

# Viewpoints

## A penny for your informed thoughts

Top of Utah Voices



**Michael Vaughan**

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Commentary

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After a couple of pages of arithmetic, I had the answer. A penny doubled every day for 30 days is worth \$5,368,709. I found the result astonishing. I had learned my first lesson in compound returns and exponential growth. It was an important lesson to learn.

The lesson of the penny doubled every day is old and used in many different settings. I am certain many readers have encountered the example. If someone introduced you to the lesson of the penny, you undoubtedly learned something useful. The power of

compound growth has countless applications.

Is global warming a serious problem or a hoax? If the St. George population continues to grow at the present rate for 10 years, how much water will be needed to support the city? If traffic along the I-15 corridor continues to increase at the present rate how many passengers will need to use commuter rail to avoid total gridlock on I-15?

On a more personal level, how much money should you be setting aside from each paycheck to provide the funds you will need for your children's education, your retirement or that dream vacation house you would like to own?

The answer to any of these questions requires an understanding of compound growth. Small quantities compounded on a continual basis can become extremely large quantities.

There was also a second lesson embedded in the question my dad presented me.

This second lesson isn't directly connected to mathematics, and it is universally applicable. I

uncovered the second lesson when I thought long and hard about why I chose the \$25. Why did I choose the \$25? The simple answer is that I was lazy. I did a couple of quick calculations, but I was too lazy to carry my analysis through to a reasoned conclusion. I was capable of working through the math of compound returns. I had all the relevant information I needed. I was just too lazy to do the work.

Regrettably, many people choose a similar path when confronted with important questions. That means that the opinions many people hold on issues such as global warming, population growth and urban transportation are based on emotion, untested intuition or the opinions of friends.

Conditions in the world today require the careful analysis of many important issues. The analysis requires some work. It may require some reading. It always requires some reflective thought. But, the work is essential.

News reports are filled with examples of business people and politicians who have perpetrated some fraud upon the public. There

are even more examples of well-intentioned leaders who have shepherded their constituents down a path leading to disastrous results.

Con artists often say that you can't cheat an honest person, meaning that it is easy to dupe someone with at least a little larceny in their heart. In the same vein, it is easy to mislead an ill-informed citizenry.

We are a month away from Jan. 1, 2007, and during the coming weeks New Year's resolutions will be made. Many of these commitments will be resolutions to exercise more, eat less or clean the closets.

A good resolution would be to learn more about a significant issue facing the community, state, nation or world. Whether the issue is the potential for a global pandemic, the preservation of open space in the Top of Utah or the viability of a local plan for economic development, over the course of a year, you can learn a lot.

At the end of the year, you will be better informed, and what you learn will benefit you and other members of the community.

When I was 10 years old my dad came to me with a proposal. He had a long list of chores that would take me a month, or longer, to complete. If I completed the assigned tasks, he would pay me \$25. At that time, \$25 was a small fortune for a kid.

Then my dad added a twist by offering some alternative compensation for my work. Instead of \$25, he would pay me a penny for my first day's work, 2 cents for the second day, and 4 cents for the third. He would continue to double the pay every day.

Which pay scheme did I prefer? I did some quick mental calculations. I would get 8 cents on day four, 16 cents on day five, and 32 cents on day six. I didn't do any more analysis. After six days, I still hadn't made a buck. The decision was easy. I chose the \$25.

My dad said fine. We settled on \$25 for a month's work. My dad said there would be no renegotiation. But, for my own benefit he asked me to sit down and figure out how much I would have earned if I had opted for the alternative compensation, which started at a penny a day.