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## The Dao of Mathematics: What is "zero"?

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To: Terence Chi-Shen Tao <tao@math.ucla.edu>

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Dear Dr. Tao,

There is an old puzzle about the unknowable "thing-in-itself" (Das Ding an sich),  
<https://en.wikipedia.org/wiki/Noumenon>

It is not 'empty set', as you may have learned from your math textbooks, because the 'empty set' is a relational viz. comprehensible notion; for example, the number of bananas you've stuck in your ears while reading this email is an empty set.

Joking aside, mathematicians have not defined the non-relational and absolute 'zero', simply because Dao is not comprehensible by human cognition. Physicists like M.J. Fernee are only trying to talk about Dao as "something intangible that we only probe with measurements",  
<https://qr.ae/pr7xaB>

I suggested new numbers, called 'hyperimaginary numbers' and denoted  $W$ , which, "when" squared in the physical world, collapse to the non-relational and 'absolute zero' ( $W^2 = 0$ ) called also Dao. It cannot be a proper set anymore, just as the universal set that contains absolutely everything, including itself, cannot be a proper set. In this sense, the two complementary notions of 'absolute zero' and 'absolute everything' are indistinguishable to our cognition. The latter statement may be UNdecidable proposition, I'm afraid.

Mathematically, every point from the number line has two degrees of freedom: imaginary and hyperimaginary. We need hypercomplex analysis, after postulating that Dao is \*not\* always squared (see Zen attached). If you are interested, check out 'the general rule' at  
[https://chakalov.net/QM\\_rule.jpg](https://chakalov.net/QM_rule.jpg)

Will be happy to elaborate.

Kind regards,

Dimi Chakalov

<https://chakalov.net/#reports>

Excerpt from p. 15 in <http://chakalov.net/talk.pdf>

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Perhaps the core idea in Fig. 8 is indeed **very difficult**. Let me try to shed some light on it. Think of the *atemporal* offer wave & confirmation wave (*ibid.*) as "inhaling & exhaling" of the Universe. To quote David Schiller, before Zen, mountains are mountains and trees are trees; during Zen, mountains are no longer mountains and trees are not trees; after Zen, mountains are once again mountains and trees once again trees (Fig. 10).

Q<sub>1</sub>: [mountains and trees]    **Zen**    Q<sub>2</sub>: [mountains and trees]

As an illustration of the 'general rule', recall John Wheeler's game of [twenty questions](#) (John Gribbin, *In Search of Schrödinger's Cat: Quantum Physics and Reality*, 1984, p. 209):

There had been a plot not to agree on an object to be guessed, but that each person, when asked, must give a truthful answer concerning some real object that was in his mind, and which was consistent with all the answers that had gone before. With only one question left, John Wheeler guessed: "Is it a cloud?"  
The answer was "Yes!"

The final answer 'cloud' was correlated with all previous answers, but it could not be physicalized from/by the Platonic idea of 'cloud *per se*' until the final question. But if you say 'cloud', you will not "collapse" the Platonic idea of 'cloud *per se*', which keeps its [invariant meaning](#): try the experiment with your brain [here](#) (cf. *Where Does Knowledge Come From*, [brain.pdf](#)) and notice that there is no *metric* in your memory to define the "weight" or "distance" between all concepts stored in it. Namely, "during" **Zen** (see the excerpt above), the mountains and the trees are [atemporal](#) Platonic reality. Which is why I suggested [two modes of spacetime](#) and offered conceptual solutions to [cosmology](#) and [quantum gravity](#). Read p. 5 and p. 26 in [Newton.pdf](#), and Max Planck at p. 27 therein.

The noetic world (*psyche*) and the physical world (*matter*) are being pre-correlated by [pre-established harmony](#), as suggested by Leibniz ([Slide 14](#)). The *atemporal* quantum-gravitational Platonic world is the 'memory' of the entire Universe, whereas the **source** of this 'memory' is the non-relational and *absolute zero* mentioned above. It is a purely mathematical entity, called *Dao* (*Das Ding an sich*), and it is waiting patiently to be uncovered. We only need Mathematics ([16 July 1997](#)). *Soli Deo gloria*.

A penny for your (colored) thoughts! In QM with [Hilbert dimensions  \$\geq 3\$](#) , we have a peculiar Hilbert sphere in which the "colourable" fraction tends to 68% (H. Granström, p. 2), whereas the rest is some **UN**colorizable stuff that **cannot** pertain to *any Hilbert space*. This is a mathematical fact, after the theorems by [Andrew Gleason](#) and [Kochen-Specker](#). The phenomenon called '[quantum contextuality](#)' is rooted on the **UN**colorizable "partition" of our world, about which we can say *nothing*. I mean, absolutely nothing. **Zero**. We can only call it *Dao* (*Das Ding an sich*) or 'the set of all things we **cannot** think about'. This non-trivial set has *absolute zero* cardinality. This is why we need the so-called *hyperimaginary numbers* mentioned above. Capiche?

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