

Why Johnny Can't QM

Section 1.2

Robert I. Price

Osher Lifelong Learning Institute

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How did we get here?

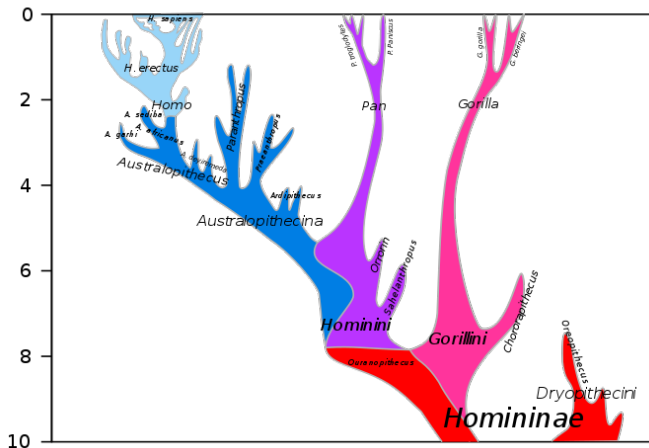
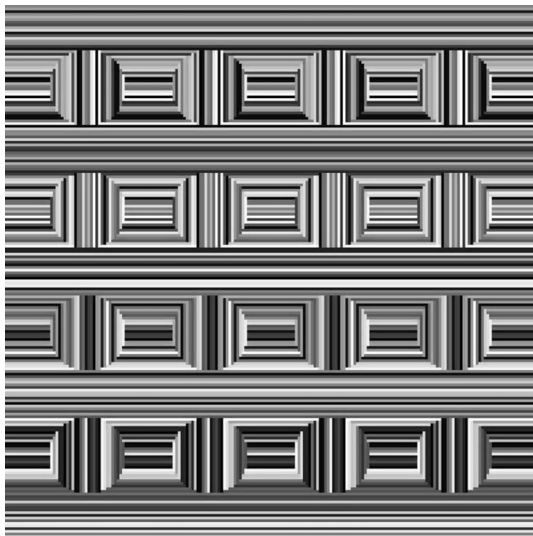


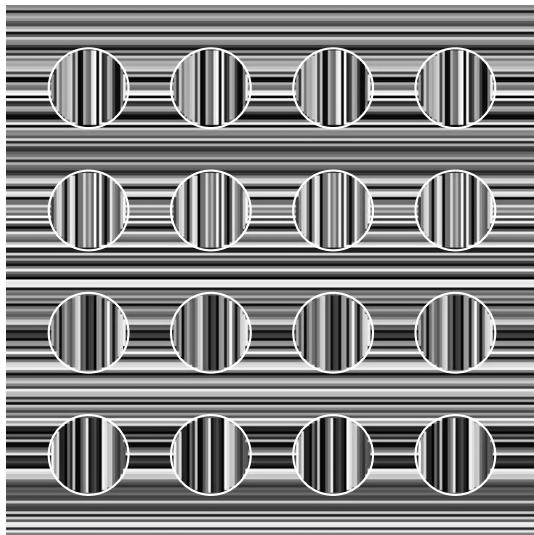
Figure 1 : Ten Million Years

Describe what you see.

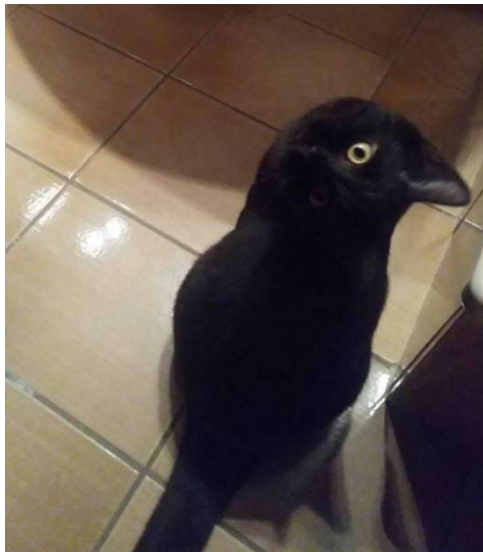


The Coffer Illusion (Sci Am, 27 MAR 2013)

Describe what you see.



