better and faster is in the technologies that use gasoline.

A recent National Academy of Sciences study concluded there is no clear road map to a battery that is 200 percent better at any price. But 200-percent improvements in the internal combustion engine have recently been made. Last year Volvo, to name one example, unveiled as a prototype a tiny 4-cylinder racecar-class 450 hp engine, using, in effect, yesterday’s technology. Ask any engineer in the unheralded combustion research labs on automotive and university campuses and you will learn that the inherent design of an internal combustion engine, despite its age (although it is a younger technology than the battery) is far from tapped out. The biggest change coming for light vehicle propulsion is the continual penetration of hybrid architecture: using silicon, software and small batteries to radically improve the efficiency of using gasoline.

Exxon’s view of the future (Graph 4 on the previous page) is almost certainly correct in both direction and magnitude. There will be lots more
cars and nearly all them will be fueled by hydrocarbons, mainly oil with natural gas making progress as well.

As for biofuels—the only option for fueling aircraft and automobiles—it bears noting that most serious environmentalists, including European nations that were eager advocates, now actively oppose substantial expansion of land use to grow plants to fuel planes and cars. In America, there is a single telegraphic fact about land requirements for growing carbohydrates instead of drilling for hydrocarbons. At least 40 percent of America’s grain lands are now used to produce ethanol to blend with gasoline. The last time the nation used that much land for fueling transportation was in 1800, growing grain to feed horses. Ethanol is very important but supplies less than 5 percent of America’s transportation energy.

Aside from issues of food-versus-fuel, of land and water use, and of costs, the numbers simply won't scale. Hundreds of billions of dollars have been invested in non-food biofuels (so-called cellulosic alcohol) too. But so far there are only aspirational visions for ways that grass, wood and algae could come close to competing with grain, corn and sugar for alcohol production. The problem is that nature has evolved robust and diverse plants that convert solar energy into carbohydrates. But this has come at the price of very low efficiency. Photosynthesis operates at well below one-percent conversion efficiency. One day, genetic engineers might radically improve nature’s limits. But even then, plants would remain a marginal, even if bigger, niche at the global scale of fuel needs.

The technology race, underway to power the world’s engines is in effect between the chemistries of biology, batteries and burning hydrocarbons. All of them will improve, but it is oil, despite its challenges (not the least of which is geopolitical), where we find enormous inherent advantages.

All these trends and realities—technological progress, economic growth and human aspirations for comfort, convenience and travel—are anchored in powerful forces that are essentially immune to the aspirational goals of climate apocalyptics, who seek radical reductions in global energy and hydrocarbon use.

The current irony is that the latest International Energy Agency forecasts have slightly reduced the expected demand growth for oil from emerging markets, while increasing from negative to positive the expected growth in American oil demand. This is quite a reversal from the trope made popular during the Great Recession that the U.S. is entering a new post-oil era. Maybe demand was slipping because it was just a recession after all.

So if the world’s already staggering appetite for oil will in fact grow for the foreseeable future, does the world have enough oil? And perhaps more importantly, does America have enough oil?

Technology will definitely solve all our problems, but in the process it will create brand new ones. But that’s OK because the most you can expect from life is to get to solve better and better problems.

Scott Adams, MBA, Cartoonist (Dilbert)
Enough Oil? The Ever-Moving Malthusian Goalposts

The 1973 Arab oil embargo, which caused oil prices to jump 400 percent practically overnight, stunned the U.S. citizenry and policymakers. Photographs of the long lines at gasoline stations are now an iconic part of modern history texts. In 1979, a second oil-price shock struck, which—along with ensuing decades of declining output and rising dependence on oil from often hostile, anti-Western regimes—reinforced the paradigm of domestic scarcity. All this happened concurrently with an array of best-selling neo-Malthusian tomes, such as *The Population Bomb* by Paul Ehrlich in 1968 (which predicted both food and energy starvation by 2000) and the “Limits To Growth” report in 1972 by the Club of Rome.

Today, widespread illusions of meager American oil resources continue, not only with the persistent (though serially disproved) paradigm of limits, but also from a misunderstanding of, and focus on, reported oil “reserves”—a measure that says nearly nothing useful about long-run supply.

Reserves are determined by a combination of factors: corporate decisions to spend money to map a specific project, legally required financial accounting metrics and access to technology capable of extracting a specific resource at market prices. As well, these factors function within the short time frames associated with narrow business decisions. Reserves, in other words, neither measure geophysical reality nor predict technological progress. This is true for conventional and unconventional oil, and for minerals too.

In 1970, for example, total U.S. “reserves” were officially reported at about 30 billion barrels of oil. But from 1970 to the present, the U.S. pumped nearly 200 billion barrels from those fields. The resource, quite obviously, was larger than the narrowly defined reserve number. Once again today, U.S. reserves are estimated at about 35 billion barrels (Graph 6).

Future production will come from new reserves that expand as time, technology and financial needs progress, thereby allowing developers to access vast underlying geophysical resources.

Thus, annual domestic consumption of about seven billion barrels of oil—and the world’s 30 billion barrels per year—should be juxtaposed against the nearly 1,000 billion barrels of U.S. resources identified by the Energy Information Administration (EIA).

Even at that, the EIA doesn’t count all possible resources. For example, the Green River Formation—a shale region largely below Colorado, Wyoming and Utah—contains an estimated 1,500 to 3,000 billion barrels of oil. The Rand Corporation estimates that 30 to 60 percent of that oil is extractable with technology now available.
The geology of North America is profoundly hydrocarbon-rich, with total liquid and gas hydrocarbon resources exceeding 5,000 billion barrels of oil equivalent (BBOE). This doubles the 2,500 BBOE found in the entire Middle East. Technology unlocks expensive and hard-to-reach resources and converts them into affordable “reserves.” There is no more dramatic example of this than what has happened in the shale fields of America, which were mapped out by the U.S. Geological Survey a century ago.

What Now For American Shale Oil?
The Dog That Caught the Bus

In a few short years, thousands of small- and mid-sized companies, using modern smart-drilling technology on private and state lands, and using private capital, have turned the U.S. into the world’s fastest growing and largest producer of hydrocarbon liquids. Over the last six years, oil production expanded nearly 50 percent. The data shows that if it were not for the $300 billion or so added annually to the nation’s GDP from the oil and gas sector, along with more than two million new jobs across the ecosystem, economic growth would have been far slower than it was, and perhaps even in decline, over most of President Barack Obama’s tenure thus far. By the end of 2014, American oil production surpassed levels not seen in a half-century— and it is still rising.

After decades of handwringing about limits, shortages and dependencies, no one expected that the world would become oversupplied with oil—most especially because of U.S. production. Now it’s like the dog that caught the bus. What does one do with so much production that no pundit or president predicted?

All this new output (temporarily) over-supplying world markets caused oil prices to collapse: precisely what one would expect. And now, collaterally unsurprising, many shale businesses and entrepreneurs are pulling back.

In the short term across the entire oil supply chain, plenty of cost-cutting and paring back of near-term plans, as well as job layoffs, are taking place. We
will likely soon see the inverse of the heretofore beneficial effect of the shale industry on the nation's unemployment statistics.

There is rampant speculation now about how low prices can go before producers stop operations. There is equally rampant speculation about when, not if, a price rebound will happen. It is inevitable that the misalignment of supply-and-demand will start to work in the other direction, and in due course put upward pressure on prices. No one knows whether that will take months or even years. (Some traders will make big bets on this timing, and no doubt we will hear about good or bad trades in the months to come.)

How Low Can We Go?

Speculation aside, American shale producers should know two things about the future. First, the price that producers need to survive in non-democracies is very different from the price needed in democracies. The former is a social-political cost in places that sometimes earn the label of kleptocracies, while the latter is anchored in simple engineering economics. Second, technology will continue to do what it has done since the dawn of the oil age: make it cheaper to find and produce oil.

Non-democracies that produce oil are either nearly or completely dependent on exports to generate fat margins that prop up social programs and, in many cases, to ensure political stability. The International Monetary Fund and others try to estimate what prices these countries need. Regardless of the
accuracy of the specific numbers, the range reveals much. Estimated price thresholds to sustain balanced budgets include: $184 in Libya, $131 in Iran, $123 in Nigeria, $118 in Venezuela, $104 in Saudi Arabia, $101 in Iraq, $78 in Kuwait and $77 in Qatar.

Meanwhile in democracies, businesses need prices that generate more revenue than the technology and operations cost. While there is a vigorous debate underway as to what those numbers are in the various shale fields, and in specific parts of each sprawling and varied field, the range is typically from $30 to $80 per barrel. There is little doubt that U.S. producers can tolerate a lower price environment than can much of the world.

Critically, as the oil technologies pioneered in the U.S. keep getting better, the cost of finding and acquiring oil from shale will keep dropping. While one cannot predict the timing of the next cycle in a cyclical commodity’s price, one can predict that technology will keep improving. In less than a decade, the industry has seen remarkable productivity gains not only in output per rig but in all measures, including wells per rig, distances drilled per rig and speed of deployment—all at little increase in costs.

According to EIA data, the average quantity of oil or natural gas produced per rig has increased by more than 300 percent over the past four years alone (Graph 8). This productivity gain matches (in equivalent terms of capital cost per unit of energy output) the improvements seen in solar power technology. However, it took 15 years to achieve the same gains in solar efficiency, and
Unconventional oil, particularly U.S. shale, has been the most disruptive geopolitical factor in markets since the 1970s.

