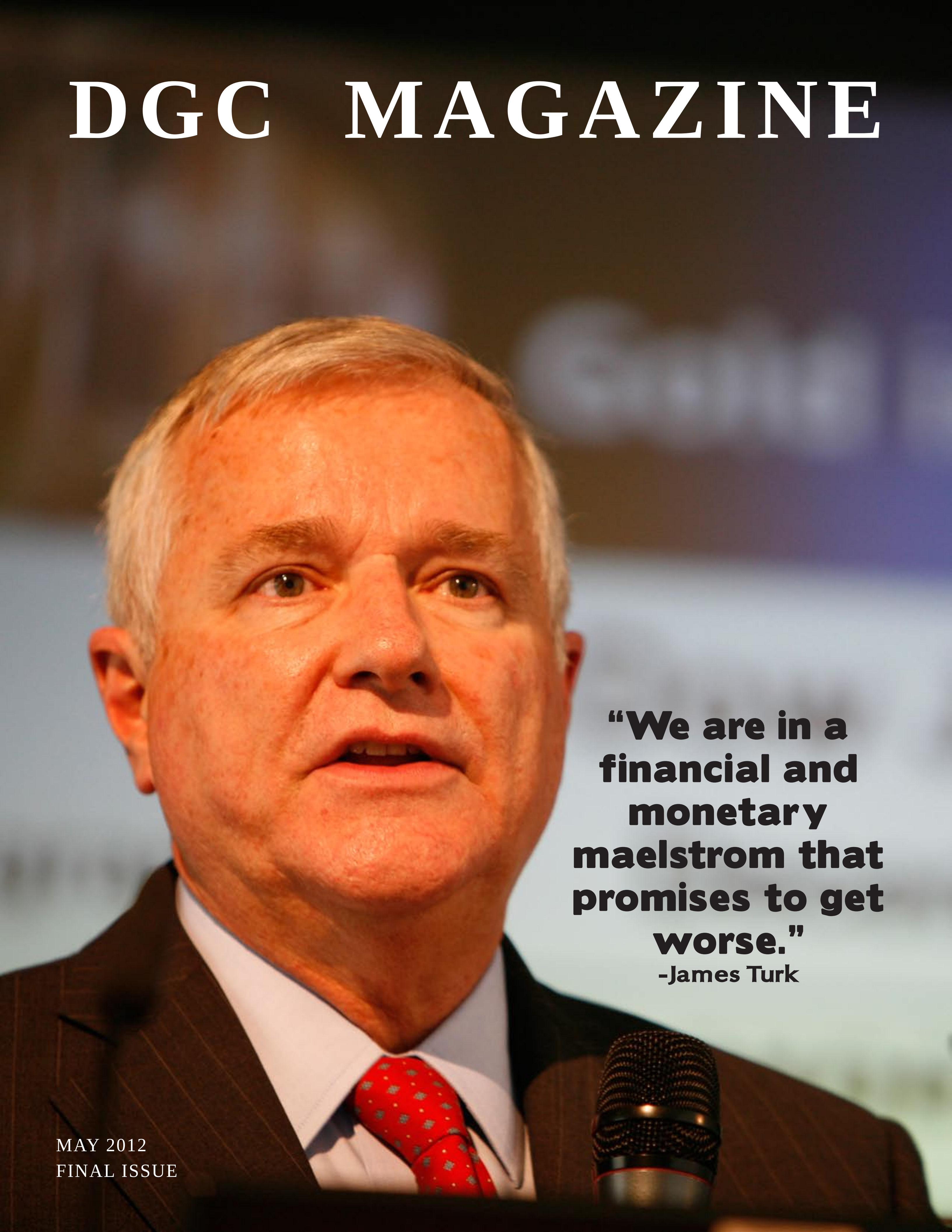
DGC MAGAZINE



"We are in a financial and monetary maelstrom that promises to get worse."
-James Turk

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FINAL ISSUE

DGC

Digital Gold Currency

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DGC Magazine was committed to expanding the legal use of digital gold currency around the world. Slowly, legally and ethically we tried to move digital gold currency and sound money forward into everyday business. We ran out of steam.

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THE MORAL CASE FOR DIGITAL GOLD CURRENCIES

BY PAUL ROSENBERG

People (like us) who work in new, unapproved ventures need to know that we are morally right to do so. It is not enough just to be practical... as valuable as that may be. We must also know that we are right. We need moral confidence.

So, I want to specify the reasons why digital currencies are morally superior to state currencies. Perhaps you can add your own, but I think this is a nice first list:

Theft, via dilution, is wrong: Digital gold currency's value cannot be stolen. Fiat currency can be printed indefinitely, diluting the value of all existing fiat, including the surplus production that people spent large portions of their lives gathering.

By inflating away the value of the savings held in currencies, large portions of people's lives are being stolen from them. The time energy they spent earning that surplus is taken away by dilution.

The owners and operators of fiat currencies steal life.

DGCs, on the other hand, do not lose their inherent value: Gold is always gold. Some major change in its value may occur in the future when gold asteroids are brought back to Earth, but until then, gold remains scarce. And even then, it will probably always be preferable, valuable stuff.

Surveillance is intimidation, and that is wrong: The vast majority of fiat currency transactions have been forced through banking systems where they are very carefully tied to individuals, tracked, and their exchanges recorded. On the other hand, many DGCs are already anonymous and the rest are headed in that direction.

Surveillance is designed to make us self-censor. Let's say you learn that your local government has behaved very badly and you think about protesting. But, you know that they have facial recognition technology, and you know that they have every email sent in their country for the past five years? Will you still act, knowing that that government can (with the push of a button) call-up all the emails you sent to your friends when you were depressed? Or every web site you ever surfed?

Surveillance negates free speech over time, and when nearly every financial transaction goes into a surveillance database, surveillance is inescapable. From the standpoint of a tyrant, a surveillance state is a perfect weapon: It chokes off all dissent before it can form, but leaves the rulers looking pristine. The enforcement mechanisms are fear and shame, and, being internal to all involved, they remain unseen, no matter how powerful their effects. This is, obviously, an argument in favor of privacy, which digital currencies provide.

DGCs cure theft: The modern crime of "identity theft" is a direct effect of forcing identities to be joined to currency transactions. Anonymous cash (either digital or physical) eliminates identity theft in a single stroke. Anonymity means there is no identity information to steal.

States world-wide are scrambling to eliminate physical cash so they can assert full control over every person on the planet. They are massively empowering criminals by doing so. (And they don't care.) Digital currencies give those criminals no tools to use and protect their users from identity theft.

DGCs broaden thinking: Individual fiat currencies hold complete dominance over fixed territories. The people affected by those dominations really believe that their paper is valuable. Most of them don't understand the fact that paper was supposed to be a receipt for actual value. Once people start using other currencies, and hopefully actual metal, their thinking changes and the near-hypnotic assumptions of the dominating culture of that geography begin to fade. The truth sets men free.

