

# The mathematically ignorant

by John Yeats

## **During my short mission trip . . .**

to Malawi, something changed on the Oklahoma landscape. As I rode from the airport to my home, I counted no less than 103 political ads. The radio was filled with political advertising. I haven't watched any television yet, but I imagine it, too, is crowded with political ads.

## **Let's set the record straight . . .**

right here and now. The *Baptist Messenger* will NOT be part of any political endorsements. Neither will we run any political ads. However, we will speak to some of the same issues politicians are kicking around.

## **For example, one of the . . .**

big moral and social issues in this year's gubernatorial race is the issue of a state-sponsored lottery. The *Baptist Messenger's* opposition on this issue has been clear in the past and is based solidly on the principles of fiscal responsibility taught in God's Word. Furthermore, a lottery is an unstable method of raising funds for education or any other government program. For one thing, a lottery victimizes the working poor.

## **Why? Consider these . . .**

insights from Bryan Dawson, chair of the Department of Mathematics and Computer Science at Union University in Jackson, Tenn. He says the lottery is a tax on the mathematically ignorant. "If you think about it, though, the lottery is essentially very much mathematical, and therefore mathematics has much to say about the lottery. Even more interesting, every talk that discussed the lottery that I have ever heard at a mathematics conference has been anti-lottery. Why? The numbers just don't add up."

## **"One of the topics you . . .**

might encounter in an introductory college statistics course is that of expected value," says Dawson. "Without getting into a math lesson, the general idea of this concept is that it gives a measure of what one would expect to gain or lose, on average, from some situation governed by random processes. For instance, consider a slot machine that has a payback rate of 95 percent--then the expected value to the person playing the slot machine is--5 cents per dollar bet. The more you bet, the more you would expect to lose. If you bet \$1,000 using this machine, you would expect to lose \$50. Of course, you could come out ahead, but on average, you would lose 5 percent of the total amount that you bet. Casinos and state lotteries use the expected value concept to determine the net proceeds they can expect from a given level of betting."

## **Dawson states that some . . .**

people believe state lotteries are not as bad as casinos because the stakes are not as high. However, "from a mathematical point-of-view, lotteries are actually much worse. The expected value of most traditional casino games is in the range of 3 cents to 5 cents per dollar bet. Most state lotteries have an expected value of around 50 cents to 60 cents per dollar bet. In other words, you would expect to lose money more than 10 times as fast with the lottery as with a slot machine or blackjack in a casino."

**Will a lottery produce . . .**

income for the state of Oklahoma? Yes. "How much and at what cost?" is the next question to ask a politician who supports a lottery for education or any thing else. Where does the bulk of the revenue come from? "Statistical studies have shown that the revenue typically comes from the poor," states Dawson. "More than 6 percent of the income of the poor is taken in by the lottery, while maybe 1 percent of the income of the middle class, and next to nothing from the wealthy, is brought in. If any state legislator dared propose an income tax with those characteristics, he would be lynched."

**If the candidate of any . . .**

party or of no-party says that the lottery is victimless, he is not telling the truth. If he says that gambling, is just a "game" and consequently, just a form of entertainment, he is not telling the whole truth. If a candidate says that since the Bible doesn't directly condemn gambling activities then it is acceptable, he is not telling you the whole counsel of God. If the candidate won't tell the truth in this area, what makes us think he will be honest in other areas?

**"So why does the lottery . . .**

enjoy so much support, and why does it prey so heavily on the poor?" argues Dawson. "I believe it is due, in large part, to the false hopes of financial gain that are fueled by mathematical ignorance. I'll end as did a mathematician in a talk to a national honor society convention: when it comes to playing (or voting for) the lottery, "stupid is as stupid does."

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