Edward Morse, Global Head of Commodities Research, Citigroup

the rate of improvement is slowing down. In contrast, there is no sign of a slowdown in shale technology.

Odds are high that as profit margins continue to be squeezed in the current oil price environment, pioneers will now try out some of the new shale techniques, which have yet to be deployed. There are many undeployed shale technologies, including automated drilling, microdrilling, new types of drills (some might use lasers before long), software (finally using big data analytics), nanotechnology, on-site water recycling and new classes of high-resolution, subsurface microseismic imaging.

Such technologies prompted International Data Corporation, the global information-tech consultancy, to assert that “unconventional resources (shale gas, tight oil) will drive innovation in the expanded use of Big Data.” Or as Bill Gates said presciently in a 2011 Wired magazine interview: “The one thing that is different today [in energy] is software, which changes the game.”

Information has been the sine qua non of the oil industry from inception. It’s always been about knowing where to look, where exactly to drill. Seeing through rock is difficult since the earth is opaque to everything in the optical spectrum and essentially all radio waves. However, sound vibration propagates easily through rock. More data from better geophone sensors, better
Information is the oil of the 21st century, and analytics is the combustion engine.

Peter Sondergaard, Gartner Research

algorithms, and more computing power for both exploration and operations changed the oil world forever. One perhaps unsurprising discovery is that 3-D imaging showed that 2-D maps were not only low in resolution but often wrong. As a result, drilling success rates in the U.S. rose from an average of barely 50 percent in 1972—a coin flip, hence “wild cat” drilling—to over 85 percent today.

We are now firmly in the era of smart drilling, but it’s not quite smart enough. In the shale fields, the challenge and opportunity are clear from the singular fact that fracking is done in sections called stages. On average, only one out of four of the stages produces a payday. Such low yields would be anathema in modern manufacturing, and the continuous process (fracking) is most assuredly more like a manufacturing operation than the traditional oil-field business. Thus the potential for huge gains from technology that improve the efficacy of frack stages are arithmetically obvious. Getting to payday on just every other frack stage would, effectively, cut production costs in half.

Big data analytics will wring out more efficiencies using existing data. In addition, the combination of the exaflood of data (defined as “the growing torrent of data on the Internet”) from new sensors with increasingly ubiquitous access to cloud-based supercomputing, available at low cost and by-the-drink, is bullish for everyone, especially for thousands of smaller companies. As noted earlier, there is a natural synergy between silicon technologies and the shale fields.

The third oil age will follow this current, if emphatic, bump in the road caused by global price competition. As my colleague and I wrote nearly a decade ago in our book, The Bottomless Well, when we predicted oil abundance:

“Satellites, acoustic imaging systems, and data processing play such a pivotal role in today’s search for oil that the modern drilling rig has been aptly described by Jonathan Rauch [in 2001] as a computer with a drill bit attached to one end. Brute force is still needed, but drilling for oil has become a delicate, high-precision process of keyhole surgery. . . .”

We wrote that at the peak time for the peak oil theory, the ostensible imminent and inevitable demise of the age of hydrocarbons. Technology is catching up with that prediction. Recently, even the New York Times wrote that the U.S. is poised to become an oil exporter. The world has changed dramatically and we are only at the beginning.
Holy Oil?

Will oil production become the central organizing principle in North Dakotan society? When the boom resumes, will oil and the wealth it produces serve higher ends?

Joseph T. Stuart, PhD, Assistant Professor of History, University of Mary and James Gaston, Associate Professor of History, Franciscan University of Steubenville

Human societies rest on fundamental organizing principles that provide unity and direction. They shape the vision of the people, who tend not to question basic principles, which are regarded as normal (“the way things are”) and prescriptive (“the way things ought to be”). Organizing principles are considered “holy” to the extent they serve the highest ends of a society.

Critical awareness of organizing principles can be difficult to attain because they function as nearly subconscious assumptions. Yet suddenly a new principle can emerge as the prime social and cultural force. Is such a transition happening today in North Dakota due to the shale revolution in the Bakken? Currently the boom is on hold due to low oil prices, but the shale revolution is here to stay. How will this affect North Dakota over the long term?

Eventually oil prices will rebound to profitable levels and, in coming decades, the world’s energy output will grow enormously as billions of people in developing nations overcome poverty. Cheap, reliable and safe energy is required for economic growth, and there is no viable, large-scale replacement for oil and natural gas in the foreseeable future. Solar, wind and other
alternatives will become mainstream energy sources, but not nearly on sufficient scales to displace fossil fuels.

Beginning in the colonial period, agriculture played a prime role organizing the economic, social and cultural aspects of everyday life in America, which dovetailed naturally with the Christian ethos. Then in the late 19th century, industrialization became a powerful organizing force centering ever-greater proportions of the population around foundry, factory and city. Increasingly today, as a result, American society is animated by liberal individualism that privileges autonomous decisions over the constraints of nature, history and community. This organizing principle often shapes how court cases are decided, which public arguments prevail, what opinions can appear in public and what justifies sacrifices in one’s life. Liberalism functions like an established religion, communicating and enforcing a common vision of what is real and right: a view of human beings as pure egos who define themselves and create value or “the good” purely by choice. It does this even while convincing many people that it has no formal dogmas.
This form of liberalism continues to exist alongside other organizing principles, which in North Dakota are still rooted in religious, familial and ethnic traditions that have served to mitigate liberalism’s fissiparous effects. Society has multiple forces at work pushing dynamically in different directions, which can counterbalance each other.

For more than a century, agriculture united North Dakotans around common interests and enemies, especially the mercantile giants in Minneapolis and St. Paul, Minnesota. Material commodities, no less than ideologies such as liberalism, can function as organizing principles. Today both agriculture and oil function this way and sometimes clash as they compete, for example, for railroad space. Besides agriculture, the character of North Dakota has been shaped by common experiences of harsh climate, immigrant backgrounds, wide-open spaces and spring floods.

A great event, a powerful new idea or the sudden rise of an influential social sector can both signal and catalyze a shift from the predominance of one organizing principle to another throughout society. It seems this is occurring in North Dakota today with the massive increase in wealth and influx of new people, both due to the shale revolution that might create the conditions for a new social alignment in the long run.

Although the agricultural and energy sectors rival each other in terms of total revenue, a decreasing number of workers are employed in agriculture, while shale exploration and production has and will require increasing numbers of employees, along with the creation of layers of related businesses. As well, liberalism has weakened family structure, traditional values and the religiosity undergirding agricultural communities and agrarian culture in urban centers.

How can North Dakotans respond so that the growing influence of the energy sector creates more humane cultural and social structures?
Steel as the Organizing Principle in Ohio

In the Upper Ohio Valley (UOV), from the mid-19th to mid-20th century, a shift similar to the Bakken’s impact on North Dakota occurred as steel production increasingly served as the region’s organizing principle. According to co-author James Gaston, steelmaking functioned as a “religion,” as a unifying vision shaping common ways of life. Professor Gaston’s research focused on the main causal relations that made the culture of the UOV intelligible: How geological formations, narrow valleys, coal mines, routes of travel, the Ohio River and the entrepreneurial vision of businessmen, such as Ernest J. Weir, created an economic powerhouse based on steel production. Towns and cities along the Ohio River were soon captivated by steel and its promise of profits and jobs. Steel greatly influenced the location of mills, railroads and homes, and drove urban development and social patterns as people adapted their lives to the rhythm of industrial production and rapidly rising wealth.

In the 1970s and 1980s, international competition, new materials substituting for steel, inflation and other factors precipitated the industry’s collapse. The number of steelworkers in the UOV decreased from 35,000 to 500. Steel had become such an overwhelming focus that the Valley failed to diversify and instead produced an industrial and social monoculture based primarily upon one product. As a result, there came devastating changes to the community: the loss of an essential tax base; an escalation in costly social services; outmigration of leadership and youth; nearly abandoned downtowns; empty houses; and poverty, crime and drugs.

While the lack of economic diversification was partly a failure of practical foresight, it was the inevitable result of a purely materialistic vision. The countervailing forces of faith and community failed to counter the tragic

The trouble with organizing a thing is that pretty soon folks get to paying more attention to the organization than to what they’re organized for.

Laura Ingalis Wilder
effects of the steel monoculture as the primary organizing principle. There were hundreds of Catholic and Protestant congregations, as well as parochial schools and other institutions safeguarding faith and engendering morality. But the Christian ethos was kept to the margins of the public square and did not become the lodestar for commerce. Steel never became truly “holy.”

Science, technology and wealth are morally neutral forces incapable of producing spiritual principles, including a deep caring for the common good, which would encourage economic diversification as a matter of human flourishing and not merely as pragmatic convenience.

The English historian Christopher Dawson noted that modern society, like all societies in world history, “needs some higher spiritual principle of co-ordination to overcome the conflicts between power and morality, between reason and appetite, between technology and humanity, and between self-interest and the common good.”

This prompts the question: What is wealth for? Is it simply for more wealth? The processes involved in steel production demand more steel, just as oil production simply demands the exploration and extraction of more oil. There are no higher principles inherent in these material pursuits that give any indication of how profits should be used, other than to be fed back into and grow the system. Money, labor and technology are tools—but for what end?

