

Wednesday June 24, 2015

Truths independent of space and time

By Jim Taylor

I woke one morning thinking about pi. No, not the primary character in the book and movie, *The Life of Pi*, but the mathematical symbol, pi -- representing the ratio between the diameter of a circle and its circumference.

Perhaps it had something to do with having had pecan pie for dessert the night before.

The ancient Greek mathematician Archimedes estimated pi at 22 divided by 7. Since the advent of the decimal system, it's usually defined as approximately 3.14159. The figure has to be an approximation, always, because pi is an irrational number. That is, no matter how many decimal places you take it to, you can never get it precisely right.

That's an act of faith, of course. Because until you actually get to a precise outcome, you can't know that you won't. It's like trying to prove that life is found only on this planet. Or that God doesn't exist. Or that global warming won't happen.

In an attempt to prove their point, mathematicians have pushed their calculations of pi, so far, to over 13.3 trillion digits. Not because anyone actually needs that level of precision...

One of a kind

But pi has some other interesting characteristics. As an irrational number, pi cannot be a multiple of any other numbers. That makes it unique, indivisible. It stands alone.

Wikipedia says, "The ubiquity of pi makes it one of the most widely known mathematical constants both inside and outside the scientific community."

Mathematicians also call pi a transcendental number. I tried to understand what a transcendental number is, and failed miserably.

According to historians, approximations of pi were first used by the Egyptians and Babylonians as far back as 1600 B.C. We've been refining our definitions ever since. But no one actually invented pi. Rather, people discovered what was already there.

It's like other mathematical truths. One and one always made two, long before someone noticed that predictable coincidence. Pythagoras didn't invent the right-angled triangle; he merely identified the formula relating the lengths of its sides.

Mathematical truths operate independently of context. Pythagoras's theorem works in any number of dimensions. So does pi. In one dimension, it defines the length of the line that forms a circle. In two dimensions, it defines the area of that circle. In three dimensions, the volume of a sphere. Presumably, it will work in all 11 dimensions required by the "string theory" of the formation of the universe -- even if we have no idea what all those dimensions might be.

Independent truth

Would pi work in zero dimensions? That is, would pi still have been valid before any dimensions existed, before the formation of the universe we know? Mathematicians would probably say yes -- pi is a truth that exists independent of space and time.

In fact, they'd probably say that the universe could not have expanded as it did, if there were no such thing as pi.

The descriptions of pi bear a startling similarity to descriptions often ascribed to God: eternal, unchanging, unique, indivisible, infinite, transcendent...

And maybe irrational – beyond mere reason.

And I wonder if that's just coincidence. Do we extrapolate mathematical truths into divinity? Or are mathematics a confirmation – an incarnation, perhaps – of our struggle to grasp otherwise ungraspable truths?

Copyright © 2015 by Jim Taylor. Non-profit use in congregations and study groups, and links from other blogs, welcomed; all other rights reserved.

To comment on this column, write jimt@quixotic.ca

YOUR TURN

Steve Roney was the first to point out my error: “You have been taken in. Ted Cruz never said the words you attribute to him. They appeared on a satirical web site. Check Snopes to confirm.”

Two other writers later told me the same thing. They're right. And I'm sorry. I thought I was smart enough to recognize a spoof, and I wasn't.

Steve continued, “I also wonder about your lower-casing of ‘god’ in the sentence ‘He appealed to his god, and his god responded with a downpour.’ Ted Cruz is a Christian, and therefore a monotheist. Seems to me lower-casing it tends to create the false impression that Cruz is a polytheist. Speaking of ‘his god,’ with the possessive, reinforces the false impression; as if he understood himself as choosing one god among many.

“If you are both monotheists, it is a simple logical necessity that both you and Cruz are worshipping the same God. What you mean to say, presumably, is that Cruz's understanding of God is wrong.”

Retired engineer and committed skeptic Ted Archibald wrote: “Excellent. Sort of confirms my belief system, or the lack of. Similar to Pastafarianism.”

JT: If you're of an irreverent mind, look up “pastafarianism.”

Mary-Margaret Boone: “The phrase ‘Be careful what you pray for’ came to mind forcefully in my early days of ministry. When we prayed for good weather for our Sunday School picnic, a farmer in our congregation reminded me how badly our crops needed rain.

“Prayer is a two edged sword. So examining how you pray and how you believe in prayer is important. I describe it as a comfort zone and not a wish list. But obviously not everyone views prayers the same way.

“While I do not support what happened in Malaysia, because I believe in honouring sacred spaces, I was aghast that those climbers' actions would be associated with a subsequent earthquake. It put us back into the realm of religion governed by natural events that we had no knowledge or control over. The voice of ancients spoke with the voice of moderns who equated major disasters with sins.