The Coffer Illusion (Sci Am, 27 MAR 2013)



Hello, do you recognize me?



Figure 2 : A Murmuration Of Starlings

We Are Pattern Recognition Savants

As we complete this course I hope to be able to say, “I know you understand what I meant.” but, reality, as we shall see, is not always as it seems and is unsympathetic vis-à-vis our wishes. So . . .

*I know you believe you understand what you think I said, but I am not sure you realize that what you heard is not what I meant.*¹

has become my default assessment for Life, the Universe and Everything.

¹Robert McCloskey, U.S. State Department spokesman

Attributed to him from a press briefing during the Việt Nam war.

Except When We Deny The Challenge

68. Find the first 40 terms of the sequence defined by

$$a_{n+1} = \begin{cases} \frac{1}{2}a_n & \text{if } a_n \text{ is an even number} \\ 3a_n + 1 & \text{if } a_n \text{ is an odd number} \end{cases}$$

and $a_1 = 11$. Do the same if $a_1 = 25$. Make a conjecture about this type of sequence.

i can't figure out how to start this problem, as im not sure if im putting in the nth terms in right. my teacher's hint is that the sequences would end up creating a pattern so i wont have to work out all 40 terms

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for $a_1=11$, i got 11, 34, 17, 52, 26, 13, 40, 20, 10, 5, ... but i can't find a pattern with this, same with $a_1=25$

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11, 34, 17, 52, 26, 13, 40, 20, 10, 5, **16**,

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$$a_1 = 11$$

11,34,17,52,26,13,40,20,10,5,**16,8,4,**

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$$a_1 = 11$$

11,34,17,52,26,13,40,20,10,5,**16,8,4,2,**

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25, 76, 38, 19, 58, 29, 88, 44, 22,

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Consider the conjecture by Lothar Collatz.

Once Upon A Time . . . In The Midwest

His “name” : *Johann Sebastian*, . . . and . . .

The Worst of all Possible Outcomes ?

Maybe the problem was:

I expected him to teach himself what I was being paid to teach him.

— — — — —

By way of contrast consider “The A&O Problems”, an obscure short story from the distant past. And, compare all this with the real life event of 1956-1957.

Peas Are Purple

Our educational system is optimized to **instruct us** into developing (or perfecting) pattern recognition modalities rather than encouraging us to develop our own reasoning, and thinking strategies.

As a result, we tend to not grasp the “emergent” aspects our existence that would provide a way of “understanding” Reality.

There is an enormous amount of complexity in a deck of 52 playing cards. We tend not to perceive this complexity because we discern static and/or dynamic patterns even when no pattern (No pattern what-so-ever) is present.

The Whole is much greater than the Sum of Its Parts.

And so it Begins

Comprehending reality is

the raison d'être of “Elementary Particle Physics”,

more so than for any other field of science.

$$(2.0232 \times 10^{55}) / (8.0658 \times 10^{67}) \text{ [Or } \approx 25 \text{ in } 10^{14}\text{]}$$

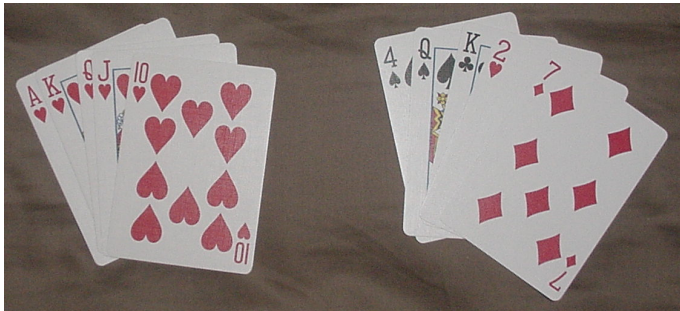


Figure 3 : Probability of This Flush < 4 in 10^7



Figure 4 : A Murmuration Of Starlings