
A SHORT ESSAY ON GOOGLE-KNOWING

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INTRODUCTION

This essay attempts to explain my understanding of acquiring and producing knowledge based on two books: **The Internet of Us** by Michael Peter Lynch and **Thinking, Fast and Slow** by Daniel Kahneman. In the former, I focused on the second chapter titled 'Google-Knowing' while in the latter, I focused on the first part titled 'Two Systems'.

Google-knowing is a form of acquiring knowledge through digital means. It is not restricted to using an online search engine. The distinguishing characteristics of this form of knowledge are speed and accessibility. The author argues that for this reason, google-knowing has overshadowed all other sources of knowledge (Lynch, 2016).

Two systems describe our modes of thinking (Kahneman, 2011). System 1 operates automatically and quickly. It is how we know that $2 + 2$ is 4 and how we can easily complete the phrase; 'bread and ...' as 'bread and butter'. System 2, however, entails attention and reasoning. It is responsible for complex computations and decision-making.

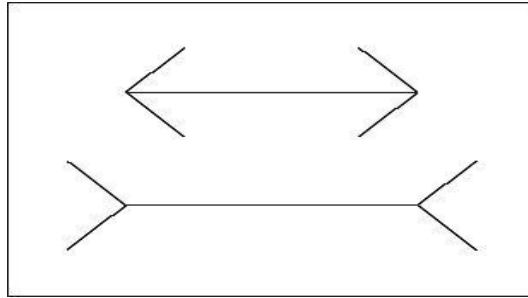
In this essay, I attempt to establish a connection between knowing by googling and the roles system 1 and system 2 play in processing, retaining, and reproducing the knowledge from Google-knowing. The first subtopic talks about the distinction between System 1 and System 2 using some examples from our everyday lives. The second subtopic describes google-knowing and our increasing dependence on it. The third subtopic explores our reasonability with the information from google-knowing which tends to be difficult because System 1 is automatic, and System 2 is lazy.

Automatic and Attentive Modes

Mental activities that require little or no effort are controlled by System 1 (Kahneman, 2011). Opening a door to gain entry and closing it behind you is an action of System 1 but if the door happened to be locked and you needed to search for its key through a new bunch of keys then System 2 takes charge. The operations of System 2 require attention and when attention is disrupted or not enough, errors are bound to occur (Kahneman, 2011). Little or no effort is needed to open a door as long as you can grab the door handle but when you do that and the door does not happen, you suddenly become alert and start to wonder why this is the case.

Another distinction between the two Systems is orienting to a loud sound which is an involuntary action of System 1 (Kahneman, 2011). This immediately mobilizes System 2 which decides if attention should be allocated to the sound. System 2 has the ability to change how System 1 works, by redirecting the default functions of attention and memory. Imagine you decide to walk from your house to the university and halfway through the walk, you realise that you need to increase your pace in order to make it to the university on time. To maintain a faster walking speed that is not natural to you, System 2 has to be activated.

Systems 1 and 2 are not entirely exclusive, as may be suggested by the two examples above. They work together with System 2 mostly in the background, working with little strain. The image below is used to illustrate the famous Müller-Lyer Illusion which is a cognitive illusion (Kahneman, 2011).



System 1 tells you the horizontal line below is longer than the one above but by measuring both lines with a ruler (control of System 2), we see that the two lines are equal. However, System 1 still quietly suggests that the line below is longer because it operates automatically and cannot be turned off at will. It is easy to get rid of this illusion because the lines can be measured, and you are forced to believe System 2. This is not always the case. The will to dismiss the ideas from System 1 and activate System 2 is very important.

The limitation of System 2 is that it is lazy, and it will mostly come into action when the cognitive abilities of System 1 are overcome (Kahneman, 2011). For example, consider solving the following puzzle: A bat and ball cost \$1.10 and the bat costs one dollar more than the ball. What is the cost of the ball? By simple intuition, the ball should cost 10 cents. This is an intuitive, appealing, and wrong answer because the ball actually cost 5 cents. The answer (10 cents) suggested by system 1 could have easily been rejected by system 2 if a little amount of effort was invested into the puzzle. System 1 is impulsive and intuitive; System 2 is capable of reasoning, and it is cautious, but at least for some people it is also lazy.

There are vital tasks where System 1 is not utilised e.g. when writing an exam. These tasks usually require effort, self-control and may be time-constrained, and System 1 immediately knows that System 2 is in charge. However, System 2 easily suffers from busyness and depletion. When writing an exam, you will most likely not notice if someone who is not a part of your class seats to take part in the exam.

