

**‘What does Artificial Intelligence mean for Christians?’
(Bishop Grosseteste lecture, Lincoln Cathedral, 4 Oct 2025)**

- What is Artificial Intelligence, and what does it mean for Christians?
 - This question is growing more complicated by the day at present, as we realise ever more fully the impact of AI on our children, on our societies, on our planet. So this will be a rather loose set of thoughts to help orientate you in what is rapidly turning into one of the most amazing and challenging technological developments of our time.
 - You’ll be aware that Artificial Intelligence raises a lot of ethical questions. For instance, how should students in school and university relate to AI, if it’s an easy way to get quick answers without much effort?
 - Is the carbon footprint of AI worth it? How can we mitigate against its enormous energy use and potential environmental impact? And what about AI in autonomous vehicles, or AI research in defence – the infamous killer robot? How can we understand the implications of these developments, and how can we have our say, and perhaps influence the ways these developments are regulated and controlled? Or are we largely powerless, in the face of massive commercial enthusiasm in pushing ahead with new kinds of AI?
 - The ethical questions are becoming ever more pressing, but I’m going to step back and take a wider view in this lecture, to ask about who are we – as humans and Christians – that we have made these machines – what do they tell us about who we are?
 - AI raises important questions about human identity, especially insofar as we value our human intelligence as a key component – perhaps the central component – to our human identity. After all, we prize our intelligence and our human mind as central to whatever it is that makes us human. We call ourselves *Homo sapiens* – the wise human. Our intelligence, wisdom, creative thought, ability to solve problems – these are the things we hold most dear about our humanity.
 - Of course, much of what we call AI is just really smart computer programming, but insofar as there are movements in AI technology that aspire to replicate human intelligence, perhaps one day to exceed it, AI raises the question of whether it will, in effect, become human, or more than human.
 - And this issue is particularly important for Christians and Jews, because of the biblical teaching in Genesis 1 that God made us in his image. If we interpret this passage as telling us that humans are somehow special in God’s sight – made for a distinct purpose in the world – what does it mean that we are now making machines in our image? If we can make machines that are more intelligent than humans, does that mean they will become more God-like – more in God’s image – than us?
 - So this lecture will be about Christian perspectives on human identity, asking what is distinct – or perhaps unique – about humans, and is it still unique in light of the AI

revolution. This has been a massive area of debate in Xn theology, but it explores a universal issue which is found in most of the world's religions, namely the position of humans in relation to other creatures and the Creator.

- **SUMMARY**

- What is AI?
 - Transhumanism
 - Human 'uniqueness'?
 - 'Made in the image of God'
 - What does Artificial Intelligence mean for Christians?
- What is AI?
 - I recommend this report from the Vatican's AI Research Group on the theological and ethical implications of AI. It's recent (2024), and it's comprehensive while not being too voluminous, and is downloadable for free.
 - So what is AI? AI is both ubiquitous and highly amorphous. The terminology is so popular that it's used for a wide variety of technological devices, from so-called 'smart' devices in your home like thermostats, through various kinds of robots, to the large language models (LLMs) such as ChatGPT, Microsoft's CoPilot, and Google's Gemini, we can answer questions, chat with you, and even construct plausible text for you on any topic under the sun (although its factual accuracy is often rather dubious).
 - It's clearly hard to define AI precisely, so let's start with the history.
 - The modern era of AI began with British mathematician, Alan Turing. In the 1930s, Turing introduced the concept of a universal computing machine, which can perform calculations step-by-step (what we call an algorithm today). In Turing's thought experiment this machine can calculate anything that is calculable. If the machine can't calculate it, then there doesn't exist any other kind of machine that will. The point is to investigate what kinds of things can be computed, and what can't. Turing's work is foundational to modern computer science.
 - Turing is also famous for what we call the Turing test, or the 'imitation game'. Turing pitched this as a test to see whether we could ever say that a machine can think, or at least, exhibit something like intelligence. In the test, a machine is hidden behind one curtain, and a human behind another. Using a computer terminal, we ask a series of identical questions of both, and if we can't tell the difference in the quality of answer between the two, then we say that the machine has the equivalent intelligence to a human.
 - No machine has yet passed the test unambiguously.
 - You will have seen the CAPTCHA test online, to tell if you are a human not a bot. The test asks you to identify all the motorbikes in a series of images, or all the birds, or to decipher some distorted series of letters, or something like that. It's based on the Turing test.