DGCs do not empower an arrogant elite: In other words, DGCs are not monopolistic.

Fiat currencies are enforced monopolies. Only a very few, state-authorized people are allowed to create the currency. All the institutions that distribute it are carefully and harshly regulated by these small, elite groups. Try to imagine what happens to a group of people that literally gets to create money from nothing, and is also protected from competition. Then add the fact that they know in advance when interest rates will rise and fall... because they make the decisions. That is an absolute recipe for arrogance and abuse.

DGCs, on the other hand, can enforce no monopoly. If one DGC provider got arrogant and abusive, it would only create space for other currencies to take away their customers. DGCs are honest; fiat currency is abusive in the extreme.

IN SHORT...
In short, DGCs are honest money. They store real value and trade freely, as their users – productive human beings – wish to trade them.

Fiat, on the other hand, exhibits multifaceted dishonesty. It has become the number one tool of manipulators, intimidators and deceivers world-wide. It is one of the primary evil forces on the planet.

DGCs are ethically better than fiat... by a huge margin.

We are not worthy of suspicion and mistrust – the priests of fiat are.

Our products are, by their very nature, far, far better than theirs. Ours are designed to be honest and useful; theirs are designed for thuggery and theft.

Our way is morally superior.

IN JAMES WE TRUST

2012
Interview with
GoldMoney’s
Mr. James Turk

Q. How vital is financial transparency for GoldMoney's business model?

Turk: It is essential in my view. Our aim has always been to provide our customers with assurances about GoldMoney's integrity, so that they know their precious metals are safe. Transparency is one way to help us achieve that important objective, and is therefore an important part of our industry-leading governance.

Q. Regarding the GoldMoney Standard and what is referred to as a "Digital Hallmark" why do you feel it is important to use the ultrasound scanning technology on each large gold bar you store?

Turk: Again, it goes back to our basic aim, which is to let our customers know that their precious metals are safe. So we will consider anything that we can practically do to achieve that aim. A couple of years ago, some customers expressed concern about the rumors they were hearing about foreign material in some gold bars. So to allay those concerns, we looked into what we could do and eventually learned that ultrasound scanning can determine whether or not a bar is pure gold. So we scanned all gold bars in GoldMoney back then, to make sure they were pure good. Several old bars needed to be refined, but all of them contained the gold they were said to contain. All gold bars now entered into GoldMoney are scanned to make sure they are pure gold. This scanning is part of the GoldMoney Standard. It is a standard that provides assurances of integrity.

Q. What educational initiatives is the GoldMoney Foundation currently promoting?

Turk: We just published the Spanish translation of Ferdinand Lips' wonderful book, Gold Wars. That is the latest initiative, but we are active in three areas: publishing important out-of-print books or translating them into languages that make them available to a wider audience; posting articles, videos and podcasts on the GoldMoney Foundation website (www.goldmoneyfoundation.org); and both Alasdair Macleod and I often speak at conferences aimed to promote a greater understanding about the role of gold and silver as currency and their importance to society in that role.

Q. Has the GoldMoney mobile application caught on with your customers? Is it popular?

Turk: It's proving popular. We have around 5,000 users with a lot of positive feedback. The number of users is increasing, and I expect its popularity to continue growing as we develop more app features.

Q. "Bullion held with GoldMoney is not subject to counter-party risk." Can you briefly explain to our readers what this means and why this statement is SO IMPORTANT in today's financial world?

Turk: Yes, it is indeed important. It means that you own the precious metals that you are storing with GoldMoney. Those metals really exist, and you are not relying upon GoldMoney's financial strength, which contrasts to when you have metals deposited in a bank or broker's "metal account". So your physical metals in GoldMoney are not at risk.

Q. Last night during the nightly news, 3/27/12, I saw an ABC news interview and report with Ben Bernanke. Inside the Federal Reserve Bank building, Diane Sawyer walked around with Mr. Bernanke, toured the office area and basically talked about how he saved the world. With all the money which has been created out of thin air, almost $16 Trillion in US debt now and interest rates held artificially low, at almost zero, did Bernanke save the US from anything or did he just prolong the agony?

Turk: As the saying goes, he simply "kicked the can down the road". He bought more time, but the problem really is not his to solve. Only Congress and the President can do that. They must get spending and borrowing under control, but the prospects for that to happen look slim.

Q. You made the statement last year, that the US had passed the "Havenstein moment". With no austerity measures presently even being considered in the US, is America headed for guaranteed hyperinflation?

Turk: Yes, that's right. The name comes from Dr. Havenstein, who headed the German central bank during its destructive hyperinflation in the 1920's. Though he didn't call it "quantitative easing", that is what he was doing. He thought that by giving the

German government all the currency it needed to meet its spending aspirations, the German economy would be revived after World War I. Obviously, it didn't work, but today's central bankers are ignoring the lesson that should have been learned.

Q. Regarding GoldMoney's pension products for the UK & the USA:
- **the Active Money SIPP from Standard Life**
- **the gold pensions with Berkeley Burke**
- **the IRAs with Entrust Group in the US**

Have these products become popular with your customers?

Yes, they have, which is not surprising. Gold and silver are important assets to own when thinking about the future, and particularly the long-term future because the precious metals preserve purchasing power. So it is natural for them to play a role in pension plans.

Q. When I interviewed you in late 2009, you said that the biggest growth in GoldMoney's customer base had come from the UK. Is that still true today? In what countries is GoldMoney most popular?

Turk: We have customers from all over the world, and accept applications from people resident in any one of 105 countries. Most of our customers live in North America and Europe.

Q. I presently live in the US, can I still have 100gm gold bars delivered from my GoldMoney account?

Turk: Indeed you can. Even though we are a European company with out head office in Jersey, one of the British Channel Islands, we can deliver gold to you in the US. Gold owners can take delivery of 100-gram and 1-kilogram (1,000 gram) gold bars that are produced by Baird & Co. of London. If you have enough gold in your Holding, you also have the option of registering or even taking delivery of 400oz London Bullion Market Association Good Delivery gold bars. You can also take physical delivery of silver, providing that you own at least 30,000 ounces of silver, which is one pallet of thirty 1,000-ounce bars.

Converting goldgrams into a 100-gram bar costs 4% of its fine weight, which is a cost of 104 goldgrams for a 100-gram bar. These can be shipped to you (you will need to pay the shipping cost) or you can pick these up from the refinery in London, though obviously this latter option isn't practical for our American customers unless they are planning to visit the UK.

Q. In our 2009 DGC Magazine interview you had this to say, "...not only is Mr. Bernanke not going to save the economy [US] but he will probably end up destroying the dollar." Has the economic situation in the US gotten better or worse since 2009?

Turk: Clearly, it is worse. The mountain of debt has grown, while the economy and employment show few signs of improvement. But as I just mentioned, attention should be focused on Congress and the President. They are the ones that need to stop the reckless spending and borrowing that has been the centerpiece of US policy now for too many years.

