

Can Penguins Drink Warm Water?

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Abstract

A gentle reminder of the origin of gravity, with illustrations.

Let me begin by quoting from W.G. Unruh, *Time, Gravity, and Quantum Mechanics*, arXiv:gr-qc/9312027v2, 17 Dec 1993, <https://arxiv.org/abs/gr-qc/9312027v2>:

p. 4: "The lesson of these experiments would appear to be that gravity alters the way clocks run. Such a dependence of time on gravity would have been strange enough for the Newtonian view, but General Relativity is actually much more radical than that. A more accurate way of summarizing the lessons of General Relativity is that gravity does not *cause* time to run differently in different places (e.g., [faster far from the earth than near it](#)).

"Gravity *is* the unequable flow of time from place to place. It is not that there are two separate phenomena, namely gravity and time and that the one, gravity, affects the other. Rather the theory states that the phenomena we usually ascribe to gravity are actually caused by time's flowing unequally from place to place.

p. 5: "The crucial point is that one can alternatively explain this essential attribute of gravity by assuming that time flows unequally from place to place, without calling into play any 'force of gravity' at all."

 W. Unruh, No Time in Quantum Gravity. In: *Gravitation: A Banff Summer Institute*, ed. by R. Mann, P. Wesson (Singapore: World Scientific, 1991), pp. 260-275.

 William G. Unruh and Robert M. Wald, Time and the interpretation of canonical quantum gravity, *Phys. Rev. D* 40(8), [2598-2614](#) (1989).

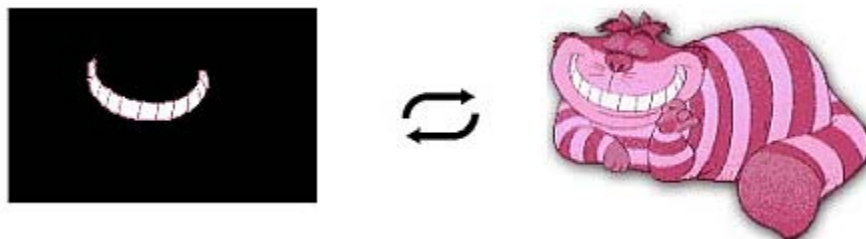
 Read also John Baez, *Struggles with the Continuum*, 1 Feb 2018, [arXiv:1609.01421v4](https://arxiv.org/abs/1609.01421v4) [[math-ph](#)]:

"One might hope that a radical approach to the foundations of mathematics – such as those listed above – would allow us to sidestep these problems. However, I know of no significant progress along these lines. (...) Is the continuum [as we understand it](#) only an approximation to some deeper model of spacetime? Only time will tell. Nature is providing us with plenty of clues, but it will take patience to read them correctly."

It is extremely difficult to induce penguins to drink warm water (John W. Coleman).

Let me stress that “penguins” like [W.G. Unruh](#), [John Baez](#), and their [colleagues](#) have no choice: read the *facts* at p. 20, p. 27, and pp. 42-45 in [Can Geometry Produce Work](#).

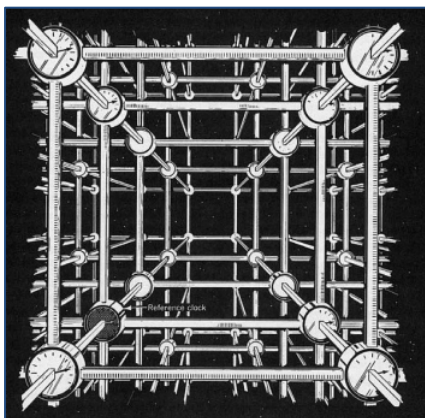
There are three cats in quantum gravity: the grin of the Cheshire cat *without* the cat (as observed by [Alice](#)), the [Schrödinger’s cat](#), and T.S. Eliot’s cat [Macavity](#).



“Space acts on matter, telling it how to move. In turn, matter reacts back on space, telling it how to curve.”

[J.A. Wheeler](#) in *MTW* p. 5.