- The next big step in the history of AI came in 1956 at the famous Dartmouth Conference, where the term ‘artificial intelligence’ was coined. The aim of the conference was to find out how to make computing machines use language, form abstractions and recognise patterns, and move towards solving problems that only humans can solve, and perhaps even for the machines to teach themselves – what we now call ‘machine learning’. The organisers of the conference thought that significant progress could be made if they assembled some scientists for a summer.
 - That seems quaintly optimistic now, since we are only beginning to solve some of those problems 70 yrs later. But the conference was a massive step forward in recognising that perhaps machines might be able to solve problems which require human intelligence. At any rate, the term, ‘Artificial intelligence’ stuck.
 - Some of the biggest developments since then, which have enabled the current boom in AI, were **machine learning** and **neural networks**.
 - **Machine learning** finds patterns in massive amounts of data, such as numbers, words, or images. If there’s a way of digitising the data – converting it into symbols and then numbers – then a computer can manipulate it by performing statistical calculations, and can learn from it by recognising patterns in the data.
 - **Neural networks** are computer programs which emulate the structure of the human brain. As you’ll know, human brain cells – neurons – can reconfigure their connections and change the way they network with each other based on our experiences. They are continually doing this. The human brain is, as far as we know, the most complex entity in the entire universe, and it keeps learning throughout our lives by changing its structure. What if we could create machines that compute in the same way? So in AI, a neural network consists of artificial neurons wired together by sets of mathematical operations called algorithms. When a new piece of data is fed into a neural network, it cascades through the algorithms until the final result comes out the other end. An untrained neural network will produce nonsense. But train it with vast amounts of data, and it will recognise patterns and process the new data accordingly. A trained neural network is called a **model**.
 - Now we move to the last decade, with the appearance of **Large Language Models (LLMs)**, like ChatGPT, Microsoft Copilot, Gemini, and so on. They’re trained on enormous amounts of data – the entire internet; billions of pages of text, far more than a human can read in their lifetime. Learning from all this, LLMs can perform very sophisticated imitations of human language, images, art, and computer code.
 - You will be aware tho, that even the best of our current LLMs – while impressive in their ability to construct language and images – have enormous limitations, especially in what are called hallucinations, where they make plausible stuff up in response to your questions. It’s not difficult to make an LLM hallucinate, but unless you know the topic well, you may not realise. Also, hallucinations turn out to be an enormously difficult problem to solve in computer science; no one is currently sure how to create a machine that can chat with you without it also hallucinating from

time to time. This is why it's always a good idea to exercise caution when using an LLM for anything factual.

- But in many cases, they're pretty good. To give you an example, I asked Microsoft's Copilot (an LLM) to define AI, and this is what it came up with. It's pretty good, as accurate as anything I myself wd say.
- Artificial intelligence, or AI, is a branch of computer science focused on creating machines or software that can perform tasks that typically require human intelligence. These tasks include problem-solving, understanding natural language, recognizing patterns, and learning from experience.
 - AI is a broad field with various sub-disciplines, including:
 - - **Machine Learning**: ...
 - - **Natural Language Processing (NLP)**: ...
 - - **Computer Vision**: ...
 - - **Robotics**: ...
 - AI can be classified into two main types:
 - - **Narrow AI**: Designed to perform a specific task, like voice assistants (e.g., Siri) or recommendation systems (e.g., Netflix's suggestions).
 - - **General AI**: A more advanced form that can understand, learn, and apply intelligence across a wide range of tasks, similar to human cognitive abilities. This is still largely theoretical and not yet achieved.
 - ...
 - What sparked your interest in AI?
 - Of course, being a chatbot, Copilot has to finish with an annoying question! But the rest of the answer is pretty accurate.
 - I particularly want to highlight General AI, which is often referred to as AGI (Artificial General Intelligence) or even ASI (Artificial Super Intelligence). This is an important aspiration in the field, to create technology in the human image, thinking like us, or perhaps even exceeding our intelligence. At the moment, it's just that, an aspiration. And until problems like hallucinations are solved, it will remain an aspiration.
 - Still, the success of AI has been inspirational to some people, who think that it will transform the human condition. This is a position often referred to as transhumanism.
- Transhumanism
 - Transhumanism is a strongly future-oriented movement that explores how emerging technologies—especially AI—can radically transform human capabilities, to the extent that we might even speak of the post-human future. Transhumanism looks for a future where humans transcend biological limitations through technological augmentation, including cognitive enhancement, life extension, and even the merging of human consciousness with machines.
 - AI plays a central role in this vision. From neural implants that boost memory to AI-driven prosthetics and brain-computer interfaces, transhumanist thinkers see AI not