Q. If a GoldMoney account holder came in with a new very substantial order in the hundreds of millions of USD or even a billion, could GoldMoney fill this size order? Where do you get these huge amounts of physical gold?

Turk: Yes, we certainly can process large orders, though they might take longer to settle than smaller ones (smaller orders in this context being less than $US10 million). GoldMoney deals exclusively in the physical bullion markets with a variety of dealers, so there will always be bidders for metal customers who wish to sell, and sellers for those customers eager to buy. Bringing supply and demand into equilibrium is after all what the price discovery process is all about.

For really large orders, GoldMoney obtains its supply generally from a bullion bank instead of refiners, as the latter don't have enough metal on hand to meet such demands.

Once we receive word from the bullion bank confirming the feasibility of the trade, we then give the customer a final settlement date. This date depends on which one of our vaults he or she has nominated for delivery. Given that there are more sources for physical metal in London and Zurich, it is be quicker to deliver to the vaults in these two cities. Transferring the metal to the Hong Kong vaults can take a few days.

Q. Where does the The Pan Asia Gold Exchange

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goldmoney.com

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http://www.goldmoney.com

(PAGE) stand today?

Turk: Like many good ideas, it is unfortunately dead in the water. There is some effort, I understand, to revive it, but I don't know the status of this new effort.

Q. I just read the GoldMoney monthly total value report, which is a public monthly report, available from the web site, of customer's metal and currencies. I see that GoldMoney is holding over 27,000,000 ounces of silver. That amount is up substantially in the past few years. Can you share with us if you are seeing a trend in customers selling gold to buy silver or is it more accurate to say that investors are buying silver in addition to their other holdings?

Turk: Silver has been very popular with our customers since GoldMoney introduced it in 2006. The gold/silver ratio, i.e., the gold price divided by the silver price is currently around 52, but I expect it to drop below 20 in the years ahead, thereby returning close to its historical norm of 16.

There have been times during the last few years when silver has been more popular with our customers than gold. But then there have been other periods, such as late 2008 and the summer and autumn of last year, when gold buying was more prevalent. Over the past several months there's actually been a slight preference for gold over silver, but your last point sums it up best: people are buying silver in addition to gold, platinum and palladium. Holdings of all the metals are increasing.

Q. The Chinese regional exchange is setting up to trade silver priced in RMB. When this kicks off, do you see it as a market factor for silver priced in dollars or will this trading also just be papered over with leveraged COMEX silver?

Turk: It is impossible to predict as this stage. As far as I am aware, the exact terms on which trading will be allowed have not been posted. So until these are available, and until we see how the rules are being implemented, one can only guess as to what will happen.

As silver short positions rise, the CFTC once again sticks it's head in the sand...will silver ever honestly trade?

Turk: We are in a financial and monetary maelstrom that promises to get worse. Consequently, what's important here is not the price of silver or the price of gold; it is whether you own any.

Q. What must happen for silver to be honestly priced?

Turk: By honestly, I assume you mean a price that does not reflect the fractional reserve nature by which silver, and gold too for that matter, are now being traded. There is no doubt that the price of physical silver is influenced – and at times heavily influenced – by what happens in the market for paper-silver. But as long as people are willing to accept and trade paper-silver, its influence will be felt on the market for physical silver.

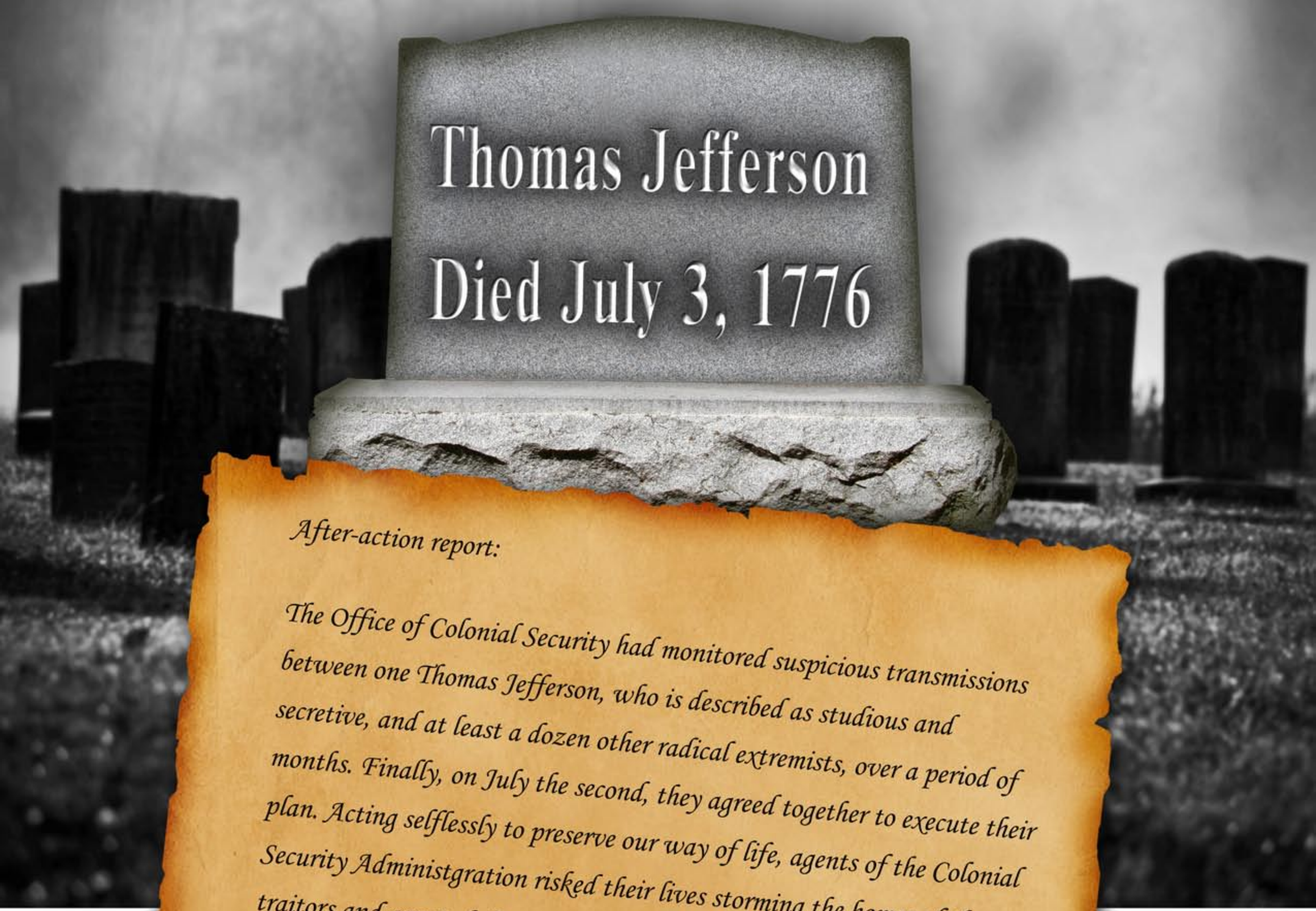
Q. The Dow Jones Industrial Average just passed the 13,000 level on it's way to 14,000 (most would say). If we were to price the Dow in gold, is it breaking new highs, holding steady or actually moving lower?