**Dutch Compass**

This question was faced by another wealthy nation in the 17th century. The Dutch lived on a flat, fertile plain dotted with windmills, farms, small towns—and dikes to hold back ocean water. Maintaining the dikes encouraged communal ethics, for only common effort and resources could protect against flooding. As a religious, hardworking, family-oriented people, the Dutch developed their nation into one of the world’s wealthiest and most powerful in less than a century. Huge amounts of money became concentrated in a small population, due to cheap energy sources (windmills and peat moss), an influx of skilled labor, and international trade in spices and slaves.

In 1602, the Dutch East India Company became the first multinational corporation, financed by shares that established the prototype of the modern stock exchange. The company established a monopoly on Asian trade, making huge profits. The entire country benefited materially, but wealth also brought moral ambiguity, best articulated in a New York Times review of Simon Schama’s *The Embarrassment of Riches: An Interpretation of Dutch Culture in the Golden Age*:

“How to be strong yet pure; how to be rich yet humble; how to avert the calamity of uncontrolled luxury. For soon, in their fine ruffs, Dutch burghers were choking on Ming porcelain, Anatolian carpets, Lyons silk, Venetian mirrors, Japanese lacquerware, Brazilian emeralds, East Indian
sapphires, oriental spices, exotic Turkish tulips…and, above all, to every visitor’s surprise, hundreds of engravings and oil paintings hanging in even the most ordinary tradesmen’s houses.”

The Calvinism and humanism of Dutch culture signaled the dangers of wealth, countering indulgence with restraint and worldliness with holiness. Wanton luxury, drug abuse and risky business ventures prompted the social guardians and religious leaders to “protect the Dutch from the consequences of their own economic success, just as it was the job of the people to make sure there was enough of a success in the first place to be protected from.” The simultaneous operation of opposite forces within the culture gave the Dutch people “room to maneuver between the sacred and profane as wants or conscience commanded, without risking a brutal choice between poverty or perdition.”

At the same time, the higher religious and humanist culture constantly prodded the Dutch to ask the question: What higher ends should wealth serve? For the Dutch, those ends included lavish provision for the sick and poor, scientific research, and beauty (paintings, clothes, houses, churches), for this was the age of Rembrandt and Vermeer.

But when wealth is sought for its own sake, one can speak of an “embarrassment of riches.” There is something ridiculous about a society that
wastes its great wealth on aimless pursuits, and the Dutch pursued plenty of those: pipe smoking, drinking, prostitutes, tulips to the point of Tulipmania, feasting, opulent homes, foreign trinkets, lotteries and high fashion. Riches are embarrassing if they seem to serve no purpose, if they serve as compass points in every illicit direction.

Perhaps this is why, historically, politicians in North Dakota discovered they could win votes by not dressing too well. Governor John Burke campaigned in an old sheepskin coat; one did not want to appear wealthy or out of touch with life in this state.

What is wealth for?

Unless North Dakotans face this question with care, the desire for material gain could make the shale play into an organizing principle of life so dominating that it marginalizes other principles, creating conditions in which social alignments shift towards short-term and destructive (“ unholy”) pursuits. Is new wealth the consuming end of work or the means to achieve goals transcending the here and now?

These are not easy questions to ask when oil operations are being cut back and jobs are being shed. But still, the major companies reduced their 2015 budgets by only 20 to 25 percent. Billions of dollars will be spent and the break-even point for many wells in the Bakken has fallen below $40 and even below $30 per barrel.

Clarity about true ends, toward which to coordinate social and cultural energies, can be hard to obtain. This is because in a decadent society, luxury, skepticism, weariness, superstition and self-preoccupation become organizing principles obscuring higher ends, as noted by C. E. M. Joad, a well-known British philosopher and broadcaster in the 1930s and 40s. Joad defines “decadence” as the loss of an object or aim.

In American society, decadence has long been characterized by the “feverish” pursuit of wealth, as Alexis de Tocqueville chronicled in the 1830s. Restless grasping at physical gratification leaves the minds of many Americans in “ceaseless trepidation,” which, Tocqueville remarked, leads them to constantly change plans and residences. As a result, he found an “unusual melancholy” and “disgust at life” in the midst of plenty.
Historically, Americans also seek to create a new future out of the limitless opportunities for self-improvement available in a democratic land. This is particularly evident in North Dakota today. The empty, fertile prairie held much potentiality but only hard-won actuality for settlers, as Elwyn B. Robinson noted in *History of North Dakota*. As a result, many opportunities had to be postponed for succeeding generations when the convergence of resources and new technology in the energy sector engendered economic flourishing.

What distinguishes the Bakken boom has been its rapidity, which brought massive wealth and population increases within a few years. It is “impossible to not feel the frenzied pace of oil production throughout all areas of life,” reported Chad Ziemendorf, a photojournalist, in his online magazine. “It is a 24-hour culture now. While most are sleeping the drilling rigs are active. Even some construction continues through the night. Once a location is approved to be drilled, earthmovers and heavy equipment roll in to level the ground and prepare the surface for oil production. ‘Open prairie’ transforms into ‘oil pad’ … in less than one week’s time.”

In the midst of all this toil, North Dakotans must find higher ends and other organizing principles to counter the “disgust at life” connected to feverish activity, to the restless drive to “work for work’s sake,” as Josef Pieper describes in *Leisure: the Basis of Culture*. This inability to “be,” to rest in silence, even to sleep, Pieper attributes to a form of laziness called *acedia*.

Workaholism is a form of *acedia* because people fail to face their full humanity, to give full consent to their being, to will the truth about themselves and the world. People escape into work and away from themselves. Although the sense of emptiness increases, the temptation is to work even harder in a desperate attempt to create meaning.

**Leisure**

In response, one must rediscover a sense of leisure through which to perceive what makes labor and the pursuit of wealth meaningful. Leisure is not merely the cessation of work to prepare for more work. In contrast, Maria von Trapp of “Sound of Music” fame wrote about celebrating the Lord’s Day, not merely observing it. In Austria in the early 1900s, she and her family walked to Mass in their Sunday best, returned home for a meal and then:

“The afternoon was often spent in visiting from house to house, especially visiting the sick. The young people would meet on the village green on Sunday afternoons for hours of folk dancing; the children would play games; the grownups would very often sit together and make music. Sunday afternoon was a time for rejoicing, for being happy, each in his own way.”

*Of course the world of work … threatensto become our only world, to the exclusion of all else. The demands of the working world grow ever more total, grasping ever more completely the whole of human existence.*

*Josef Pieper*  
*Leisure: The Basis of Culture*
Leisure derives from *licere* (Latin), to be permitted. It means neither being busy nor idle, but letting things happen, Pieper writes. Leisure allows us to discover and celebrate the higher *telos* of human life as revealed in education, culture, works of mercy and God. As a form of silence, leisure is a receptive attitude of mind, a serenity derived from deep confidence to let things take their course without trying to grasp and control them. Leisure is a celebration, a consent to the goodness of human nature and an affirmation of creation as good. It is the capacity of the human spirit to soar in festive celebration and contemplation, allowing the higher ends of human life to reveal themselves: freedom-for-truth, education, culture, God.

Leisure is connected to the *cult* of a society, to its worship. A society worships what it considers its highest and holiest organizing principle or end. Work itself can become a cult; the religion of work is one in which people seek to generate their own values and meaning through ceaseless activity. This is why Christianity forbids servile work on Sundays. This is not a negation but an affirmation of all that transcends the world of work and directs it toward higher ends, such as works of mercy or building Gothic cathedrals in the 13th-century with Europe’s new wealth.

Tocqueville remarks that in ages of faith, the final goal of life is in the next world, serving as an immovable object or organizing principle for social activity. People suppress passing desires in pursuit of higher objects, and when these same people engage in affairs of this world, the same habits mark their conduct. Sunday worship raises our sights, opening up fertile ground for the cultural values inherent in games, singing, visiting, music and charity, as shown in Trapp’s essay. This is why Pieper argues that leisure, rightly understood, is the basis of culture.

But as the light of faith dims, the range of higher ends shrinks. As wealth and liberalism join forces, people become convinced they create their own values. Yet as Joad argues, to propose that personal experience is the source of value is hubris, a false understanding of the place human beings maintain in reality, which inevitably takes revenge by bringing social decay and sometimes complete collapse.

We have to relearn through suffering that only permanent values, which we discover rather than create, give real meaning to the world of experience.
Only these fundamental principles can form a valid basis to evaluate and appreciate our daily lives. We perceive these truths in artistic and natural beauty, and in our contact with reality in science, mathematics, philosophy, history and literature. Ultimately, we find the highest truths in our efforts to serve God and others in charity. Understanding human experience as a window into the world of truth can orient a society toward higher ends that serve as authentic organizing principles.

Oil as Holy

Oil can be holy if it serves higher ends, which can be perceived in moments of leisure when one is more truly authentic. Other organizing principles must exist in relationships of tension with oil, not so much to limit its extraction from the ground but its influence in society. These principles channel oil’s influence toward ends higher than material pleasures and accumulations.

Higher ends remain visible if the spheres of religion, community, family and culture endure as strong countervailing forces to liberal individualism and the aimlessness of ceaseless work and wealth creation. Churches and communities will thrive to the extent that the state respects the limits of its power, which has become an urgent issue in recent years, and Sunday is defended from servile work and business. Families must be able to secure a just wage, allowing them to save money and acquire property. People must be able to find quiet, beautiful places to reflect in and worship. Here they will be able to renew their attachment to higher ends and the humanist cultural values in art, music, film, dance, architecture, scholarship, writing and the enjoyment of nature, and the civic cultural values in voluntary associations and philanthropy.