just as a tool, but as a transformative partner in human evolution. The ultimate goal is to create a post-human condition where intelligence, identity, and agency are no longer bound by biology.

- Ray Kurzweil is one of the best known transhumanists. He's famous for his prediction of the singularity, where machine intelligence overtakes all human intelligence combined. At this point, machine intelligence and humans will merge. He thinks this will happen by 2045.
- Clearly, transhumanism is an amazing set of beliefs. Is it realistic? We don't know, yet. At any rate, it teaches us of the need to reflect *now* on the meaning of AI for our entire species, to make sure we design futures that reflect our deepest values as human beings. But transhumanism also presses us to think about human identity.

What happens to human identity when machines become indistinguishable from minds?

- This is a very serious question, especially for Christians, because there's a venerable strand of theological tradition (going back at least as far as Augustine) that has held our rational and spiritual intelligence to be essential to our human identity as made in the image of God. If machines have the same intelligence, are they made in the image of God too?
 - Yes, this is potentially a very serious issue for Christians, and theologians have written a great deal about it recently.
 - Let's break it down, by looking at what's often called 'human uniqueness' – the theological specialness of humans compared with all other animals. What can we say about human uniqueness, looking at the human mind, and other features we might think are special/unique to humans?
- Human uniqueness
 - Theologians have looked at quite a few different features of human identity, trying to establish what exactly it is that sets apart from all other species: bipedal gait, theory of mind, consciousness, intelligence and problem-solving, language, culture, and morality.
 - First, bipedal gait. Other apes can walk on two feet for short distances, but they're not as well adapted for it as humans, who of course, can really *only* walk on two feet, since we walk *upright*. Thomas Aquinas thought this was special about us, since our upright stance allowed us more readily to contemplate the heavens. But by and large, most theologians who've wanted to make a case for the special uniqueness of humans have looked at our human intellect and consciousness.
 - One possible candidate for a special kind of human intellectual ability which can be verified scientifically is our 'theory of mind'. In our social interactions with other humans, it's important to us to recognise that others have thoughts like us, and this is an important factor in controlling how we act socially. I think about your thoughts and that enables me to infer, predict, and explain your actions – I have a theory of mind, just like you, built up by experiences in relationships, social settings, basic

interacting and so on, about how humans behave and how it relates to what they think. Humans can sustain quite complex mental relations in this way. For instance, I could say to you, 'Nick wants me to think that Sheila doesn't like me', and you'd have no problem understanding, in spite of the fact that there are several layers of relationship invoked in that sentence, since four individuals are involved: you, me, Nick, and Sheila.

- Or, think about this classic experiment – a toddler, let's call her Emily, is sitting in her high chair in the kitchen and sees Dad come in and put a bar of chocolate in a cupboard low down. Dad goes out. Mum comes in, sees the chocolate is within Emily's reach when she's toddling around, and moves it to a higher cupboard. Emily sees all of this. Later on, Dad wants some chocolate – where should he look? Toddler Emily will assume that Dad mysteriously knows what she knows, namely that the chocolate is in the higher cupboard. But of course, we know that Dad will look in the lower cupboard and then be surprised the chocolate isn't there. Emily, aged 3 years old, is unable to reflect on her Dad's thoughts, unable to realise that he doesn't know where the chocolate really is, she just assumes that Dad's thoughts are the same as hers. But by the time she's 5 or 6, she'll have no problem realising the difference. This is a classic experiment demonstrating how a theory of mind develops at a relatively early age in humans. I should note, though, that not all adults have a clearly-identifiable theory of mind, especially those who are some way along the autistic spectrum. This suggests straightaway, that theory of mind isn't a universal to all humans.
- Do other animals have a theory of mind? This is hotly disputed by cognitive scientists, and there are many problems involved in performing the same kind of experiment as the chocolate bar with non-human animals. While many results suggest that no, other animals such as chimps are probably still at the human toddler stage, there is recent work which suggests that bonobos and ravens do indeed have something like a theory of mind. But like I said, the situation is unclear. Theory of mind might be a way of marking humans out as distinctive (at least from the age of 5 and up), or it might not.
- What about human consciousness – the biggest unsolved problem in science – how unique is this? Here again, we find that humans are not unique – nor even unusual – in possessing consciousness, which appears to be widespread in the animal kingdom and beyond.
- An international panel of prominent neuroscientists met to consider precisely this problem in 2012, and they gave their findings in 'The Cambridge Declaration on Consciousness'. This is an excerpt, concluding with the Declaration:
 - '[N]eural circuits supporting behavioral/electrophysiological states of attentiveness, sleep and decision making appear to have arisen in evolution as early as the invertebrate radiation, being evident in insects and cephalopod mollusks (e.g., octopus). Birds appear to offer, in their behavior, neurophysiology, and

