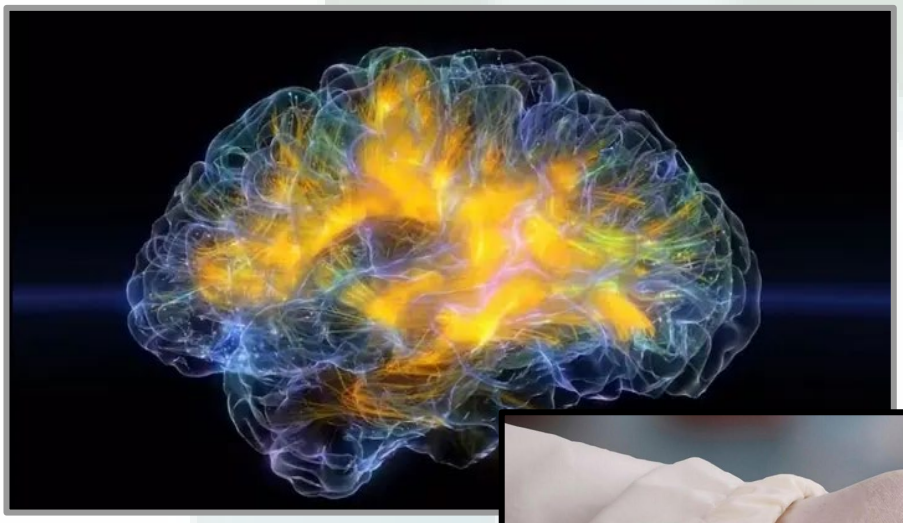
F Fallibroome
Am Academy Magazine
O of
U Unbelievable
S Science

Science Communication and the Idea of the Self







By Oliver Cope and Lizzie Groenewald

Science Communication and Misinformation

During the beginning of the pandemic, scientists' ability to effectively communicate information about the virus was vital. It ensured that the public could properly prevent the spread of the disease, and that government policy would be effective against it. However, due to the rapidly changing nature of this information paired with online speculation, the amount of misinformation spread on COVID, including the effectiveness of mask-wearing and later the vaccine, was extreme.

This is where effective science communication is important, but firstly, what is science communication? In a 2003 paper by Burnes et al, they defined it as "the use of appropriate skills, media, activities, and dialogue to produce awareness, understanding, scientific literacy, and a culture of science within society" Simply put, science communication is when scientists aim to simply convey scientific research and information to a general audience without losing necessary accuracy.

Science communication is essential in improving public literacy in and awareness about science, as well as providing the foundation for science-based public policy on issues such as climate change, new technology or public health. It also helps to remove barriers like complex scientific jargon that would normally lead to significant scientific research being ignored or misunderstood by the public. This in turn improves public trust in science. Even if it is only a minority of the population, distrust in science can lead to harmful outcomes. Such distrust is often fostered by the spread of misinformation, which is more prevalent than ever due to the rise of the internet and social media. This is why tools that help tackle misinformation such as science communication are becoming increasingly important.

The anti-vaccine movement is an example of a source of misinformation which has caused detrimental harm to public health, and was brought to the forefront of public attention during the pandemic, but has existed for many years. Misinformation spread on the effectiveness and safety of vaccines has led to increased public hesitancy in receiving vaccines, for example in the MMR (Measles, Mumps, Rubella) vaccine. This is due to claims of its links to autism, originating from a now retracted 1998 paper, which have since been disproven multiple times by large studies. However, the damage remains and in 2025 the US had its highest number of measles cases seen since the disease was declared eradicated in 2000. 93% of these people either had an unknown vaccination status or were unvaccinated.

Misinformation has led and will continue to lead to damaging situations, and is part of the reason why science communicators have a duty of informing the public. However, we must also ask whether we, as the public, have a duty not only in staying informed, but also in ensuring that the information we receive is from credible sources.

Who am I?