Not just any kind of culture should exist in North Dakota, for “culture” can corrupt a society as easily as enoble it. Rather, leading institutions—universities, libraries, museums, government agencies, private foundations, businesses, churches—must establish incentives for people to create the culture we truly want. Liberalism seeks to reduce culture to individual choice, but we need to promote culture that ennobles the human person through appropriate kinds of art, music and charitable activities. Freedom is not simply the exercise of choice as an end in itself but the ability to choose the higher ends of goodness, beauty and truth. Oil money, in conjunction with other positive organizing principles in North Dakotan society, can help create incentives toward right choices within a wholesome culture. If so, the shale revolution in the Bakken will produce “holy oil” as a powerful and tempered social organizing principle.

Money is like manure. You have to spread it around or it smells.

J. Paul Getty
Education is simply the soul of a society as it passes from one generation to another.
– G.K. Chesterton

Students at Xi’an Foreign Language School, which boards more than 4,300 students in grades 1 through 12. These two boys were preparing to go home for the midterm break.
Last summer, I visited schools in China as the culmination of the National Education Association Foundation's 2014 Global Fellowship Program. There were 29 other Fellows, all teachers at the K-12 or university level in public and private schools nationwide. Prior to the 6,000-mile trip across the Pacific Ocean, we began learning online about China's culture and education system, and we met with other Global Fellows in Washington, DC, to study more about global competencies and the educational curricular structure that places China's high school graduates among the top performers on standardized tests in the world.

There is much American educators can learn from their Chinese counterparts that would improve our schools and make our students more competitive in their careers. As Angel Gurría, Secretary General of the Organisation for Economic Co-operation and Development (OECD) remarked: “More and more countries are looking beyond their own borders for evidence of the most successful and efficient [educational] policies and practices. Indeed, in a global economy, success is no longer measured against national standards alone, but against the best-performing and most rapidly improving education systems.”

The Programme for International Student Assessment (PISA) tests 15 year-olds in the 34 OECD countries, 38 non-OECD countries and three
If the U.S. raised its performance to that of Finland within 20 years, which is necessary to remain competitive, the report calculates that U.S. GDP would increase by $103 trillion over the lifetime of the generation born in 2010.

non-OECD cities in or under the jurisdiction of the People’s Republic of China (PRC). On the most recent assessment in 2012, the U.S. ranked 27th in mathematics, 17th in reading and 20th in science among OECD nations. This was even worse than in 2009 when the U.S. ranked 25th in mathematics, 14th in reading and 17th in science. Among all participants, American students placed in the middle, significantly below peers in impoverished countries such as Vietnam. The top nations included Taiwan, South Korea and Finland, which scored highest among OECD countries. The three PRC urban districts placed at or near the top, with Shanghai scoring significantly above all other competitors.

Most disturbing for Americans is the declining proportion of top performers. “In the United States, only 12 percent of students reached the highest levels in at least one subject while 4.7 percent did so in all three subjects” stated a report by the Alliance for Excellent Education, based on PISA data. “Compare those results to Shanghai-China, where 56 percent of students were top performers in at least one subject and 19.6 percent were in all three, and Canada, where the percentages were 21.9 percent and 6.5 percent, respectively.”

On national assessments, North Dakota’s students rank at the national average in reading and among the top 10 states in mathematics, which is still significantly below the international peers they will compete with in the global marketplace.

Looking at the PISA results more broadly, improvements in student outcomes would have huge impacts on future economic growth, according to an OECD report. If the U.S. raised its performance to that of Finland
within 20 years, which is necessary to remain competitive, the report calculated that U.S. GDP would increase by $103 trillion over the lifetime of the generation born in 2010. If all OECD nations did the same, GDP would grow by $260 trillion, which is six times the current aggregate total.

The need to address this growing gap between the future human capital of the US and international competitors has become urgent. Fortunately, the most efficacious way to improve learning, through focusing on learning skills and rigorous standards, is starting to be pursued across North Dakota and in most states nationwide.

Global Marketplace

Increasingly, our children will have to compete in the global marketplace as individuals, citizens and business people. Preparation for future careers has shifted away from primarily imparting content and toward learning skills in order to adapt nimbly to changing job requirements in a rapidly changing economy. In 2014, North Dakota led the nation in job growth and, over the past 11 years, the state's economy doubled in size. Now more than ever, educational leaders, teachers and higher education professors have significant roles to play to ensure that all students have both the knowledge and skills to meet new challenges. The need for strong core academic skills, problem-solving skills, technological literacy and an understanding of our interdependence with other countries are critical to preparing students to succeed in a dynamic global society.

The rapid decline in “routine” work has been well documented by job analysts. Routine skills and lower-order thinking, although easy to teach and
assess, are readily outsourced or replaced by technology. At the same time, there has been a rapid increase in jobs involving non-routine, analytic and interactive communication skills. Today’s job market requires the ability to analyze and think on one’s feet—while utilizing an electronic device. More employees work virtually on laptops and smartphones. Whether working remotely as an IT consultant or in the center of the Bakken, workers must be skilled at using resources and technology to problem solve and interact with people from many linguistic and cultural backgrounds. The battle cry for graduates with 21st-century skills has caused educators to reevaluate textbook-driven curricula that teach each subject in isolation.

As educational leaders try to keep pace with employers’ expectations, it’s crucial that they implement a skills-driven, standards-based approach. Content knowledge will be taught, of course. Students cannot apply what they do not know, nor can they think critically without content knowledge. But educators prioritize content and teach essential standards in more depth through connection to related fields. Science standards, for instance, have broad importance across multiple disciplines, such as technology and engineering. Methods such as project-based learning, internships, integrated curriculum, experiential learning, technological integration and primary research are some of the core strategies being implemented in many American K-12 schools to spark a passion for learning and to engage
students in authentic (real-life) tasks and assessments. Effective learning is active and rooted in essential standards, which encourage students to create projects and demonstrations with purpose for real-world audiences. For example, students might study a real problem in their community and work to answer the driving question of how best to find solutions. Then rather than present their work only to their teacher and classmates, their target audience could be city council members or representatives from relevant government agencies.

**Innovations in China**

Billed as one of China’s experimental schools, Xi’an Foreign Language School is proving to be an experiment worth analyzing. Xi’an is a boarding school of over 4,300 students located in Xi’an, China’s ancient imperial capital with a history rooted in the 3,000-year-old Zhou Dynasty. Inside the gates of the spacious campus courtyard is a brightly colored sign that reads, “Language is Power.”

As the delegation of American teachers walked onto the campus, students were transiting between classes. Both boys and girls wore the school uniform of black dress pants and white collared cotton shirts. Their stride...
was relaxed and they smiled as they waved enthusiastically at us. Yun Ya Feng, the school’s Director of International and Exchange Students, greeted us warmly in the school’s boardroom and immediately shared that she taught in New York City for a year. Feng led us on a campus tour, proudly showing off the outdoor soccer field and track nestled between the six-story apartment buildings housing the school’s dormitories and some classrooms. Eagerly she highlighted the large variety of experiential learning opportunities the school offers in grades 1 through 12. These hands-on, project-based learning experiences are designed to enable students to acquire both content knowledge and applied skills by participating in activities, such as performance reading, speech competitions, plays, foreign language speeches and debates, arts festivals, and field trips to experience the world outside the school’s walls.

The school’s motto is, “Two plus one is greater than three.” The “two” refers to the required foreign languages and the “one” refers to each student’s chosen specialty. At all grade levels, students are encouraged to choose a specialty beyond core academic and language courses that nurtures individual talents and interests in a student-centered learning environment.

Consequently, performance-based assessments, which are designed to let students show what they can do, are unique for each student. This differentiated model provides opportunities to immerse students in applying creative and critical skills, which are essential for leaders in today’s rapidly changing economy. This approach contrasts greatly with the rigid, test-focused programs that characterize the vast majority of Chinese schools preparing students for the extreme high-stakes National College Entrance Exam.

Xi’an is renowned for winning first prize in the high school entrance examination in Lian Hu District for seven consecutive years. Xi’an also posted the top scores on the national high school English proficiency exams.
To remain one of the top-performing schools in Western China, Xi’an recruits master teachers from around the world, including from the U.S.

Also, Xi’an has developed cooperative relationships with more than 30 schools abroad and currently partners with two American sister high schools: Gould Academy, an elite private institute in Maine, and Stevenson High School, one of the top public secondary schools in Chicago. Xi’an regularly participates in international teacher and student exchanges that heighten the school’s experiential and multicultural atmosphere.

The Global Fellowship delegation visited another innovative school, Beijing’s renowned Jinsong Vocational High School. In a bold move away from excessive emphasis on regimented test preparation, Jinsong’s president He Shirong successfully leads the school in teaching core academic standards while also developing creativity and higher functioning problem-solving skills.

Jinsong’s facilities and equipment are state-of-the-art, and China’s top companies compete for the school’s highly skilled interns in fields, such as cosmetology and the hotel and restaurant industries. Admission to Jinsong, one of the oldest vocational schools in Beijing, is highly competitive and attracts some of China’s best students from many districts nationwide and internationally from countries such as the U.S., Germany, Russia, France and Israel. In 2012, Jinsong accepted 1,200 students from 11,000 applicants, which at 10.9 percent is slightly lower than the acceptance rate at Dartmouth.