Turk: Priced in gold, the Dow has been moving steadily lower since the peak of the last equity bull market in early 2000. Back then, the Dow/Gold ratio – or the number of ounces of gold needed to "buy" one share of the Dow – stood at around 42; today, it's down to 7, which just shows how extreme the depreciation in stocks has been relative to gold. Likewise, the Dow/Silver ratio was over 2,580 in early 2000. Today it's at 405. So priced in gold and silver the Dow has lost over 80% during the last decade. I fully expect that over the next few years, the Dow/Gold ratio will fall to 1, or perhaps even lower.

Q. In the 1980's you developed an economic tool or indicator called the Fear Index. Can you tell us how this indicator has been performing the past 6 months and what that tool indicates is happening right now?

Turk: The Fear Index is a ratio that compares the market value of the US gold reserves against M3 estimates – M3 being the most popular and widely recognized broad US money supply measure. The value of the US gold reserve in dollar terms is divided by monthly M3 to give the Fear Index number. The higher the number, the greater the fear, as it signals gold is gaining in value relative to credit, or in other words, money backed by

If George III Had Internet Surveillance:



After-action report:

The Office of Colonial Security had monitored suspicious transmissions between one Thomas Jefferson, who is described as studious and secretive, and at least a dozen other radical extremists, over a period of months. Finally, on July the second, they agreed together to execute their plan. Acting selflessly to preserve our way of life, agents of the Colonial Security Administgration risked their lives storming the homes of the traitors and arrested them. However, the author of their extremist manifesto, Jefferson, after apparently setting his home afire with oil lamps, died in the resulting conflagration. All known copies of the manifesto were destroyed in the above-mentioned actions.

Privacy is a tragic thing to lose.

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promises instead of gold.

The Fear Index has been in a long-term uptrend for several years. It has been moving higher since last summer, which isn't surprising given all the economic problems that have been in the news since then – whether it be the talk about a US debt default or the problems in the eurozone. Given that the US dollar is heading toward hyperinflation, while Europe's woes remain far from over – and with growing talk of serious problems in China and Japan – I can't see the Fear Index going anywhere but higher, continuing its long-term uptrend.

Q. In an interview this week, referring to SWIFT, Jim Sinclair told King World News that, "... the U.S. government's use of the international payments system as a weapon of war is likely to prompt the remonetization of gold throughout the world outside the American empire."(1) (2) Are we already seeing this type of move in some countries such as Turkey?

Turk: Gold is already the preferred currency for important transactions, such as buying real estate, in countries like Vietnam, and Turkey too, but to a lesser extent. As the problems with the dollar worsen, the use of gold as currency will no doubt increase, particularly in those parts of the world – like Asia and the Middle East – where it is commonly understood that gold is money.

Q. Gold, silver, precious metals and commodities are good places to store value and savings during inflationary times. I talk to people I meet all the time about owning gold & silver, generally, they look at me like I'm a crazy man with my hair on fire! I was speaking with an older man who is an acquaintance of mine with about $1.5 million USD in stocks. His entire life saving is on the line in these stocks and he was investing for growth through S&P 500 stocks. I mentioned that gold was a good place to be right now and he lectured me about how much the "stock market" had been up in the past year and how well his stocks had been doing. Did everyone drink the Kool-Aid? What's it going to take for the 300 million working Americans to sober up and realize how badly they are being cheated and what's happening to them?

Turk: Maybe $5 a gallon gasoline will wake up some people, but I don't really know how many. But there is a more important point here. Each day more and more people are beginning to understand that the precious metal are in a major bull market, and that their prices seem destined to go higher. But more importantly, come what may, owning physical gold and some physical silver too makes good sense to protect one's wealth from an uncertain future.

Q. Why don't more people see the writing on the wall?

Turk: Because of a combination of wishful thinking, national chauvinism, and because humans always erroneously assume that the big features of political economy that have held in the immediate past will continue to hold true in the future. 100 years ago no doubt you would have been given strange looks for predicting that in a century's time, Brazil and China would have larger economies than Great Britain, and that over the same period sterling would lose more than 95% of its purchasing power. Who would have predicted even 20 years ago the huge strides made in Internet development, and how this would change our social lives and work habits?

As far as America is concerned, many people assume that somehow it's a special case as far as debt, deficits and inflation are concerned, and that the economic laws that apply to, say, Argentina, Italy or Zimbabwe don't apply in Washington. But they do. This time is never different.

Regarding gold and its virtues as money, probably 95% of academic economists are vehemently opposed to any such notion. Governments don't like gold because it places limits on their spending, and the media's attitude reflects the dominant economic fashions of the day – in our case, Monetarism and Keynesianism, both of which disparage gold.

There's also this notion that gold is somehow old-fashioned and irrelevant to modern economies. I interviewed James Grant last year and he had a great line about how people view nostalgia for the gold standard as comparable with nostalgia for dysentery. So it's no surprise that amid all this, the average guy on the street may not see the writing on the wall.

Of course, more and more people are slowly recognizing that as far as most of major economies are concerned "the emperor has no clothes". They are also awakening to precious metals' wealth preserving virtues, as we at GoldMoney can see from our steadily increasing number of customers.

Q. GoldMoney has recently withdraw from the payments side of the business, except in it's home jurisdiction of Jersey. You are the creator, designer, inventor of digital gold currency. GoldMoney has been awarded 4 patents so far as the inventor of digital gold currency. After all these years, was it hard to move away from that part of your business model? Do you foresee a time when GoldMoney may return payments made in gold?

Turk: Yes, for me personally it was a disappointment to have seen this payments facility withdrawn. Our decision to turn it off in all countries except Jersey is based on lack of customer demand and increasing regulatory burdens. It is our intention to offer this service again in the future, but this will depend on customer feedback and regulatory changes.

Q. In April of 2011, just about a year ago, GoldMoney had a very nice milestone by surpassing US$2 billion of customer assets in storage. Congratulations. This might seem like a strange question but in your business plan, is there any upside limit or maximum amount that GoldMoney could hold? Right now you have more precious metal than many countries, the UK included. Is US$200 billion, or even US$1 Trillion too much? Is there such a thing as too much?

Turk: The sky's the limit. What people tend to forget about precious metals is that the money value we attach to them is as much a reflection of the value of currency as it is a statement about the value of gold, silver, platinum or palladium. So at the moment, GoldMoney stores a little over $1 billion's worth of gold, but if the gold price doubled over the next year then this same weight of gold would be worth over $2 billion. So the question shouldn't be "how high can gold go?" But rather, "how low can the dollar go?" And the same logic applies to other fiat currencies too. I expect hyperinflation in America, which means that we could be talking about trillions-worth of customer metal in the not-too-distant future.