This is because System 2 is engaged. And if after the exam, you are asked to sit for another exam that is not related to the previous one, you will refuse to do this except if given a strong incentive to do so (Kahneman, 2011). At this stage, System 2 is depleted.

The Digital Source of Knowledge

When I am faced with a question for which I have no answer, the first thing my instinct tells me is to google it. In other cases, I might not be sure of the answer I think of, so I confirm this by googling it. As a result, I have gained new knowledge and can move on to the next thing. Without access to this source, I would have to look for other means to get the answer to my question. If the relevance of the answer is low compared to the effort I have to put in, I am certain I will forego both the answer and the question.

Google-knowing includes knowledge from search engines and the suggested websites, social media (Facebook, LinkedIn, Twitter, Snapchat, Instagram) and other sources connected to the internet such as WhatsApp. Google-knowing is knowledge by testimony because it is dependent on others; those who upload the information via these platforms (Lynch, 2016).

A major characteristic of Google-knowing is the abundance of resources that it presents to you. For example, when a keyword is entered into the google search engine, a lot of results that match the keyword are presented to you and for each of these results, there is a rank of importance (Lando, 2022). These results are usually from external websites which are independent of the search engine, they may be publicly or privately owned and may or may not have some authority in the domain of information they provide. The rank of these websites is mostly

determined by past visitors' engagement. Also, the websites can pay to be ranked high in the search results.

The ranked result in the google search engine is similar to the phenomenon of information cascade in social media. When people post or comment on a post in sequence and a pattern is identified, the posts/comments that make up the pattern tend to appear first and people who later visit the posts may tend to follow the crowd (Lynch, 2016). Imagine scrolling through your Twitter timeline and you see that there is an argument about Working From Home (WFH) being better than working on-site. If many people have commented their opinions in favour of WFH, there is a higher chance that you will also believe this or at least give it more weight, especially if you do not already have a formed opinion of either work situation. Another way to understand this is that the more people like a photo, the higher the chances of even more people liking the same photo.

Google-knowing is also fast (Lynch, 2016). If I wanted to know how to pass a thread through a sewing machine, I could watch a YouTube video and do it in minutes. The link to the video will always be available and I do not have to memorise the steps as long I have access to the internet. This form of knowing is called Receptive knowledge. I know the machine will work if I do as it is done in the video, but I do not know *why* it was done that particular way and not in another way. An attempt to know *why* will provide me with Reflective knowledge.

Receptive knowledge is simply taking in '*the facts*' such as when we wake in the morning and see the alarm clock, smell coffee or remember we are late (Lynch, 2016). This is not intellectual and can be compared with how babies know. An organism's default attitude towards its receptive capacities is trust and M.P Lynch worries that Google-knowing is already taking on the hallmark of receptivity. He has three reasons for this: first; Google-knowing is the first place we look whenever

we need information, second; Google-knowing is fast and requires minimal effort, third and as a result of the first two points; we find it easier to trust digitally acquired information.

Although debatable, Google-knowing may have already taken over other ways of knowing and may be seen as a primary source of information while other sources are secondary. This is not totally because of those who seek information but rather, those who have the information to share. Information that is stored offline usually have some online version associated with it. Accredited schools have degrees that can be completed online, governments have websites where they share national updates, and even companies have social media accounts for corresponding with their clients. So, most of the information that can be found offline can also be found online and if it is faster to chat with your bank's customer care via WhatsApp, why bother going to the bank's branch?

The Quality of Google-knowing

Earlier, I wrote about watching a tutorial video to thread a machine. If I have to do the same thing some months later, it is highly unlikely that I will be able to do so without the video. This is a case of System 1 being in charge while I watched and threaded the machine. No effort was made to understand the process, I called this receptive knowledge. To apply reflective knowledge to this scenario, I would process the connection of the thread, I would also pause the video at intervals and attempt each step of the threading process. I would carefully notice how the thread goes through the machine and probably rethread it multiple times until I have committed it to memory. Hence, System 1 is associated with receptive knowledge while System 2 is associated with reflective knowledge (Lynch, 2016).

One may argue about the distinction between receptive and reflective knowledge based on the context of the above example. Before I finally settled on the video that would enable me to thread my machine, I would have gone through other videos for threading machines not similar to mine. I would have to identify machines that are for sewing, and then sewing machines that are similar to mine. For this, I am actively using System 2 and when I finally find a fitting video, my System 2 might have become depleted such that I use System 1 to simply watch and thread. I have used both Systems 1 and 2 to thread the machine and it would be incomplete to describe the knowledge by which I threaded the machine as receptive. Also, the next time I need the video, I would not have to go through the random search of unrelated videos.