Vice Principal Wang, joined by the culinary teacher, answers questions from the Global Fellows.
REVIEW

College, an Ivy League institution. This contrasts starkly with the tepid enthusiasm for vocational secondary education in the U.S. Even though there are high-quality vocational schools, such as Career Academy in Bismarck’s public system, Americans typically view vocational education as a fallback choice for their children.

Not so in China. The hallway walls leading into Jinsong’s ultra-modern classrooms are lined with framed photos of dignitaries visiting the award-winning school beside alumni photos of famous chefs and eminent business CEOs. Administrators and teachers work closely with major companies to develop professional course curricula and purchase cutting-edge equipment and technology.

Although Jinsong is state-operated, professional partners share in teaching in and funding school programs. This level of collaboration and purposeful planning is possible because teachers are responsible for teaching only about 12 hours per week, compared to a typical teaching load of 30 hours in the U.S.

Jinsong students may go on to attend university upon graduation, but most accept paid internships and then establish careers with the companies recruiting them.

When Mr. Wang, a vice principal and mathematics teacher at Jinsong, was asked by a Global Fellow about the most rewarding part of his job, he responded: “There is nothing more fulfilling as when students begin to see that math is everywhere in the world. We know we have come full circle when we see our students working and leading in major companies, and when we see our students grow into respectful and ethical human beings.”

Innovations in North Dakota

Increasingly education and business leaders across America are seeing the value of school-industry partnerships and project-based learning, which motivate students by giving them an opportunity to apply core academic skills. “We want universities to teach students the fundamental skills needed in business, accounting, communications and other areas, and we will teach them energy,” said Ron Ness, President of the North Dakota Petroleum Council, in an interview. Referring to internships, he added that it’s “also good to expose students to opportunities in energy to enable them to see their career opportunities.”

In North Dakota’s growing economy, business leaders faced with hiring shortages can benefit from partnerships with secondary and post-secondary institutions. Through internships, lab schools and other school-professional partnerships, professionals offer students the opportunity to benefit from modeling by, and feedback from, industry mentors.

Over 25,000 jobs are currently open across North Dakota. Healthcare, energy, manufacturing, transportation, public services, agriculture, tourism and retail all report significant workforce shortages.

ND Department of Commerce
Since 2012, all new public schools in Bismarck are designated as project-based learning schools. Teachers teach academic skills in the context of comprehensive and often interdisciplinary projects, which are curriculum-based and designed to engage students in an investigation of real-world problems. This focus motivates students in dynamic ways since they see their work having a connection to actual problems needing solutions, which seldom occurs in traditional classrooms.

In March 2014, Robin Nein, a social studies teacher at Bismarck High School, taught about the legislative process with traditional lectures and textbook readings. She also engaged students in applying procedural knowledge to questions such as, “What concerns do you have about your community and how can you use the legislative process to address them?”
In March, Tanner Harris ('15), an education major at the University of Mary, taught social studies at St. Mary’s High School in Bismarck as part of an internship with master teachers. Harris was also mentored by the head coach of the boys’ varsity basketball team. Both experiences helped Harris apply teaching methods in real-world settings under the guidance of educational leaders.

In response, students researched existing legislation and worked on crafting alternative bills aimed at addressing problems more comprehensively. By scrutinizing primary documents, such as the Constitution of North Dakota and state statutes, students worked collaboratively to prepare a sophisticated presentation for state legislators who visited to consider proposals and challenge students on their research, analysis and ideas. The legislators asked pointed questions and challenged the students to defend their propositions. This interchange precipitated a deep learning process for the students whose perspectives were broadened as they considered whether the problems they addressed called for legislative action or simply for increased personal responsibility.

Bailey White, a senior in Nein’s class, proposed mandatory vaccinations in North Dakota to Rep. Karen Karls (R-Bismarck) in order to resolve health concerns about non-immunized students in the public school system. Rep. Karls challenged Bailey to address her belief that there is no link between autism and vaccinations. Bailey responded by citing several credible studies with data disproving a connection.

“Knowing that legislators were coming to the presentations made it exciting,” said Bailey in an interview, “and I wanted to do well by preparing to share with them in a convincing way. I spent a lot of time researching my proposal and studying the laws being debated in the legislature to understand current and proposed legislation more deeply.”
Bailey and her classmates learned firsthand about each step in the legislative process and the role that citizens and citizen groups play in lawmaking. The key to motivating high school students to think critically and put in the needed work to prepare high-level proposals, Nein observed, is tapping into their sincere desire to make a difference in their communities, which project-based learning facilitates. Connecting the classroom to the real world through business and public service collaborations, locally and across the globe, helps students acquire the broad set of knowledge, skills, work habits and character traits that are important for success in contemporary careers.

**Compare and Contrast**

While China and the United States are committed to getting students ready for college and career, it’s also clear that America is committed to the ideal of preparing all students and China, in contrast, is far more exclusive. Of the 9.39 million Chinese students who take the National Higher Education Entrance Exam every year, only the very top performers go onto university. There is no attempt beyond the compulsory first nine years of schooling to streamline education or assessment for the vast majority of Chinese students.

Only select college preparatory high schools in China take the PISA. This partly accounts for the top rating, which the three urban areas under PRC jurisdiction achieved. Undeniably, however, China graduates students with formidable academic prowess, and we can glean valuable insights from their preparation.

China’s strength lies in core academic performance, which is undoubtedly influenced by the strong value Chinese families place on high test scores. This focus is sharpened greatly by the limited opportunities for social mobility without a college education. Academic performance is also aided by the longstanding practice of training teachers well and giving them respect throughout Chinese society. Even though school days and the school year are longer, the teaching load is significantly lighter than for American peers, which gives Chinese teachers the time needed to design effective lesson plans, collaborate on initiatives and tutor individual students. Also, Chinese teachers are responsible for fewer standards. This enables educators to teach at greater skill and content depth, thereby increasing student proficiency. Teachers share high expectations with parents, resulting in high academic achievement among students who view schooling as a privilege.

Xian Foreign Language School and Beijing Jinsong Vocational High School, as well as schools such as Qibao High School in Shanghai, represent isolated pockets of educational reform within a larger Chinese system that still operates primarily with teacher-led repetition and rigid test-preparation drills. This has proven efficacious, but at what cost?
Cautionary Tales

In *Who’s Afraid of the Big Bad Dragon*, Yong Zhao, PhD, describes the urgent need for widespread educational reform in China. Zhao is currently the Presidential Chair and Director of the Institute for Global and Online Education in the College of Education at the University of Oregon. He writes that China’s top test scores in a narrow set of subjects indicate how successfully the country has homogenized its students. The Chinese system, he argues, is the perfect incarnation of authoritarian education. It produces the world’s best exam results at the cost of the diverse, creative and innovative talents essential for strong leadership.

In an article on CNN’s website titled “The Costs of Shanghai’s Education Success Story,” Jiang Xueqin, the Deputy Principal of Tsinghua University High School, points out that China’s emphasis on exams and algorithmic solutions has produced an abundance of computer programmers and accountants. Chinese graduates do well in a system where there isn’t much space to make mistakes, Jiang writes, but when they enter society or must work on open-ended projects in multicultural environments, they often do not perform as well. China’s system discourages the formation of creative thinkers with the skills attractive to international employers, as evidenced by China’s shortage of highly competent managers and successful entrepreneurs. As a veteran educator, Jiang argues that long school days, crammed schools and excessive hours of homework are less about helping students learn than about pleasing anxious, hyper-competitive parents who have one child and see no other option for success but a university education.

In China, the school calendar averages 25 to 30 percent longer than in the U.S. and classes are far more intense. In Maotanchang Secondary School in Anhui Province, for example, students begin school at 6:30 a.m. and finish around 10:30 p.m., when they return home with homework to complete for the next day.

Sadly, suicide is the top cause of death among Chinese youth and stress from school is cited as a major contributing factor. Not surprisingly, studies show that from 80 to over 90 percent of students in China, Japan and South Korea suffer from nearsightedness (double the American rate) by the time they leave school because of the long hours of studying indoors. Up to 20 percent of these youngsters run a high risk of myopia, which can lead to vision loss and blindness. Ironically, the word “myopia” also describes narrow-mindedness.

Also, in other Asian countries, such as South Korea, extreme pressure is put on students to succeed on high-stakes tests. The costs are high in terms of
physical and psychic wellbeing. South Korea’s suicide rate is by far the highest among OECD countries at 33.3 per 100,000—and four times higher than in the U.S.—according to a 2014 report, which did not include China. Suicide is the leading cause of death among Koreans aged 10 to 30 years. In America, accidents more than double the suicide rate in the same age group.

In response in China, Jiang cites a rising tide of parents concerned about their child’s well-being who are choosing schools abroad or opting for new private Western-style schools that have sprung up in major Chinese cities. A growing number of parents and educators are seeking alternatives to excessive cramming of information that robs students of their childhood, empathy and enthusiasm.

American private schools have seen an almost 6,000-percent growth in the number of Chinese secondary school students since 2005. Now almost 50 percent of international students coming to the U.S. for secondary school come from China. American private prep schools offer both a rigorous curriculum, with small class sizes and opportunities for students to explore and develop their innate curiosity, creativity and love of learning.