"Paper money has had the effect in your state that it will ever have - to ruin commerce, oppress the honest, and open the door to every species of fraud and injustice."

George Washington

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Some of the advantages of having gold "in digital form" are the ability of paying with it, the ability of seeing the balance at any time, while also seeing what that balance is currently equivalent to in terms of fiat currency value.

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YANDEX.MONEY LAUNCHES DEBIT CARD

MOSCOW, April 17, 2012 (GLOBE NEWSWIRE) -- Yandex (Nasdaq:YNDX) today announced the launch of Yandex.Money cards for its customers. Users of Yandex.Money, the largest electronic payment system in Russia, can obtain a free MasterCard debit card tied to their Yandex.Money account to make payments both online and offline using funds in their account.

The Yandex.Money card is accepted worldwide. Holders of the card can pay in stores, restaurants and anywhere else where MasterCard is accepted. Using the Yandex.Money card is especially convenient while travelling, as it allows its owner to use only the money on their Yandex.Money account and leave their other cards at home. Additionally, customers who receive money in their Yandex.Money accounts are no longer limited to spending these funds on internet purchases alone. Authenticated Yandex. Money customers can now withdraw cash from ATMs using a PIN that is available upon request.

“Yandex.Money now takes a leap from the internet to the offline world. Instead of carrying cash in your wallet, you can now have a Yandex.Money card to do your shopping offline as safely as you do it online. Yandex.Money is a convenient way to pay anywhere you go,” says Natalia Khaitina, deputy CEO of Yandex.Money.

The Yandex.Money card is issued for a three-year period with no service or transaction fees, other than a cash withdrawal fee of 3% plus 15 rubles. Users can easily track their transactions at the Yandex. Money
website or via text alerts.

The debit card is available to any Yandex.Money customer anywhere in the world and can be ordered at the Yandex.Money website. It will be sent as a special delivery. The Yandex.Money card is issued by the
company’s partner bank, Tinkoff Credit Systems.

About Yandex.Money

Yandex.Money is the largest electronic payment system in Russia offering easy, safe and reliable methods of paying for purchases online. As of early 2012, the system had over 9 million accounts. The platform handles more than 9,000 new accounts that are added daily and more than 100,000 customer payments for products and services.

Yandex.Money is accepted in more than 3,500 online stores.

About Yandex

Yandex (Nasdaq:YNDX) is the leading internet company in Russia, operating the country’s most popular search engine and most visited website. Yandex also operates in Ukraine, Kazakhstan, Belarus and Turkey. Yandex’s mission is to answer any question internet users may have.

The Yandex Company logo is available at
http://www.globenewswire.com/newsroom/prs/?pkgid=10933

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THE FUTURE OF ELECTRONIC CURRENCY

MATTHEW GREEN

Crypto is fantastic for many things, but those who read this blog know that I have a particular fascination for its *privacy* applications. Specifically, what interests me are the ways we can use cryptography to transact (securely) online, without revealing what we're doing, or who we're doing it with.

This is particularly relevant, since today we're in the middle of an unprecedented social and technological experiment: moving our entire economy out of metal and paper and into the 'net. I've already had to explain to my four-year old what newspapers are; I imagine he'll have a similarly experience when *his* children ask why people once carried funny pieces of paper around in their wallet.

Between credit and debit cards, EFT, online banking and NFC, it seems like the days of cash are numbered. Unfortunately, all is not sunshine and roses. The combination of easy-to-search electronic records and big data seems like a death-knell for our individual privacy. Cryptography holds the promise to get some of that privacy back, *if we* want it.

In this post I'm going to take a very quick look at a few privacy-preserving 'e-cash' technologies that might help us do just that. (And yes, I'll also talk about Bitcoin.)

Why don't we have electronic cash today?

The simple answer is that we *already have electronic money*; we just don't call it that. Right now in its mainstream incarnation, it takes the form of little plastic cards that we carry around in our wallets. If you live in a developed nation and aren't too particular about tipping valets, you can pretty much survive without ever touching hard currency.

The problem is that credit and debit cards are not *cash*. They're very good for money transfers, but they have two specific limitations: first, they require you to access an online payment network. This means that they lose their usefulness at exactly the moment when you need them most: typically, after a disaster has wiped out or severely limited your connectivity (e.g., most hurricanes in Florida, NYC the morning after 9/11, etc).

Secondly, funds transfer systems offer none of the *privacy* advantages of real cash. This is probably by (government) preference: untraceable cash lends itself to unsavory activities, stuff like drug dealing, arms purchases and tax evasion. Our modern banking system doesn't necessarily stop these activities, but it's a godsend for law enforcement: just about every transaction can be traced down to the $0.01. (And even if you aren't a drug dealer, there are still plenty of folks who'll pay good money for a copy of your spending history, just so they can sell you stuff.)

The genesis of private e-cash

Credit for the invention of true, privacy-preserving electronic cash generally goes to David Chaum. Chaum proposed his ideas in a series of papers throughout the 1980s, then made a fortune providing the world with untraceable electronic cash.

Well, actually, the statement above is not quite accurate. According to legend, Chaum turned down lucrative offers from major credit card companies in favor of starting his own e-cash venture. I don't need to tell you how the story ends -- you've probably already noticed that your wallet isn't full of untraceable electronic dollars (and if it is: I'm sorry.)

There's an important lesson here, which is that getting people to adopt electronic cash requires a lot more than just technology. Fortunately, the failure of e-cash has a silver lining, at least for the field of cryptography: Chaum went on to pioneer anonymous electronic voting and a whole mess of other useful stuff.

Like many e-cash systems since, Chaum's earliest paper on the e-cash proposed to use digital 'coins', each of some fixed denomination (say, $1). A coin was simply a unique serial number, generated by the holder and digitally signed using a private key known only to the bank. When a user 'spends' a coin, the merchant can verify the signature and 'deposit' the coin with the bank -- which will reject any coin that's already been spent.

(Of course, this doesn't prevent the merchant from re-spending your hard earned money. To deal with this, the user can replace that serial number with a freshly-generated public key for a signature scheme. The bank will sign the public key, then the user can provide the merchant with the public key -- signed by the bank -- and use the corresponding signing key to sign the merchant's name and transaction info.)

However you do it, the system as described has a crucial missing element: it's not private. The bank knows which serial numbers it signs for you, and also knows where they're being spent. This provides a linkage between you and, say, that anarchist bookstore where you're blowing your cash.

To address this, Chaum replaced the signing process with a novel blind signature protocol. Blind signature is exactly what it sounds like: a way for the bank to sign a message without actually seeing it. Using this technology, the user could make up a serial number and *not* tell the bank; the blind signature protocol would provide the necessary signature. Even if the bank was trying to track the coins, it wouldn't be able to link them to the user.

