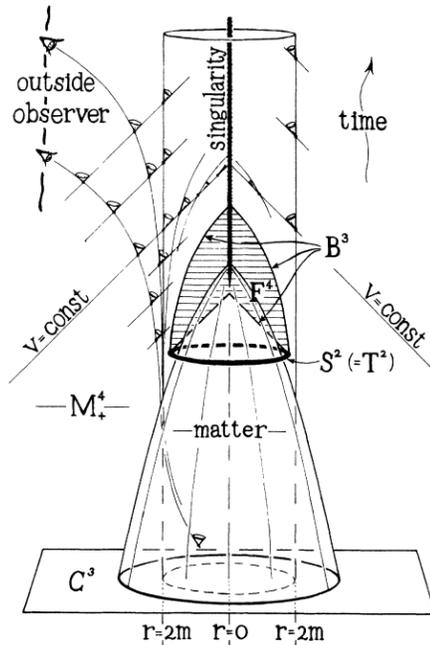


Prompt question 24: How might the context in which knowledge is presented influence whether it is accepted or rejected?

Roger Penrose's 1965 paper about singularities

PHYSICAL REVIEW LETTERS

18 JANUARY 1965



The existence of a singularity can never be inferred, however, without an assumption such as completeness for the manifold under consideration. It will be necessary, here, to suppose that the manifold M_+^4 , which is the future time development of an initial Cauchy hypersurface C^3 (past boundary of the M_+^4 region), is in fact null complete into the future. The various assumptions are, more precisely, as follows: (i) M_+^4 is a nonsingular (+---) Riemannian manifold for which the null half-cones form two separate systems ("past" and "future"). (ii) Every null geodesic in M_+^4 can be extended into the future to arbitrarily large affine parameter values (null completeness). (iii) Every timelike or null geodesic in M_+^4 can be extended into the past until it meets C^3 (Cauchy hypersurface condition). (iv) At every point of M_+^4 , all timelike vectors t^μ satisfy $(-R_{\mu\nu} + \frac{1}{2}Rg_{\mu\nu} - \lambda g_{\mu\nu})t^\mu t^\nu \geq 0$ (non-negativeness of local energy). (v) There exists a trapped surface T^2 in M_+^4 . It will be shown here, in outline, that (i), ..., (v) are together inconsistent.

In 1964, a physicist and mathematician, Roger Penrose, proved that black holes exist if Einstein's theory of relativity is correct. In 2020, he won the Nobel Prize for physics for this very work, which made me wonder; why after so many years and not then?

Roger Penrose said that "in 1964 the existence of Black Holes was not properly appreciated"¹ from which we can deduce that his theories were too advanced for his time. Penrose's theory was rejected by some physicists when it first came out², however it then became more widely accepted and others started basing their research on his. The role of historical context in influencing our acceptance of knowledge is illustrated through his research papers, as he was only rewarded for this contribution years later. We see how time may allow new ideas to be thought through rationally and finally accepted. Furthermore technological advances enable new evidence (such as images) supporting Penrose's claim.

In many cases, the bearer of information impacts your acceptance of the knowledge. Experts are generally believed more than strangers, however Penrose was an expert and people were still initially sceptical². This may be due to other experts, a team of Russian Theorists², previously purporting to prove it was impossible to have singularities in our universe. If this contradictory research had not existed, the response might have been different because they would not have had that already established belief. This therefore shows that our prior belief is a context we consider when confronted with new information.

I chose Roger Penrose's theories as one of my objects, as it gave me the ability to explore the influence of contexts, when and who, have on one accepting, or rejecting the knowledge presented.