American Paradox

Assessing American education in light of international comparisons clarifies the basic paradox. On the one hand, not only do American students fare poorly on international tests, such as PISA, but a recent report shows how poorly American millennials (15 to 35 years of age) perform:

“[D]espite having the highest levels of educational attainment of any previous American generation, these young adults on average demonstrate relatively weak skills in literacy, numeracy, and problem solving in technology-rich environments compared to their international peers. These findings hold true when looking at millennials overall, our best performing and most educated, those who are native born, and those from the highest socioeconomic background. Equally troubling is that these findings represent a decrease in literacy and numeracy skills for adults when compared with results from previous adult surveys.”

On the next page is an illustrative graph regarding numeracy. American millennials did not perform much better on literacy and problem-solving comparisons.

This report, titled “America’s Skills Challenge: Millennials and the Future,” was produced by the Educational Testing Service using PIAAC data. Not only are millennials the most recent graduates from our educational system, they have more years of schooling than any previous American cohort. Something is badly amiss.
The paradox’s other prong, however, is well articulated by Fareed Zakaria, CNN commentator and author of *In Defense of Liberal Education*, in his Washington Post column:

“The United States has led the world in economic dynamism, innovation and entrepreneurship thanks to exactly the kind of teaching we are now told to defenestrate. A broad general education helps foster critical thinking and creativity. Exposure to a variety of fields produces synergy and cross-fertilization. Yes, science and technology are crucial components of this education, but so are English and philosophy. When unveiling a new edition of the iPad, Steve Jobs explained that ‘it’s in Apple’s DNA that technology alone is not enough—that it’s technology married with liberal arts, married with the humanities, that yields us the result that makes our hearts sing.’”

Zakaria goes on to point out that American students have never scored well on PISA since the international exam was first given in 1964. “And yet over these past five decades, that same laggard country has dominated the world of science, technology, research and innovation.” The same pattern holds true for Sweden and Israel, both innovative countries that don’t educate the best test takers. There is no guarantee, of course, that the US will maintain this position indefinitely, especially in an increasingly technological society.

“Educational failure puts the United States’ future economic prosperity, global position, and physical safety at risk,” warned a task force sponsored by the Council of Foreign Relations in a 2012 report. The task force was chaired by Condoleezza Rice, a professor at Stanford University and former...
U.S. Secretary of State, and Joel I. Klein, former head of New York City’s public schools.

Conversely, will China produce enough innovative leaders with highly tuned soft skills to lead the country forward economically, politically and culturally in the coming decades?

Conclusion

While there are obvious shortcomings to China’s education system, there is much for American educators to gain from both China’s mainstream approach and innovative schools, such as Xi’an Foreign Language School and Beijing Jinsong Vocational High School. China’s commitment to creating time for teacher collaboration, classroom planning and professional development positively impacts student achievement and teacher retention. We can also learn from China’s rigorous standards and deliberate teaching of core academic skills by integrating them into authentic learning and collaboration activities within American schools. This would balance direct instruction, rich in content, with intervention strategies to get all students ready for hands-on application.

In many ways, the Chinese and American education systems are moving into closer alignment. Both countries understand they are preparing students for a different world than today—one that is more interconnected, less predictable and changing rapidly. Also, business leaders and educators in both countries mostly agree on the broad set of knowledge, skills, work habits and character traits important for success in contemporary careers and workplaces. As a result, there is a greater emphasis on academic standards, communication skills, and on collaborative and higher-order thinking skills.

Innovative educational approaches integrate these with inquisitiveness, creativity and problem-solving proficiency, while avoiding an excessive emphasis on tests. In the long run, innovative educators will play a more important role in improving education than funding, teacher evaluations, standards or high-stakes assessments. Working together locally, nationally and internationally, these teachers and administrators will help students find their passions, and give them the foundational skills and both theoretical and applied knowledge they need to succeed in the 21st century.

The mind is not a vessel to be filled but a fire to be kindled.

Plutarch (circa 45-120 AD)
In The Hobbit Party: The Vision of Freedom That Tolkien Got and the West Forgot, authors Jonathan Witt and Jay Richards (W&R) attempt to find what they consider the true meaning of J.R.R. Tolkien’s writings: that the author of Lord of the Rings advocated a technocratic, laissez-faire capitalist political system.

This libertarian reading of Tolkien is not surprising considering that Jonathan Witt is a research fellow at the Acton Institute, a think tank that integrates “Judeo-Christian truths with free-market principles,” according to its website. Jay Richards is a senior fellow at the Discovery Institute, which is known mostly for presenting nature’s “compelling evidence for intelligent design.”

The problem with W&R’s interpretation is not that they are trying to prove that capitalism and technology have produced a much higher standard of living in the West. This argument was won long before they conceived the idea of writing the book. The primary issue is that The Hobbit Party attempts to argue that since capitalism makes many people fabulously wealthy and provides access to mounds of cheap goods, Tolkien must have supported capitalism.

There & Back Again, Again

To be fair, substantive portions of The Hobbit Party are worth reading. But everything W&R say about Tolkien’s Catholicism (Chapters 5 and 9), anti-materialism (Chapter 5), Christian environmental stewardship (Chapter 7), vision of the Just War and praise of noble chivalry (Chapter 6), and regionalism (Chapter 8) has already been said before by previous authors.

W&R’s unique contribution to Tolkien studies is their discussion of Tolkien’s praise of fertility contra the misanthropy of contemporary environmentalists. However, this point doesn't help their argument since one could be pro-life without being pro-capitalist. This section of the book stands alone amidst a Mordor of error and redundancy. Because of the efforts of
Myth and fairy-story must, as all art, reflect and contain in solution elements of moral and religious truth (or error), but not explicit, not in the known form of the primary ‘real’ world.
authors Shippey, Pearce and Kreeft (listed to the side), readers already know that in Tolkien’s works, the forces of Mordor represent the forces of Soviet Communism and German National Socialism in their totalitarianism, violence and hyper-industrialized contempt for the natural world. What W&R attempt to do is to prove that Tolkien is not critiquing the third head of modernity’s hydra (capitalism) contrary to what readers had previously thought.

As Americans we are naturally skeptical of literary criticism. We would rather read books than talk about them, and what we hate the most, of course, is when someone else is trying to explain a book to us. We know that, when someone is trying to tell us what a book really means, what that person is trying to tell us is what he or she wants the book to mean. It is thus not weird that many have attempted to get Tolkien’s works to mean not what they were written to mean but what ideologically committed people think the books mean, or perhaps should mean.

**Hippie Hobbits**

Interpretations are legion. Perhaps Tolkien was a hippie, and his references to tobacco use are actually references to drug use; there are numerous rude and inventive references to marijuana and psychedelic drug use throughout Peter Jackson’s movies. Maybe Tolkien was a New Ager, and the references to magic should be taken literally as a guide to ushering in the Age of Aquarius; the rock band Led Zeppelin wove references to Tolkien in their occult hymns. No, Tolkien was a really a Nazi and his use of Nordic culture was a tribute to a failed Austrian painter (Tolkien famously received a letter from a Berlin publisher in 1938 questioning his ethnic purity; in response, the English novelist lectured the publishers for misusing the word “Aryan,” which has more to do with Iran than Deutschland and praised the Jews as being a gifted people). Or best of all, Sam and Frodo are not really sincere, Christian friends; they are secretly gay as was Tolkien, supposedly, and everyone else for that matter—such a fantastic view of the fantasy novelist can be found in Brenda Partridge’s infamous essay, titled “No Sex Please—We’re Hobbits: The Construction of Female Sexuality in *The Lord of the Rings.*”

Happily, most people ignore these critics and just read the books. Or they watched Peter Jackson’s movies, which unintentionally inspired a steady stream of critics trying to dispel or qualify traditional readings of Tolkien, even though his status as a Catholic fantasy writer who opposed the excesses of modernity from a conservative perspective has firmly been established.

One of the many problems with W&R’s thesis is the attempt to read Tolkien’s antistatism as supportive of their economic liberalism, citing the absence of direct, bureaucratic rule in the Shire. Yet an antistatist is not necessarily a pro-capitalist. Another example of Tolkien’s support for
capitalism, according to the authors, is the contract that the dwarves, Bilbo and Gandalf sign at the beginning of *The Hobbit* (or *There and Back Again*). But what W&R fail to grasp is that Tolkien’s description of the contract is obviously satirical. Also, a contract doesn’t have to be capitalistic, as if feudal and other societies didn’t have such arrangements. Nor were they going on a business venture. Bilbo and company did not set out to sell something to get the gold or invest it for Smaug the fearsome dragon. Rather the party’s quest was a romantic journey to recover a hoard of treasure from the winged fire-serpent. Sometimes the simplest readings are best.

W&R find further evidence that Tolkien supported liberal capitalism in the “business” agreement between Beorn, the shape-shifting woodsman, and Bilbo’s crew through which Tolkien supposedly emphasizes “property rights.” Also, for the authors of *The Hobbit Party*, Bilbo’s desire to compensate the wood elves for what he stole is an infallible sign of Tolkien’s support for capitalism. One wonders what versions of Tolkien’s books W&R were reading. Even the fact that the characters in Tolkien’s stories exercise free will is indicative that Tolkien espoused “libertarian freedom” and thus supported the free market model.

