

Re: too much information!

Source: <http://sci.tech-archive.net/Archive/sci.math/2005-01/3621.html>

From: Mensanator (*mensanator_at_aol.compost*)

Date: 01/12/05

Date: 12 Jan 2005 14:38:19 GMT

>*Subject: Re: too much information!*

>*From: jmfbahciv@aol.com*

>*Date: 1/12/05 5:46 AM Central Standard Time*

>*Message-id: <PqCdnWhR7560hXjcRVn-hQ@rcn.net>*

>

>*In article <1105468858.967035.96660@z14g2000cwz.googlegroups.com>,*

> *"mensanator@aol.compost" <mensanator@aol.com> wrote:*

>>

>>*jmfbahciv@aol.com wrote:*

>>> *In article <1105420562.691975.269220@c13g2000cwb.googlegroups.com>,*

>>> *"mensanator@aol.compost" <mensanator@aol.com> wrote:*

>>>>

>>>> *>Androcles wrote:*

>>>> *<snip>*

>>>>

>>>>> *7) Pixels on a computer screen. 16,000,000 colors for each pixel.*

>>>>> *How many different pictures are possible?*

>>>>> *Is it more or less than a google?*

>>>>>

>>>>> *>For a 640x480 screen, it's $10^{2219433}$, slightly larger than a*

>>> *googol.*

>>> *But none of it is information.*

>>

>>*I wouldn't say none. A lot of it would be useless. But just because*

>>*you can't tell the difference between a picture of a polar bear in*

>>*a blizzard and the inside of a ping pong ball doesn't mean the*

>>*picture of the inside of a ping pong ball isn't an accurate*

>>*representation.*

>

>*It isn't an accurate representation.*

Sure it is. A 640x480x24 array of binary 1s is an accurate representation of a uniform white object.

>*The picture is only in your imagination.*

No, there are two files on my hard drive called

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polar_bear_in_blizzard.jpg
ping_pong_ball_interior.jpg

If the pictures are copied to another disk and renamed

image1.jpg
image2.jpg

then the context of those images has been lost and they become useless. But they remain valid pictures. The information has not been lost, only the context in which it was used has.

*>At no time would you be able to compare
>the picture of the ping pong ball insides with a the polar
>bear and be able to accurately specify which was which.*

Based on content alone, that is correct. But the same can be said about any and all binary arrays you have stored on your computer. Identical blocks of binary data will be different information depending on the context in which it is used.

Have you ever opened an .exe file in Windows Notepad (or any other text editor). Does the file stop becoming "information" just because you used it in an inappropriate context? No, in a different context, it becomes different, albeit useless, information. And although you cannot execute the .exe file inside Notepad, you may be able to see arrays of ASCII data that are embedded in the executable such as error messages. I have a couple utility programs specifically for this task: dump.exe does a hex dump of any file and damp.exe does an ASCII dump.

>
>>
>>*If I had all $10^{2219433}$ possible images, I would have every picture
>>taken by my digital camera, every picture that ever will be taken and
>>every possible picture my camera is capable of. This would include
>>closeups of every star in the universe. The thing is, a single image
>>could represent every star in the universe and be indistinguishable
>>from the inside of a ping pong ball.*
>>
>>*So it's not a question of whether it's information but whether it's
>>usefull information.*
>
>*It is not information. Take an area of your disk; set all bits
>to 1. You now have all possible programs.*

No, no no, you've got that all wrong. Take every possible photo with my camera and store them as files on your computer using the file extension .exe. Some of those photos will be executable programs.

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>Now execute it.

ANY program that has less than 640x480x24 bits will be amongst the photos. The trick is, you won't know which pictures are programs when used in a program context. Likewise, you can paste the binary data of any .exe file into a paint program to create an image. All programs are images but not all images are programs.

>Is the CPU generating all the work of all programs? NO.
>You get a fault.

Not necessarily. The picture of a raven in a coal mine would be a legal program on a Z80 processor since 0x00 is the op-code for NOP. It wouldn't be very useful, but it wouldn't generate a fault.

This kind of thing happens all the time. People have information stored on media for which there is no longer hardware created by programs that no longer exist that were run on obsolete computers. When context is lost, information becomes useless, but is still information. Because context is separate from the information, the possibility of restoring the context always exists.

>
>/BAH
>
>Subtract a hundred and four for e-mail.

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Mensanator
Ace of Clubs