Chaum even provided a nice real-world analogy for his idea: place a document inside of an element along with a sheet of carbon paper, then let the bank sign the outside of the envelope, conveying the signature through and onto the document. This doesn't literally describe how blind signatures work, but the real cryptographic constructions aren't that much worse: you can readily obtain blind versions of RSA, DSA and the Schnorr/Elgamal signatures without (mostly) breaking a sweat (see this footnote for details).

The double-spending problem and going offline

Digital signatures do one thing very well: they prevents unauthorized users from issuing their own coins. Unfortunately they don't prevent a second serious problem: users who *copy* legitimate coins.

Copying is where electronic cash really differs from its physical equivalent. Real money is hard to copy -- by design. If it wasn't, we wouldn't use it. When people get too clever at copying it, we even send men with guns to shut them down.

Electronic coins are very different. It's almost impossible to work with data without copying it; from long-term storage to RAM, from RAM to the processor cache, from one computer to another over a network. Electronic coins *must* be copied, and this fundamentally changes the nature of the problem. The boogeyman here is '*double spending*', where a user tries to spend the same valid coin with many different merchants. Left unchecked, double-sending does more than screw over a merchant. It can totally debase the currency supply, making coins almost impossible for merchants to trust.

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Chaum's original solution dealt with double-spenders by requiring the bank to be *online*, so users could immediately deposit their coins -- and make sure they were fresh. This works great, but it's damn hard to handle in a system that works *offline*, i.e., without a live network connection. Indeed, offline spending is the big problem that most e-cash solutions have tried to tackle.

There are two basic solutions to the offline problem. Neither is perfect. They are:

- **Use trusted hardware.** Force users to store their coins inside of some piece of bank-trusted (and tamper-resistant) piece of hardware such as a cryptographic smartcard. The hardware can enforce correct behavior, and prevent users from learning the actual coin values.
- **Revoke double-spenders' anonymity.** Alternatively, it's possible to build e-cash systems that retain the users' anonymity when they participate honestly, but immediately *revokes* their anonymity when they cheat (i.e., double-spend the same coin).

Although these solutions are elegant, they also kind of suck. This is because neither is really sufficient to deal with the magnitude of the double-spending problem.

To understand what I'm talking about, consider the following scam: I withdraw $10,000 from the bank, then spend each of my coins with 1,000 different offline merchants. At the end of the day, I've potentially walked away with $10,000,000 in merchandise (assuming it's portable) before anyone realizes what I've done. That's a lot of dough for a single scam.

In fact, it's enough dough that it would justify some serious investment in hardware reverse-engineering, which makes it hard to find cost-effective hardware that's sufficient to handle the threat. Finding the owner of the coin isn't much of a deterrent either -- most likely you'll just find some guy in Illinois who had his wallet stolen.

That doesn't mean these approaches are useless: in fact, they're very useful in certain circumstances, particularly if used in combination with an online bank. Moreover the problem of revealing a user's identity (on double-spend) is an interesting one. There are several schemes that do this, including one by Chaum, Fiat and Naor, and a later (very elegant) scheme by Stefan Brands. (For a bit more about these schemes, see this footnote.)

Compact wallets and beyond

There have been quite a few developments over the past few years, but none are as dramatic as the original schemes. Still, they're pretty cool.

One scheme that deserves a few words is the 'Compact e-Cash' system of Camenisch, Hohenberger and Lysyanskaya. This system is nice because users can store millions of e-coins in a relatively small format, but also because it uses lots of neat crypto -- including signatures with efficient protocols and zero-knowledge proofs.

At a very high level, when a user withdraws *n* coins from the bank in this system, the bank provides the user with a digital signature on the following values: the user's public key, the number of coins *n* withdrawn, and a secret seed value seed that's generated cooperatively by the bank and the user.

The bank learns the number of coins and user's public key, but only the user learns *seed*. To spend the *i*th coin in the wallet, the user generates a 'serial number' SN = F(seed, i), where F is some pseudo-random function. The user also provides a non-interactive zero-knowledge proof that (a) $0 < i < n$, (b) SN is correctly formed, and (c) she has a signature on seed from the bank (among other things). This zero-knowledge proof is a beautiful thing, because it does not leak any information *beyond* these statements, and can't even be linked back to the user's key in the event that she loses it. The online bank records each serial number it sees, ensuring that no coin will ever be spent twice.

This may seem pretty complicated, but the basic lesson is that we can do lots of neat things with these technologies. We can even build coins that can be spent *k* times for some arbitrary *k*, only revealing your identity if they're used more times

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than that; this turns out to be useful anonymous login applications, where users want to access a resource a fixed number of times, but don't want anyone counting their accesses.

Unfortunately, we haven't managed to build any of this stuff and deploy it in a practical setting.

Bitcoin

Which brings us to the one *widely-deployed, practical* electronic cash system in the world today. What about Bitcoin?

I'm a big fan of Bitcoin (from a technical perspective), but it has a few limitations that make Bitcoins a little bit less private than real e-cash should be.

Despite the name, Bitcoin doesn't really deal with 'coins': it's actually a *transaction* network. Users generate blocks of a certain value then transfer quantities of currency using ECDSA public keys as identifiers. The core innovation in Bitcoin is a distributed public bulletin-board (the 'block-chain') that records every transaction in Bitcoin's history. This history lets you check that any given chunk of currency has a valid pedigree.

While the Bitcoin block-chain is essential to security, it's also Bitcoin's privacy achilles heel. Since every transaction is public -- and widely disseminated -- there's no hiding that it took place. To make up for this, Bitcoin offers *pseudonymity*: your public key isn't tied to your identity in any way, and indeed, you can make as many of them as you want. You can even transfer your coins from one key to another.

Now, I'm not really complaining about this. But it should be noted that *pseudonymity* is to *anonymity* what sugar-free chocolates are to the real thing. While I ~~don't know of anyone who's actively looking to de-anonymize Bitcoin transactions~~ *(scratch that, Zooko points out that some people are)*, there has been plenty of work on extracting (or 're-identifying') pseudonymized data sets. If you don't believe me, see this work by Narayanan and Shamtikov on de-anonymizing social network data, or this one that does the same thing for the Netflix prize dataset. And those are just two of many examples.

Many knowledgable Bitcoin users know this, and some have even developed Bitcoin 'mixers' that stir up large pools of Bitcoin from different users, in the hopes that this will obfuscate the transaction history. This sounds promising, but has a lot of problems -- starting with the fact that none few seem to be actually online as I write this post.* Even if one was available, you'd basically be placing your privacy trust into the hands of one party who could totally screw you. (A large, distributed system like Tor could do the job, but none seems to be on the horizon). Finally, you'd need a lot of transaction volume to stay safe.