Reflection does not only improve knowledge by memory. It is equally good for getting specific answers to questions, especially when Google-knowing. Of course, not all answers can be found on the internet however, for every question you may think of, someone has some information about it on the internet. System 1 has the ability to translate a target question (assessment you intend to produce) into a heuristic question that is easier and answer it (Kahneman, 2011). With System 2, you are able to reflect on the heuristic answer and adjust it so that it answers the target question. A target question might be 'What are the effects of taking drugs with milk?' We know *apriori* that these effects can either be good, bad or neutral and since google-knowing relies on keywords to give corresponding answers, the heuristic question becomes 'Is milk good for taking drugs?' which is easier to find out with google-knowing. System 2 has the ability to reject the heuristic answer or modify it, but a lazy System 2 will endorse it.

'Google-Knowing is knowing only if you consult a reliable source', says M.P Lynch. Previously, we saw that resources from google-knowing may be subject to bias.

According to the set algorithms, the relevance of online materials is usually determined by the size of their engagements. Thus, the focus is on identifying reliable resources from a list of popular ones. This is a task for System 2 since it has the capacity for reflection (Lynch, 2016).

There are two major challenges when it comes to identifying reliable resources. One is being able to critically analyse the materials you come across and the other is not falling into the trap of information cascade, and they often occur at the same time and require the cognitive process of System 2. By overcoming these challenges, we are not being only receptive but also reflective in our learning processes (Lynch, 2016).

In order to critically analyse online materials, we need to look through the content and its sources. The content has to be consistent with itself and with our previous knowledge. This can be tricky because System 1 is an associative machine that constantly checks for coherence and it may identify one that does not exist. An example is reading a question that asks: “How many animals of each kind did Moses take into the ark?” (Kahneman, 2011). System 1 will see the coherence between *Moses* and *ark* as words in a biblical context however an active System 2 will notice that Moses did not take any animal into the ark and it was Noah who did so. Facebook and Instagram are both owned by the same company, Meta. If a friend on Facebook is also a mutual follower on Instagram, you are likely to see their shared posts on both platforms. The same happens with advertising. Adverts that are shown on Facebook will also be shown on Instagram. Given a situation like this, System 1 will be quick to look for coherence when scrolling through either app.

Not all information from information cascades is misleading. You can genuinely like a photo that already has over a million likes. You can also abandon a belief that you have had for so long after reading other people's opinions of it though there is a high chance that many of the opinions might have originated from a System 1. The key aspect is to use critical thinking and extreme caution to decide if a piece of information should become knowledge. We cannot possibly figure out everything by ourselves (Lynch, 2016) hence the need to defer to the testimony of others.

Nevertheless, the quality of google-knowing cannot simply be judged by being receptive and reflective. It also involves being reasonable which is important for filtering truth from falsehood given that the internet is a knowledge-testimony machine, made up of other people's opinions (Lynch, 2016). Being reasonable means laying out or requesting evidence of credibility to support any information claimed to be true. Such evidence may include degree, references, or word of mouth. In the case of the video tutorial on threading a machine, the evidence might be to look through the profile of the video creator for details that show their expertise with sewing machines or the comment section for contrary methods of threading. After all, if we are to seek information offline, we ask people that we believe to have a certain level of expertise about the subject than we do. For example, when we talk to the family doctor about an ailment or a spouse about the children. We expect them to share their opinions with us in line with what we already know. The same scrutiny should be applied to the online acquisition of knowledge which, by the way, can only be achieved by an active System 2.

CONCLUSION

We identified System 1 as an automatic mode of thinking that uses less effort and System 2 as an attentive mode of thinking that requires effort. System 1 is simply receptive and quick at downloading facts while System 2 has the capacity for reflection and uploading reasons. System 2 has a natural speed at which it processes information while working in the background of System 1. When not in the background, System 2 is prone to busyness and depletion and so, may not always be available. Understanding this limitation of System 2 can help manage how we choose to absorb online information.

We defined Google-knowing as a way of knowing through the internet. Google-knowing gives us easy and quick access to so much information that it has the tendency to render our System 2 lazier than normal. System 1 being impulsive and intuitive can easily take the lead when we begin to surf the internet which may result in illusion, jumping to conclusions or substituting a target question with an heuristic question for the sake of answering an easier question. When this happens, we consume information that may be false and think we have knowledge whereas it is *justified false belief*. While the use of System 1 for cognitive processes is not bad, it can lead to errors that could have been identified by System 2.

Reasons are the evidence that supports the credibility of a piece of information which is an important criterion for the selection of sources. Reception, reflection, and reasons jointly determine the quality of information we get from the internet.

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