apologizing for an inadvertent error: the main result was off by a factor of *million*[sic]. However, the Errata says, *this does not change any conclusions of our paper.*

And now, to introduce a *really* large number, I should mention that a well known software company is named after a misspelled nickname for 10^{100} which is called a googol: it is a 1 followed by one hundred zeros. This is a number much, much larger than the number of seconds elapsed since the Big bang (which is only about 10^{17}). You see that a number billion times smaller or billion times larger than a googol is 10^{91} or 10^{109} – who cares that it is "not exactly 10^{100}".

Now, if you have a tendency for mischief, you might think: what about 10^{googol} ? That would be $10^{10^{100}}$: a 1 followed by a googol of zeros[3]. As you can read in Wikipedia, this number could not be printed even if all matter in the visible Universe was converted into paper and ink. Curiously, such a monster is important enough to have its own name: it is called a "googolplex", and even more curiously, it is (possibly) useful to think about numbers as large as this, as we will now see.

The part of Universe visible to us today is called a "Hubble volume", and it is some 95 billion light years (or about 10^{27} meters) across[4].

In a serious (it is claimed) scientific paper, a calculation is presented showing that if the Universe is infinite or just very, very large, then we can expect, at a distance of some $10^{10^{115}}$ meters from us, A Hubble volume identical in all details to our Hubble volume. This means that in "that Universe" there is a copy of you reading this book and thinking what you are thinking[5]

Curiously, it is quantum mechanics that allows this calculation to be made - Universe with continuous spectra of physical quantities would be much *more* complicated than our quantum Universe. However, in quantum physics many quantities can only occur at discrete, "quantized" values, and that makes the number of possible combinations finite, although still extremely large. Then an arbitrary combination that is possible, such as for example everything in our Hubble volume, *must* occur somewhere else.

Now, to get a glimpse at infinity, express that distance in terms of the size of "our Universe", i.e. how many of our Hubble volumes we would have to put next to each other

[3]Please note that $10^{10^{100}}$ is defined as $10^{(10^{100})}$ which is different from (much larger than) $(10^{10})^{100} = 10^{10.100} = 10^{1000}$ - the first number has a googol of zeros; the second has "just" 1000 zeros (it is still an obscenely large number)

[4]This is more than twice what light would cover since the Big Bang some 14 billion years ago, because the Universe has been expanding ever since then. Details are quite complicated, but - as you will see - even major corrections would be completely irrelevant.

[5]The article begins like this: *"Is there another copy of you reading this article, deciding to put it aside without finishing this sentence while you are reading on? A person living on a planet called Earth, with misty mountains, fertile fields and sprawling cities, in a solar system with eight other planets. The life of this person has been identical to yours in every respect ...*

You probably find this idea strange and implausible, and I must confess that this is my gut reaction too. Yet it looks like we will just have to live with it, since the simplest and most popular cosmological model today predicts that this person actually exists ..."