The overwhelming thrust of Tolkien’s literary works, as W&R note, includes serious attacks on industrialization and the proliferation of technology in the modern world. W&R ignore this obvious thread in the English author’s work and attempt to argue just the opposite: that Tolkien was a qualified advocate of the industrial revolution. Their argument, drawn from Shippey’s depiction of Bilbo Baggins as an Edwardian gentleman, is that because there are clocks, tea, tobacco and bacon and egg breakfasts in the Hobbit, Tolkien thought that the advancement of technology in the industrial age was a good thing and certainly would approve of all the wonderful advancements of the computer age. Surely, the authors aren’t suggesting that because Hobbits drink tea, Tolkien would condone the iPhone? In fact, Tolkien despised the automobile, that prime emblem of modern capitalism, and refused to set foot in one, choosing to ride a bicycle, which is surely a non-Orcish, non-destructive technological advancement.
A Hobbit After All

Another observation that sixty years of Tolkien criticism has failed to apprehend, according to W & R, is that the dragon Smaug does not really represent industry—isn’t that why he is called Smaug? The dragon hoards money instead of investing it in the stock market like a good capitalist. Therefore, W&R erroneously conclude that Tolkien supported capitalism.

Also, despite what every previous reader thought, W & R brashly suggest that Tolkien did not argue for small-scale craftsmanship and the virtues of the local market. For the two critics, the fact that the Hobbits might have traded with dwarves and elves reveals that Tolkien supported the global free market. And because the dwarves employed a large number of workers in the construction of Moria and the Hobbits built a water mill, Tolkien would approve of big business.

Throughout The Hobbit Party, W&R attempt to make their convincing argument for the power of capitalism to generate wealth support their unconvincing argument that Tolkien was a capitalist. No doubt Jonathan Witt and Jay Richards had good intentions when writing the book, but they forgot the actual vision Tolkien made explicit in his works.

In the end (and long before), Tolkien was neither a bookish advocate for big business nor a tweed-wearing Marxist. Instead, Tolkien sought a free market in the medieval sense: a local marketplace in which crafted goods are honestly exchanged on a small scale. The “hobbit party” is the party of the humane economy—free from both pincers of big business and big government. Of course in Tolkien’s works, Hobbits, elves, dwarves and men use technology, but it is technology at the service of life.

It is the bad guys in Tolkien’s world who are part of the big technocratic and evil system. Orcs and other monsters of Mordor are slaves of an oppressive, all-powerful master who imposes a system in which all the little guys are mere chattel. Mordor represents any economic and political order that leads to serfdom, whether it is capitalist or socialist.

Happily, readers can enjoy Tolkien without any need to use The Hobbit and The Lord of the Rings as cultural capital to say that the author is on “my side.” Rather, Tolkien is best by one’s side—in print or on Kindle.

Hobbits, Hobbits Everywhere

The first print run of The Hobbit numbered 1,500 copies. Since 1937, the novel has been translated into over 60 languages, including Elvish of course. Estimates of how many copies have been sold worldwide range from 35 to 100 million. The first adaptation of The Hobbit was staged in 1953 at St. Margaret’s School, an all-girls academy in Edinburgh, Scotland.
Movie Review

Fire and Ice

The Poetics and Politics of the Bakken in Documentary Films

Marek R. Dojs
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The 2015 Oscar nominations included one film about the North Dakota oil boom and surprisingly ignored another. In many aspects, “White Earth” deserved to be nominated in the Documentary Short Subject category even if the film didn’t win an Academy Award. Surprisingly, “The Over-nighters” was left out of Documentary Feature consideration. Both movies steer clear of overtly political and environmental issues involved in fracking in the Bakken to present humanistic stories about people at the shale revolution’s ground zero. Since documentary films often carry more respect with contemporary audiences than traditional journalism, it is important to examine these films to assess how what’s happening in North Dakota is being presented to the rest of the world.

White Earth

J. Christian Jensen’s “White Earth” is a poetic 20-minute film about the oil boom seen through the eyes of those who usually have little to no say in the decision to migrate to the Northern Great Plains: children and mothers. “White Earth” entered Oscar season with an impressive list of awards, including the Jury Award for Best Short Film at the Full Frame Documentary Film Festival and a Special Jury Award for Best Cinematography for a Documentary Short at the Slamdance Film Festival. The film has also been featured at over 30 national and international film festivals.

To most viewers, the film title would seem just a descriptive reference to the North Dakota winter landscape, but it is also the name of a small town where the main characters live. Founded in 1888, White Earth began losing...
residents in 1910. Statewide, the population continued to grow but then went into steady decline after the 1930 census. In 2000, there were only 63 residents in White Earth and the median household income was $26,250. In recent years, large numbers of workers and sometimes their families moved to western North Dakota as hydraulic fracturing and horizontal drilling opened up the Bakken shale formation to oil production. This sudden migration created a housing and other social crises, which have become the focus of filmmakers regarding the oil boom.

Originally from Utah, Jensen is a journalist turned documentary filmmaker who made “White Earth” as his MFA thesis film at Stanford University. He’d heard from his father about large numbers of workers leaving Utah for North Dakota seeking wealth. This gold rush atmosphere gives “White Earth” its unique viewpoint. The film weaves the stories of three children and an immigrant mother into a tale of innocence and the American Dream. Most characters live in work camps or mobile homes, which Jenson presents poetically in an observational, cinéma vérité style. He also uses interviews to provide a stream-of-consciousness narrative that introduces the main characters, tells their tales and articulates various critical topics regarding life in the Bakken.

James McClellan, age 13, moved to White Earth with his father in the summer. When the movie begins, he is not very happy. The film was shot in the winter when seasonal depression pervades the bleak landscape. During the day, he stays alone in a trailer while his father goes to work. James doesn’t attend school, instead dealing with isolation and boredom by playing
video games and engaging in target practice with his Ninja-style throwing stars. Not surprisingly, the teenager is a cynical character who provides the film’s most negative view of this new world of ice and oil.

Next we meet Leevi Meyer, 11 years of age, in her classroom at a public elementary school as her teacher leads a discussion about how the oil boom is affecting the students’ lives. Leevi grew up in White Earth and her entire family is from North Dakota. Jensen provides beautiful images of her agrarian life as she feeds horses and cares for the family’s chickens. Leevi says the best thing about her state is that it’s small and there are not many people. But the influx of new residents is changing that, and her parents don’t let her venture far from home because some new residents are “scary.”

After decades of demographic decline, North Dakota’s population increased by 15 percent to 739,482 from 2000 to 2014, according to the U.S. Census Bureau. Most new residents moved to western North Dakota because of jobs in the oil fields and related services. During the same period, the population in Mountrail County (White Earth) increased by 47.5 percent to 9,782 and in Williams County (Williston) by 62.5 percent to 32,130. These figures are considered to be very conservative by residents and local officials, reflecting the rapid and massive proliferation of man camps, for which there are no reliable tallies. In addition, employment is volatile in the Bakken, fluctuating by thousands of workers from week to week.

Elena Guadalupe Loaiza moved to White Earth from California with her daughter Flor and her husband when he got a job in the oil fields. Workdays...
begin at 4 a.m. when Elena sees her husband off, as Flor looks on, and then she goes to work for a janitorial service. Meanwhile Flor enjoys a happy childhood, adapting well to her new environment and making friends. Elena dreams that one day Flor will graduate from university, live a better life than her parents and never have to uproot her family.

While the stories of the characters are engaging, the film’s most impressive element is the cinematography. Jensen’s use of the contrast of light and dark, and especially his incorporation of methane flares in the oil fields, create striking images. The most pervasive visual technique involves placing flares behind oil rigs, trucks and other industrial equipment, allowing the red, orange and yellow glow to infuse the darkness. This creates a strange dawn or dusk effect as if on an alien planet, but this scenario has become the norm in the Bakken.

The Overnighters

“The Overnighters” is a feature-length film, directed by Jesse Moss, which won a Special Jury Award for Intuitive Filmmaking at the 2014 Sundance Film Festival. Like Jensen, Moss shoots in a cinéma vérité style, providing a mostly fly-on-the-wall chronicle of Pastor Jay Reinke as he tries to bridge the growing gap between Williston’s longtime residents and new arrivals. Moss, a California-based filmmaker, happened to read a column written by Reinke in the Williston Herald, appealing to the community to welcome the newcomers despite the rising crime rate.

The film begins with a brief retelling of the abduction and murder of Sherry Arnold, a high school math teacher, on the Montana side of the Bakken by two men from Colorado. This horrific story provided clear evidence to the residents of Williston, near where Arnold’s body was found, that their town was changing. The Williston Herald published stories on the growing crime rate, and fear of new arrivals increased as a result. Meanwhile, workers desperate for high-paying jobs continued to arrive in Williston where scant housing was available and rents were exorbitant. Many job seekers found themselves on the verge of homelessness. Looking for help, they turned to Concordia Lutheran Church. With little input from church members, Pastor Reinke started The Overnighters Program, offering temporary housing in the church and overnight parking to those in need.

“The Overnighters” is a wonderful example of nonfiction storytelling. The
twists and turns of human relationships are portrayed in convincing texture and complexity. Pastor Reinke’s response to the needs of workers is admirable, but he makes mistakes that lead to a series of intriguing conflicts. Many church neighbors are concerned for the safety of their families. In response, the city council acts to limit where workers can stay, which prevents migrant workers from sleeping in their cars in the church parking lot. Many Concordia members feel their church community is changing drastically for the worse and leave the congregation. Eventually local news media discover that Reinke has opened up his home to a migrant worker who is a registered sex offender. Pastor Reinke initiates damage control as he tries to protect his family, his faith community, the new arrivals and his job. A twist in the third act of the film leaves the audience with questions about Reinke, several overnighters and even the filmmaker, which linger as the credits roll.