At the same time, it seems difficult to shoehorn the e-cash techniques from the previous sections into Bitcoin, because those systems rely on a centralized bank, and also assume that coins are used only once. Bitcoin has no center, and coins are used over and over again forever as they move from user to user. Any anonymous coin solution would have to break this linkage, which seems fundamentally at odds with the Bitcoin design. (Of course that doesn't mean it isn't possible! ;)**

In summary

This has hardly been an exhaustive summary of how e-cash works, but hopefully it gives you a flavor of the problem, along with a few pointers for further reading.

I should say that *I* don't live the most interesting life, and about the only embarrassing thing you'll see on my credit cards is the amount of money we waste on Diet Coke (which is totally sick). Still, this isn't about me. As our society moves away from dirty, messy cash and into clean -- and traceable -- electronic transactions, I really do worry that we're losing something important. Something fundamental.

This isn't about avoiding marketers, or making it easier for people to have affairs. Privacy is something humans value instinctively *even when we don't have that much to hide*. It's the reason we have curtains on our windows. We may let go of

our privacy today when we don't realize what we're losing, but at some point we will realize the costs of this convenience. The only question is when that will be, and what we'll do about it when the day comes.

Notes:

* I was wrong about this: a commenter points out that Bitcoin Fog is up and running as a Tor hidden service. I've never tried this, so I don't know how well it works. My conclusion still stands: mixing works well *if* you trust the BF operators and there's enough transaction volume to truly mix your spending. We shouldn't have to trust anyone.

** Some people have tried though: for example, OpenCoin tries to add Chaum-style cash to Bitcoin. Ditto Open Transactions. From what I can tell, these protocols still do Chaumian cash 'old style': that is, they require a trusted 'bank', or 'issuer' and don't actually integrate into the distributed trust framework of Bitcoin. Still very nice work. *h/t* commenters and Stephen Gornick (who also fixed a few typos).

http://blog.cryptographyengineering.com/2012/05/future-of-electronic-currency.html

Matthew Green is a cryptographer and research professor at Johns Hopkins University. By day I work on the design and analysis of cryptographic systems used in wireless networks, payment card systems, and digital content protection. In my research, I look at the various ways cryptography can be used to promote user privacy.

MISSOURI SOUND MONEY BILL PASSED HOUSE

April 19, 2012

The House passed a bill that would seek to allow for Missouri to use gold and silver currency. The bill was originally defeated by a vote of 81 to 42 due to a low attendance on the House floor. Majority Leader Tim Jones then adjourned and called on Democratic Imperial Representative Tim Meadows to reconsider the bill.

He agreed and the bill was then approved by a vote of 95 to 37.

Republican Pacific Representative Paul Curtman sponsors the bill. He says the bill would help with inflation. Opponents of the bill say it is unconstitutional. Jackson County Democratic Representative Mike Talboy says it's embarrassing.

The bill now moves to the Senate.

Jackson County Democratic Representative Mike Talboy says it's unlikely the bill will pass in the Senate.

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"Of liberty I would say that, in the whole plenitude of its extent, it is unobstructed action according to our will. But rightful liberty is unobstructed action according to our will within limits drawn around us by the equal rights of others. I do not add 'within the limits of the law,' because law is often but the tyrant's will, and always so when it violates the right of an individual." Number ONE Enemy of the State

NUMBER ONE ENEMY OF THE STATE

http://batr.org/view/050612.html

There is immense confusion about the nature of the State. There is even more bewilderment about what constitutes a patriot. Any discussion in the civic realm begins with a cultural viewpoint. An attitude toward the proper role of the individual's relationship with government based upon one's value system and interpretation of civil order is natural. One man's patriot is another man's traitor. Where do you stand on the sentiments behind the penning of the below ideas? Quiz yourself and see if you can figure out the name of the author.

The quotes assembled in this essay illustrate that government officials and agencies would put the critic on a terrorist watch list. Read each and compare if the thought behind the passage agrees with your value system or if the attitude is too extreme for mainstream politics in today's America. If left up to the national security apparatus, the author would be on a wanted poster, labeled as the Number One Enemy of the State.

Imagine the government's response for advocating a society that promotes Liberty. Tolerating grievous radical expressions like these examples is dangerous. Consider the outlooks.

"I would rather be exposed to the inconveniences attending too much liberty than to those attending too small a degree of it."

"What country can preserve its liberties if its rulers are not warned from time to time that their people preserve the spirit of resistance?"

"It is better to tolerate that rare instance of a parent's refusing to let his child be educated, than to shock the common feelings by a forcible transportation and education of the infant against the will of his father."

"It is strangely absurd to suppose that a million of human beings, collected together, are not under the same moral laws which bind each of them separately."

Many people complain about government but most consent to the dictates of authority as a required acceptance of citizen obedience. How many times have you heard the viewpoint it is your duty to act in compliance with the law as the price of a civilized society? The vast majority obeys whatever regulation or edict comes their way. This fact keeps the system functioning. The standards set forth for your submission often evolve, but people learn to adjust.

Pushing the envelope of the acceptance quotient varies in intensity, but seldom does government retreat. The state is the final judge of acceptability, because force is the ultimate weapon of threat for disobedience. Ruling regents restrain, ignore or discard eternal indivisible rights if a conflict exists with the interests of the state. Freedom can be a very treacherous opponent for a municipal establishment.

You can just hear the opposition to the next series of quotes. The idea that natural law permits all legitimate authority is downright radical and inhibits the living Constitution.

“No man has a natural right to commit aggression on the equal rights of another, and this is all from which the laws ought to restrain him.”

“The majority, oppressing an individual, is guilty of a crime, abuses its strength, and by acting on the law of the strongest breaks up the foundations of society.”

“To compel a man to furnish funds for the propagation of ideas he disbelieves and abhors is sinful and tyrannical.”

“The two enemies of the people are criminals and government, so let us tie the second down with the chains of the Constitution so the second will not become the legalized version of the first.”

“I tremble for my country when I reflect that God is just; that his justice cannot sleep forever.”

Governments pursue greater influence and range of regulating behavior. As the state grows the tentacles of reach expands. Challenging this trend risks acceptance and imposes penalties. Torturing the meaning of fairness, the state uses all the muscle of intimidation and brute coercion, to justify public acceptance of the methods used to gain conformity.

Testing the limits of government forbearance is an act of courage that most shy away from undertaking. Open confrontation is chastised as behavior of a delinquent subject. Confiscation of individual wealth for the greater good champions the supreme sacrifice that transforms into the shared cost of being part of the great government governance.

Conferring legitimacy and respect for government programs and policies is the criterion of a loyal national. Deviating from symbolic recognition and deference must signify that the person is hostile to the good works of public sector. Advocates that express dissent are tabbed as agitators and threats, calculated to challenge the survival of the state.

The role of government amplifies as the drumbeat of the welfare clause vibrates to the inner soul of the nation. This group of citations adds fuel to the fire that the writer is an enemy of the state.

“Experience hath shewn, that even under the best forms (of government) those entrusted with power have, in time, and by slow operations, perverted it into tyranny”

“I predict future happiness for Americans if they can prevent the government from wasting the labors of the people under the pretense of taking care of them.”