“I am fearful that we have not evolved enough.”

James Russell drew my attention to a letter in the Globe and Mail about the Malaysian incident, which made a similar point about ancient superstitions and modern climbers.

John Shaffer's letter continued that theme: There will always be those who claim to know ‘the mind of God’-- assuming God has a mind. In doing some counseling recently with the relative of a dying woman, I assured the young man that he didn't have to judge his relative. That was God's job and he shouldn't try to take over God's job. Don't know how that was received, but it bothers me when others are bothered by the ultimate fate of a loved one because they have never heard them say ‘the magic words’ -- whatever those words might be.

“And then there are those who claim disasters are God's way of punishing a group of people for their sinful

ways. My proof text is ‘The rain falls on the just and the unjust,’ so what is the point of seeking someone to blame? Storms seem to do some good in atmospheric shifts but woe to those of us who are caught in the results. Stuff happens.”

Isabel Gibson: “Something tickled at the back of my brain as I read this piece. I Googled ‘asking the universe for what you want’ and there it was:

“‘Ask The Universe HOW TO USE THIS PAGE It is very simple. In the space above, you can write your request of the Universe. You can write whatever you want. It is YOUR Universe...’

Who was it who said, "Ask and you will get"? (Well, it got translated as ‘ye shall receive’, but who talks like that?)

[Ahem. It was Jesus. According to at least three gospels. JT]

Margaret Carr took my closing lines to heart: “You are right about people not asking for things they need, and I am afraid I am one of them. I am still a traveler on this life road, trying to do and to see what needs to be done, and doing what I am able to do and not worrying about what I cannot do.”

PSALM PARAPHRASES

The Revised Common Lectionary gives three possible choices for a “wisdom” reading this Sunday. I’ll go with just one – Psalm 130. Like the other two suggestions, it voices lament. When I did this paraphrase, I wondered how today’s refugees might state that lament.

My baby just died, Lord of the Universe.
Is this your holy will?
That wars should rip us from our homes,
That drought should wither our crops,
That even my breasts should dry up?

Hear my cries, O Holy One.

Are you doing this because we displeased you?
Did we fail to say our prayers often enough?
Were we too concerned with sheer survival?

If we have wronged you, forgive us.
We will honour you even more for your compassion.

I shrivel in the scorching heat.
I huddle under a tattered tarp in a refugee camp.
I cower in the rubble of an apartment building.
I have no water, no food, no hope.

I wait.

Yet still I believe that you are powerful,

That your power is the power of love,
And that it can change the world.

So I wait...

For paraphrases of most of the psalms used by the Revised Common Lectionary, you can order my book *Everyday Psalms* from Wood Lake Publishing, info@woodlake.com.

YOU SCRATCH MY BACK...

If you know someone else who might like to receive this column regularly via e-mail, send a request to jimt@quixotic.ca. Or forward them a copy of this column. But please put your name on it, so they don't think I'm sending out spam.

For other web links worth pursuing, try

- Ralph Milton's HymnSight webpage, <http://www.hymnsight.ca>, with a vast gallery of photos you can use to enhance the appearance of the visual images you project for liturgical use (prayers, responses, hymn verses, etc.)
- David Keating's "SeemslkeGod" page, www.seemslkegod.org;
- Isobel Gibson's thoughtful and well-written blog, www.traditionaliconoclast.com
- Alan Reynold's weekly musings, punningly titled "Reynolds Rap," write reynoldsrap@shaw.ca
- Wayne Irwin's "Churchweb Canada," an inexpensive service for any congregation wanting to develop a web presence, with free consultation. <http://www.churchwebcanada.ca>
- Alva Wood's satiric stories about incompetent bureaucrats and prejudiced attitudes in a small town are not particularly religious, but they are fun; write alvawood@gmail.com to get onto her mailing list.
- Tom Watson writes a weekly blog called "The View from Grandpa Tom's Balcony" – ruminations on various subjects, and feedback from Tom's readers. Write him at twatson@sentex.net

TECHNICAL STUFF

If you want to comment on something, send a message directly to me, jimt@quixotic.ca.

To subscribe or unsubscribe, send me an e-mail message at jimt@quixotic.ca. Or you can subscribe electronically by sending a blank e-mail (no message) to softedges-subscribe@quixotic.ca. Similarly, you can un-subscribe at softedges-unsubscribe@quixotic.ca.

You can access several years of archived columns at <http://edges.Canadahomepage.net>.

I write a second column each Sunday called Sharp Edges, which tends to be somewhat more cutting about social and justice issues. To sign up for Sharp Edges, write to me directly, at jimt@quixotic.ca, or send a note to sharpedges-subscribe@quixotic.ca