In addition to Pastor Reinke’s story, Moss chronicles several people who have received help from The Overnighers Program. A young father from Wisconsin talks with his girlfriend and toddler via Skype in a temporary bedroom at Concordia. He struggles to find a job, a place to live and to stay connected to his family. Then there is a middle-aged unemployed man from the South who drove to Williston to support his family. He struggles to find immediate employment, like many others, and fears for the future.

The stylistic choice to tell a story in cinéma vérité style does create problems. When a filmmaker points his camera in a particular direction, he makes a conscious decision not to film something else. The audience follows a narrowly constructed story as a result. Filmmakers argue that this is necessary to provide the intimate details of the particular story they are telling. There is no narrator in pure cinéma vérité documentaries; no voice of authority that provides direction for the audience or reminds them of particular details. Without this voice, the audience is left to discern the facts as presented without context.

While this is an appealing idea for filmmakers, cinéma vérité can lead the audience to make large assumptions. For example, the town of Williston is not presented in the best light. Residents are seen as icy, leery of all outsiders. While some might be friendly to the new arrivals, most seem to want them to leave. The only place the audience sees anything that looks like a welcoming community is with Pastor Reinke and other migrant workers at Concordia Lutheran Church. This presentation of Williston might not be what Moss intended, but it does bolster the dramatic structure of the film as a battle between one man and his community.

The audience doesn’t hear the stories of families who have benefited from employment here. Nor are there any examples of how communities have gained positively by welcoming new residents. We do not see the efforts of the oil and gas industry being environmentally responsible.
Accurate Portrayals?

Humanistic stories, such as “White Earth” and “The Overnighers,” connect with audiences more successfully than films discussing technical or scientific subject matter. Poetic imagery and voices of the everyman have the power to impact audiences, but are these narrative elements used to portray North Dakota’s oil boom accurately? In some ways the answer is, yes. In both films, new oil wells are being drilled and job seekers continue to flood into the state. Families who have lived in the state for generations witness vast changes in their communities. The bitter cold of the North Dakota winter never changes. But in other ways, these films do not present an accurate image. The audience doesn’t hear the stories of families who have benefited from employment. Nor are there any examples of how communities have gained positively from welcoming new residents. We do not see the efforts of the oil and gas industry to be environmentally responsible.

These films present change in ominous shades, which film critics have described as “Steinbeckian.” In “The Overnighers,” down-and-out workers continue to struggle; some lose everything. Communities wrestle with the changes forced upon them. Many residents sell their homes and leave. Questions are posed but left unanswered. The beautiful images of the alien-like world of “White Earth” highlight the “stranger in a strange land” quality of newcomers to the Bakken, especially through the eyes of children. The unspoken enemy in both films is the oil industry, which is also seen as the only hope for the future.

“Come on people. Why should we just take all the beauty away from the landscape by putting up fires and making it smell horrible,” says James McClellan in “White Earth.” “All the guys want is money. But I don’t know what would happen if there was no oil fields. That’s the only job my dad ever worked in.”

While not directly political, both films support tighter regulations on the oil and gas industry in the name of environmentalism. Four years before, fracking made its feature documentary debut in Josh Fox’s “Gasland,” which is set up as a personal journey of discovery into the shale revolution from Pennsylvania to Colorado, Wyoming, Utah and Texas. Fox interviewed people who had experienced chronic health issues, allegedly connected to contamminates in the air and water in areas where drilling takes place. In one scene, made famous in the film’s trailer, a resident sets his tap water on fire.
The film was received positively, especially by environmental activists, and was nominated for an Academy Award for Best Documentary. “Gasland Part II” premiered at the 2013 Tribeca Film Festival.

“Gasland” also inspired director Phelim McAleer to make “FrackNation,” which addresses the misinformation about fracking presented in films such as “Gasland.” The New York Times praised “FrackNation” for its methodical research and for “underscor[ing] the sheer complexity of a process that offers a financial lifeline to struggling farmers.”

**Big Men: Everyone Wants to be Big**

It is rare to find a documentary film about the oil industry that treats all sides fairly. In “Big Men,” filmmaker Rachel Boynton achieves this as she examines the inner workings of a small American oil company trying to establish operations in Ghana in West Africa.

The media often present oil companies as intrinsically evil entities looking for the easiest way to make money. While money is a key concern for Kosmos Energy—a small Dallas-based oil company—Boynton allows us to see the human side of company executives through sit-down interviews and personal observational moments.

Boynton’s level of access is even more impressive when the film takes us to Ghana where we are privy to meetings between Kosmos executives and government officials, as they discuss the exploration and development of the Jubilee Oil Field, off Ghana’s Atlantic coast.

As well, Boynton and her film crew follow and film a group of rebels in neighboring Nigeria, who fought for a greater share of oil revenue for locals, most of whom live on less than a dollar a day. For Ghana’s future, this is a cautionary tale if its citizens don’t receive fair economic benefit.

The Nigerian rebels sabotaged pipelines in the mid-2000s. This was partly responsible for the spike in oil prices that created economically favorable conditions for the fracking boom in North Dakota.

“I don’t describe myself as a journalist or as objective, but I do promise to listen,” said Boynton in a telephone interview. “I practice an open way of seeing the world and don’t pass quick judgment. The film isn’t about political points but about how the world works. All the characters have the same desires regarding reputation, money and power—to become ’big men’—and go after this in different ways.”
North Dakota Film Omission

“The Overnighters” and “White Earth” tell powerful stories from the Bakken. One significant problem for North Dakotans is that both filmmakers come from elsewhere and then leave. Local viewers typically voice the same sense of disconnect from these films as when they read newspaper and magazine articles written by outsiders who “parachute” into the state and usually confirm their biases, rather than take the time and effort to understand the state’s history, culture and people.

North Dakota has little infrastructure designed to support a local film industry or develop homegrown filmmakers. Nor are incentives offered to filmmakers from here or elsewhere. Minnesota operates a Snowbate program, which offers a 20-percent rebate for in-state expenses and an additional five percent if filming is done outside the Twin Cities. This program recently attracted five feature films to the Minnesota. More aggressively, Canada has been building a strong film industry for decades. In Alberta, funding is available for 25 to 30 percent of total production costs and a labor-based tax credit of 45 to 55 percent. As a result, the first season of the TV series “Fargo,” which is set in Minnesota and North Dakota, was filmed mostly in Alberta.

Surely North Dakota would benefit culturally and economically from a robust film commission. This would inspire future generations of talented North Dakotan youngsters to consider—and become apprentices in—filmmaking as a career. Given the importance of the Bakken as the shale revolution’s epicenter, many stories will be told in various video formats for regional, national and international audiences. The question is whether there will be authentic North Dakotan voices among the storytellers.

Little Big Film on the Prairie

“Northern Lights” is one of the few full-length movies in recent decades both filmed on location in North Dakota and involving North Dakotans. The film, released in 1978, dramatizes the founding of the Nonpartisan League in North Dakota in 1915 as a populist expression of the anger and frustration small farmers felt at being exploited by out-of-state companies and banks. This political movement ultimately led to the founding of the Bank of North Dakota. “Northern Lights” was produced, directed, written and edited by John Hanson and Rob Nilsson. The film was awarded the Caméra d’Or at the 1980 Cannes Film Festival for best first feature film. Hanson was born in Minnesota and raised in McClusky, North Dakota. His documentary film, “Sisters” (2000), portrays Benedictine nuns facing the challenges of the modern world. The film aired on PBS.
Contributors

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The University of Mary is a private, co-educational Catholic university that welcomes students of all faiths and backgrounds. The university began as St. Alexis College of Nursing, which was founded by the Benedictine Sisters of Annunciation Monastery in 1915. Forty years later, St. Alexis became Mary College, a two-year women’s junior college, which in 1959 evolved into a four-year, degree-granting institution. Then in 1986, university status was achieved. The University of Mary has been accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools since 1969.

Since its beginning, the University of Mary has sought to respond to the needs of people in this region and beyond. Enrollment grew quickly from 69 students to more than 3,000 students today. The university offers 55 undergraduate majors, 14 master’s degree programs and three doctoral degrees. Classes are conducted at the main campus and other facilities in Bismarck; online; at satellite locations in Arizona, Montana, Kansas, Minnesota and North Dakota; and at campuses in Arequipa, Peru and Rome, Italy.

The University of Mary educates the whole student for a full life, characterized by moral courage and leadership in chosen professions and service to the community. Every aspect of academic and social life is infused with the Benedictine values of community, hospitality, moderation, prayer, respect for persons and service.

Already one of the most affordable, high-quality private universities in the nation, the University of Mary now offers “Year-Round Campus,” a unique college-career option that enables students to earn a bachelor’s degree in just 2.6 years and a master’s degree in four years. This greatly reduces costs and allows students to begin their careers much sooner. The University of Mary offers exceptional educational value, as well as outstanding scholarship and financial aid opportunities. Within six months of graduation, 95 percent of graduates are working or pursuing additional education.

Student athletes at the University of Mary participate in 17 varsity sports in NCAA Division II. *Go Marauders!*
On April 4, 1951, Amerada Corporation struck oil on Clarence Iverson’s farm, spurring an oil frenzy that has lasted over six decades throughout the Williston Basin. Western North Dakota accounts for more than a third of the Williston Basin. The Clarence Iverson No. 1 well produced 585,000 barrels of oil over 28 years.