Picture the bare grin of the cat *without* the cat as ‘spacetime without matter’, which is being **re-calibrated**, ever since [The Beginning](#), “in meters of light-travel time”: see Fig. 9 in *Spacetime Physics* by E.F. Taylor and J.A. Wheeler (1965, [p. 18](#)).

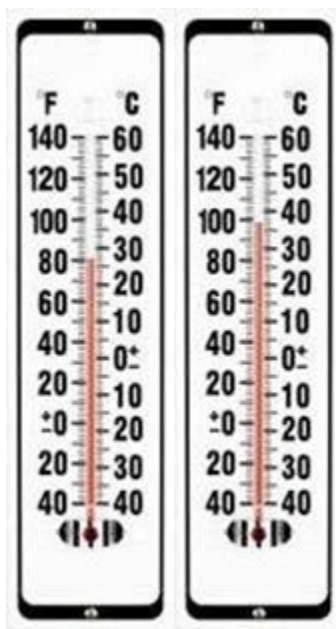


What phenomenon could possibly “calibrate” the **ideal** rods and clocks (*MTW* p. 397) that are pre-built in spacetime? For if we manage to *tweak* the **matrix** of light-travel time, we should be able to alter the *rate* of the light-travel time and **reproduce** all the effects of spacetime, called ‘gravity’ ([W.G. Unruh](#)).

As E.F. Taylor and J.A. Wheeler acknowledged: “We assume that *every* clock in the latticework, whatever its construction, has been calibrated in meters of light-travel time.” Calibrated? Can “penguins” understand the *origin* of gravity? Let me explain the puzzle.

Suppose you are at your terrace in a summer day. You look at the reading of your air thermometer, which shows 27° Celsius. The air temperature is caused chiefly by the

Sun (the Cheshire cat at the **right-hand** side of the drawing [above](#)), so if you decide to increase the reading of your thermometer *locally*, by heating it with a hair dryer to 37° Celsius (see below), the air temperature at your terrace will not increase.

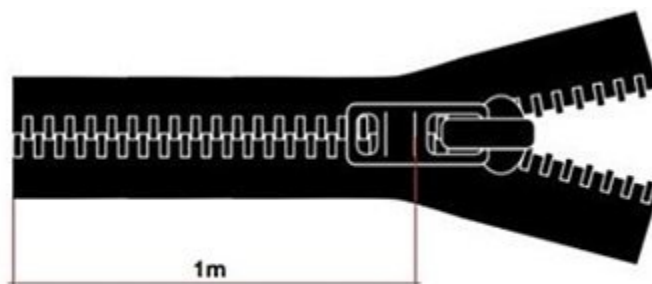


People consider “intuitively obvious” that the bare grin of the cat *without* the cat, shown at the **left-hand** side of the drawing [above](#), is like the powerless thermometer.

NB: But how about [Earth tides](#)? How would you relate in GR the alteration of the *rate* ([W.G. Unruh](#)) of “meters of light-travel time” ([E.F. Taylor and J.A. Wheeler](#)) to the gigantic physical forces of [Earth tides](#)?

Not in GR. No way. You need to know the **Platonic** origin of [gravitational energy](#). And much more.

The **re-creation** ([Slide 1](#)) and **re-calibration** of spacetime, ever since [The Beginning](#) (read [above](#)), is explained at p. 25 and p. 39 in [Can Geometry Produce Work](#). Follow the links.



1m = 3.3 nanoseconds of light-travel time

There is nothing “[fictitious](#)” in gravity. Unlike the heating of the thermometer above, the tweaking of the complex phase ([C.N. Yang](#)) of what people call “quantum waves” does not require energy. My theory of [quantum gravity](#) is based on **atemporal offer-and-confirmation** waves ([Slide 3](#)), under perpetual [non-conservation of energy](#). Here comes the so-called [evolution equation](#). Will be happy to explain it [in details](#).

On a side note, notice the similarity of the origin of gravity and the action of the human mind on its [brain](#): both gravity and the mind can [interact](#) with their respective sources, yet neither gravity nor the mind can be *physical* stuff, for different reasons. Read the last paragraph at p. 15 in [Time and Continuum: Zenon Manifold](#).

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