“I think myself that we have more machinery of government than is necessary, too many parasites living on the labor of the industrious.”

“The democracy will cease to exist when you take away from those who are willing to work and give to those who would not.”

“A wise and frugal government, which shall restrain men from injuring one another, which shall leave them otherwise free to regulate their own pursuits of industry and improvement, and shall not take from the mouth of labor and bread it has earned. This is the sum of good government.”

Resistance to government abusive authority qualifies the opponents of the regime as outlaws. Envision claiming that government can become a tyrant and implying that revolt is justified. Advocating acts of rebellion and equating an ethical mandate surely qualifies the essayist as a foe of the government.

Self-defense and individual autonomy disturbs the state. The all-encompassing scope of government involvements and intrusions claim that such practices, warranted for the public good, are valid. Challenging this omniscient authority qualifies one as an antagonist of the sovereign master.

Disputing the entrenched submission to the state as an instrument of rule is perilous to the magistrates. Punitive prosecution of indignant protestors must be a prime directive of the state. Granting access to the corridors of power and rule to the generator of the next thoughts is unthinkable. Allowing these words to influence the population is dangerous. Such ideas desecrate the purity of government genuineness.

“The spirit of resistance to government is so valuable on certain occasions that I wish it to be always kept alive. It will often be exercised when wrong, but better so than not to be exercised at all.”

“The strongest reason for the people to retain the right to keep and bear arms is, as a last resort, to protect themselves against tyranny in government.”

“When wrongs are pressed because it is believed they will be borne, resistance becomes morality.”

By now, you should have a good idea who wrote all these quotations. Many complacent Americans are uncomfortable with the spirit and intent of this wisdom. The ageless insights apply as succinctly as when they were first uttered. These words disturb many cowardly peons, who abdicate their self-dignity by willingly pronouncing their allegiance for the state, especially when the conduct based upon coercion and dependency is the norm.

The state is the enemy, when authorities assault individual liberty and embrace collectivism. The sage of these quotes would be demonized as a rebel and unelectable in today’s “PC” environment. Secure in his place is history, the current political class often rejected the origins and truth in the ideas.

The Democratic Party has strayed a very long way from their anti-federalists beginnings. The most avid voices of condemnation and dismissal in the message of the verses shout out for an all controlling and omnipresent government. Therefore, the call for limited government is a primary reason to label followers of the intrepid author as enemies of the state. In case you have not figure out the authorship yet, review the Solitary Purdah essay and discover the answer.

America is in deep trouble because the country has lost its way and people scorn their heritage. Instead of cherishing sound principles and universal values, the population has embarked on a self-destructive rush for fallacious gratification. In order to continue the decadent orgy of debt and entitlements, dependants swear fidelity to the state, deny their natural birthrights, and avoid intrinsic responsibilities. Will you adopt the proud title – Enemy of the State? On the other hand, will you continue to aid and abet the downfall of the nation and keep saluting a despotic dictatorship?

Source of quotations
1 http://jpetrie.myweb.uga.edu/TJ.html
2 http://thinkexist.com/quotes/thomas_jefferson/

SARTRE – May 6, 2012

Free People of the World UNITE: The Use of Gold Dinars and Silver Dirhams GOES VIRAL!

Well friends, things are looking up for free people around the world who value REAL money. I just received an update from reader and physical precious metals stacker Dean Arif, the Program Director of Dinihari Dinar (The Dawn of the Dinar) in Malaysia.

Dean reports that the use of physical gold and physical silver in the form of gold dinars and silver dirhams, has spread from Malaysia to Indonesia and has now gone viral in Singapore, Brunei and Philippines! Dean writes, "The silver dirham coins will unite the people of this region (Southeast Asia) as the dirhams from Indonesia can be used in Malaysia and the ones from Malaysia can be used in Singapore WITHOUT THE NEED FOR THE MONEY CHANGER'S fiat! And the coins follow WIM (World Islamic Mint) standards (consistent weight, purity and size), so they are fully interchangeable anywhere in the world, making it a true global mode of payment.

If you don't think that's bad news for the Central Banking criminals, check this out. Dean reports that exchanging physical silver for everyday goods is simple, and one ounce of silver – while still representing a ridiculous 50 to 1 silver to gold ratio – goes FAR. There are 31.1 grams of silver in one troy ounce, so 1/10th of an ounce, around $3.10 in silver value (USD) will buy 5 loaves of organic wholewheat bread.

1 dirham (2.975g of 999 silver) =
1 whole organic, free-range chicken
5kg of brown rice
10kg of unbleached flour
5 loaf, organic wholewheat bread, etc.

1 dinar (4.25g of 917 gold) =
1 goat
1 sheep
1 month apartment rent

Dean writes, "Suddenly, we see true freedom on a whole new level as more and more people awaken to the nature of "divide-and-conquer" paper currencies!"

Once again we say, take THAT criminal Banksters. Good luck trying to put the genie back in the bottle now.

http://stgeorgewest.blogspot.de/2012/04/free-people-of-world-unite-use-of-gold.html

Mises Canada Launches Sound Money Project

April 03, 2012

Ludwig von Mises Institute of Canada, is proud to announce the launching of “The Canadian Sound Money Project.” This project comes on the heels of the Canadian government’s decision eliminate the penny from the national money supply.

The Launching of “The Canadian Sound Money Project”

The Ludwig von Mises Institute of Canada, is proud to announce the launching of “The Canadian Sound Money Project.” This project comes on the heels of the Canadian government’s latest proposed budget which seeks to eliminate the penny from the national coinage system. Though a rational endeavor on the surface as an attempt to save on cost of production (according to Finance Minister Jim Flaherty, it costs a “penny-and-a-half every time we make one), the elimination of the penny is just one more sign of the shaky foundation on which the Canadian dollar lies.

This is a case of the disappearing penny is yet another instance of monetary debasement gone awry; plain and simple. The cost of producing a penny has gone up only relative to purchasing power of the Canadian dollar going down. According to the Bank of Canada, the Canadian dollar has lost 94% of its value since 1914. At the present targeted rate of inflation of 2% per year, the Canadian dollar loses half of its purchasing power to monetary debasement after only 35 years. This means Canadians must work more hours and earn more income just to break even if they ever seek to retire or accumulate any real savings.

In a budgetary release, the Canadian government admits that inflation of the money supply is the culprit behind its decision.

Due to inflation, the penny’s purchasing power has eroded over the years. Today it retains only about one-twentieth of its original purchasing power.

Our goal at the Mises Institute of Canada is to have Canada become the beacon of currency freedom for the rest of the world. Under sound money, recessions have been shorter and less frequent historically. When the market chooses the money, it’s democracy at its finest and a triumph of the people over the few.

You can visit the Home Page for this Project at

Sound Money for Canada

Redmond Weissenberger Interviews Stefan Molyneux on the Importance of Sound Money for Canadians

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