This is what I did yesterday. I woke up. I got dressed. I drank a cup of coffee. I remembered that there was unfinished maths homework due period one. I hurriedly solved the quadratics. I walked to school. Whether or not your morning looked the same as mine yesterday, we can still agree that the “I” in “I got dressed” is the same person as the “I” in “I walked to school”. Despite the different actions I performed, it was distinctly myself who performed them - a “me” which is immutable and constant. Yet even a superficial understanding of the brain conjures a dilemma, since the brain is not a singular unit but an aggregation of many parts. It was the Hippocampus which retrieved the memory of the incomplete homework. It was the Parietal Lobe which deciphered the equations. It was the Cerebellum which coordinated my legs in the direction of school. In this neural cluster of different brain regions, there is no “I” to be found. Rather than answer the question “Who am I?”, I would like to present a couple of cases which may make you question the very idea of a concrete self.

1. **The Split Brain**. Epilepsy patients historically might have the left hemisphere of their brain severed from the right hemisphere. In one setup, the word “walk” was flashed to a patient’s left visual field, something processed by the right hemisphere. The right hemisphere also engages in spatial reasoning, while only the left hemisphere is responsible for speech. The result was the patient getting up and walking, yet when asked why they were doing so, they would make up a fabricated reason (e.g. I wanted to stretch my legs), a reason made by the left hemisphere. It seems that the word “walk” was subconsciously processed, unbeknownst to the conscious mind. Yet that only begs the question, is the part of the brain responsible for speech any more ‘conscious’ than the part responsible for sight and spatial reasoning? Which side of the brain is more “me”?

2. **Blindsight.** In an experiment, patients were told to press a button as fast as possible when a random word was shown on a screen (the main word). However, unknown to them, just before that word was shown, a different word was flashed for a mere 17 milliseconds (the flashed word). For that short period of time, it is impossible for the brain to consciously perceive the word - the patients did not know that they saw the flashed word. Yet it was shown that patients were able to press the button in response to the main word faster if it was related to the word just flashed at them (e.g. “nurse” after “doctor” was flashed). This showed that, without conscious processing, the brain had already semantically placed the flashed word. It seems that here, the brain is perfectly able to situate words in a field of meaning without any conscious intervention, raising the question, are processing and our very consciousness independent of each other? Is there any functional use in us having consciousness when it comes to decoding language? If not, why has evolution made it such that **you** are reading this right now, and not simply a non-conscious lobe of the brain?

Science competition

Answer these random science questions below to enter the competition
Email your answers to Mr Downing to enter (dow@fallibroome.org.uk)
1st correct entry wins a prize!

When was measles declared eradicated in the USA?

.....

What is one thing the left hemisphere of the brain is responsible for?

.....

Roughly how long does it take for the sun's light to reach Earth from the surface of the sun?

.....

What is the fourth state of matter?

.....

Scientist of the month

Year 7 – Edwin Taylor

Year 8 – Isabella Kirk

Year 9 – Tom Childs

Year 10 – Marina Tomu

Year 11 – Rosie Smithson

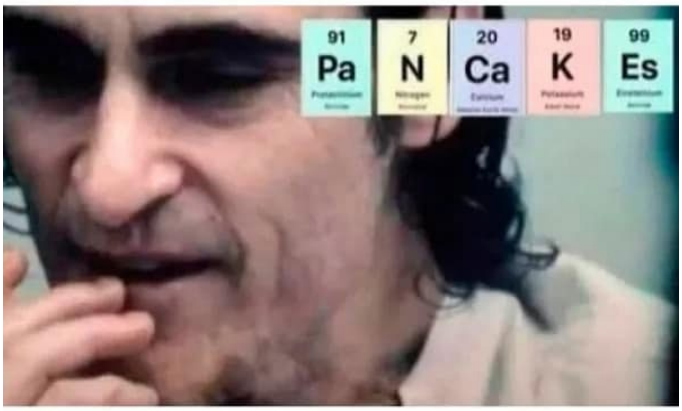
Year 12 – Anna Fenwick

Year 13 – Hugo Douglas

Come and collect your prize from:

Mr Downing in **A43**

Them: Why is your password 917201999?
Me:



You wouldn't get it