April Fools Day in England

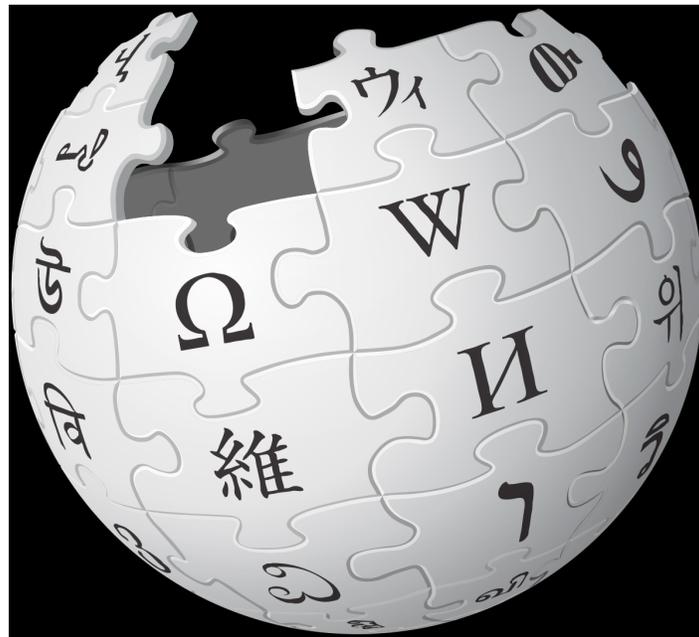


On the first of April numerous countries practice the tradition of April Fools'. In England, April Fools is a day of pranks, tricks and jokes, and once you have managed to fool someone you shout "April Fools!".

I chose this as my second object because I found it fascinating that society has designed a day where we are made to doubt what others are saying: rejecting the knowledge purely due to it being April 1st. On this day we might believe something is part of a prank, even if it is true and we would therefore reject this knowledge to avoid being fooled. This reveals how the context of this tradition increases the likelihood of knowledge rejection.

Within the context of April Fools there are other factors that would contribute to us accepting or rejecting knowledge, let's call these factors sub-contexts. These include who and what knowledge is presented. Depending on these sub-contexts our decision about the reliability of the information is further influenced, in turn making us reject or accept the knowledge. For instance, again using the example of a teacher, even on April Fools day, I would believe what they are teaching me. On the other hand, I would be more tentative about information presented by a friend, as they would be more likely to be playing a prank on me. Going deeper still, if this information aligns with my already established beliefs (for example, if they had previously told me they were moving house and they reaffirm this knowledge) I would be unlikely to reject it. In contrast to everything I have just said, if I forgot that it was that it was April Fools Day, this context would not affect my likelihood of accepting or rejecting, because I would be unaware of its implications. Where this was the case, it would only be the subcontext that influenced us to accept knowledge, as they do every other day.

Wikipedia



As my final object I chose Wikipedia. With this object, I hope to investigate online sources as a context of knowledge presentation and the reliability of these sources, which is why I think it is relevant to this exhibition. With millions of registered users worldwide, Wikipedia has become a very popular online encyclopedia, since it first appeared in January 2001. However, being open to all for editing has its pros and cons.

One downside relating to my question, is that you cannot tell if the creator of a particular page is an expert in that area, or simply chose to write about it for fun. This removes the context of the author and makes us unable to know how reliable the information given is, based on this factor. People may be wary of the information, rejecting it because of the uncertainty and the possibility of the writer being someone with little knowledge in the field.

Often, one way of checking this reliability is comparing the information with a website or book we trust. If the information is not aligned with our other sources we are likely to reject the knowledge. This act of looking to repetition for reinforcement demonstrates what is known as 'the illusory truth effect': people are more likely to believe something to be true if it is repeated. So, in our context of reception, having prior acquaintance with the information may lead us to accept it more.

Wikipedia being an online encyclopedia makes it widely accessible to the general public, allowing the reader to decide whether or not to accept the knowledge. Their decision may be influenced by the reason for their search: if it is for something important they are more likely to verify the information, which could lead to rejection. Similarly, editors, within the context of their job, would be more critical of what they read. Therefore the context of the search is important in influencing the acceptance of knowledge.

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3. KUB (updated in june 2020), The illusory truth effect on social media. Available at: [The illusory truth effect on social media & How it affects you \(kub-uk.net\)](#) (accessed 03/02/2021)
4. BBC, Wall Matthew (2015), Wikipedia editing rules in a nutshell. Available at: <https://www.bbc.co.uk/news/technology-32412121>