

THE IMAGINARY FRIEND PROBLEM

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The Imaginary Friend Problem is a hypothetical and largely humorous situation developed off theories in math inapplicable in real life. However, that detracts nothing from humor of such a hypothesis and mathematically, it makes sense.

The basic premise of the Imaginary Friend Problem revolved around the “imaginary” concept in mathematics. In mathematics, an “imaginary” number i represents $\sqrt{-1}$, which can be used in mathematics – for example, $i^2 = -1$ (as any square root squared equals that number – $\sqrt{(x)^2} = x$. – see Appendix B for details on i and operations with i). This situation revolves around the fact that $i^4 = (i)(i)(i)(i) = 1$.

Here's the situation. Person A has an imaginary friend. We'll denote Person A's imaginary friend as A'. A' decides to have an imaginary friend, A''. A'' imagines a friend, A'''. A''' proceeds to imagine a friend as well, A'''. Now, A'''' imagines anything – a friend, an object, anything physical. Is this object, friend, etc. real?

At first, you'd reply “no”. This doesn't make logical sense. But now let us go through the problem mathematically:

Person A is irreverent to the hypothetical situation, really. He represents “real”. “Real” in math refers to numbers that exist. Now we have A'. A' is the *imaginary* friend of A. This makes him an “imaginary” number – i . Now A'' is the imaginary friend of A', who is already imaginary. This makes it the imaginary of imaginary – $i * i$ or i^2 . This is equal to -1 , but this is irrelevant at the moment. If we move on to A''', A''' is the imaginary friend of A'', or i^2 . This makes A''' i^3 , or $-i$ [$-\sqrt{-1}$]. Finally, we have A''', or the imaginary friend/object/etc. of A'''. This makes A'''' i^4 , or 1 . 1 is real, much like A. So, I ask again: Would this be real? Mathematically, it would.

But, one would protest, that sort of math is not applicable in the real world, and besides, it's a big stretch. To those the answer is simple. Reductionism. Everything goes back to math. People to sociology. To psychology. From there back to biology. And back to chemistry. And from there back to physics – which, one would conjecture, covers everything. But not really. While it governs all real and hypothetical things in this (and other) universe(s), what is physics? Applied math. And there, protester, is your answer to why this situation does indeed work. All goes back to math.

Another objection may be that an imaginary friend is no the same as i . This can also be refuted quite simply. Look at the prefixes to each phrase. i represents an *imaginary* number. The other is an *imaginary* friend. Both are *imaginary*. Therefore, they are similar, if not equivalent. Q.E.D.

APPENDIX A
COROLLARIES

Antimatter Corollary

If we make the assumption that the Imaginary Friend Problem is correct, then we have to realize that In addition to the fourth thing upwards imagined being real, the imagined thing of the imagined friend, or i^2 , is equal to -1. Now, -1 can represent either some form of negatively existing thing – as in something or someone on another plane, or it could be antimatter. Antimatter is much more awesome, so we'll assume that. So, by your imaginary friend imagining something, that imagined something is antimatter.

Law of Conservation Corollary

Again, making the assumption that the Imaginary Friend Problem is correct, we find a serious breach in the law of conservation, which states that matter can neither be created nor destroyed. So, we are presented with two possible solutions.

The first is that the energy going into imagining this chain of imaginings is transformed into matter, using Einstein's equation, $e = mc^2$ – which state that energy can be converted into matter and mater to energy. So we're converting thought energy into matter. This is a stretch of the laws of physics at best.

The second, more probably solution, is that mass has to be conserved, so your matter is transmuted into that object. You cease to exist and become the object of your imagination's imaginings instead. Since no one has ever successfully performed this Imaginary Friend feat, we can assume that this may be the case. And, some may have even performed it, but become that object or person, essentially hiding the fact that this marvel was achieved.

APPENDIX B
ON OPERATIONS WITH i

$$i = \sqrt{-1}$$
$$x = \text{any real number}$$

$$[\sqrt{-1}]^2 = -1$$
$$[\sqrt{x}]^2 = x \text{ – for example, take the number 25. } \sqrt{25} = 5. 5^2 = 25. \text{ So, } [\sqrt{25}]^2 = 25.$$

Now, with i , $i * i = -1$. Now, $-1 * i$ would naturally be $-i$. Further, $i^2 * i^2 = -1 * -1 = 1$. Simple.