neuroanatomy a striking case of parallel evolution of consciousness. Evidence of near human-like levels of consciousness has been most dramatically observed in African grey parrots...**We declare the following: “The absence of a neocortex does not appear to preclude an organism from experiencing affective states. Convergent evidence indicates that non-human animals have the neuroanatomical, neurochemical, and neurophysiological substrates of conscious states along with the capacity to exhibit intentional behaviors. Consequently, the weight of evidence indicates that humans are not unique in possessing the neurological substrates that generate consciousness. Nonhuman animals, including all mammals and birds, and many other creatures, including octopuses, also possess these neurological substrates.’**

- Note the terminology. An ‘affective state’ is an emotional state, where there is a physiological response to something happening in your brain, for instance, crying at sad news. Many non-human creatures seem to exhibit signs that they experience conscious and affective states, in spite of the fact that these creatures might not have a neocortex. The neocortex is the outer part of the brain in mammals, involved in higher cognitive functions like spatial reasoning, conscious thought, and language.
- It would seem then, that humans are far from unique in possessing consciousness – consciousness is widespread in the world of life. Consciousness cannot be considered special then: it’s very widespread among living things.
- So I will return to my previous slide to continue with the list of possible unique features of humans.
 - How about intelligence and problem-solving? This is where AI obviously appears as a possible challenge to human uniqueness. However, determining the quality of an individual’s intelligence is notoriously difficult even among humans, but it’s often linked with the ability to solve problems, and it seems that humans are highly adept at solving a wide variety of problems using tools, technology, and abstract conceptualising, including writing, maths, medicine, culture, the sciences, the arts, etc, etc. This obviously leads directly into the next categories of language and culture, and it’s probably worth taking them all together. We know that other animals use tools, especially apes and corvids. And anyone who has spent any time around animals such as cats and dogs, will realise that they have very effective ways of communicating even if they’re non verbal. So the use of tools, technology and language are certainly vital to our success as an intelligent, problems-solving species, but we share these abilities to some degree with other animals. In other words, we are different in degree not in kind from other animals. Likewise, human culture is highly distinctive, especially when we think of the sciences, arts, humanities, and religions, but do they constitute us as unique? Perhaps. After all, we have no evidence that any other species has developed these to any degree at all, and our culture relies to a greater or lesser extent on having a theory of mind in the first place. For instance, theory of mind is important in religious devotion – the ability to

reflect and think upon what your god thinks and what your god thinks about you is important in prayer when you see your god in personal terms. In addition, you need a theory of mind to understand the social dimensions of religion: the fact that other people might think and believe (or not) like you. Therefore, although religion of some kind is probably not altogether beyond intelligent, socially adept animals like elephants and chimps, it's probably only humans who can develop sophisticated religious collaborations with each other and with a god.

- And of course, this raises the question of whether a machine will ever be religious. If it's meaningful to credit a machine with human-like intelligence one day – that's the point of Artificial General Intelligence – then perhaps machines will develop their own religious beliefs, or adopt ours. Is this feasible? We don't know..
- But it leads me to our final category: morality. Is this unique to humans? It's hard to tell without an ability to interrogate other creatures about their beliefs, but if we regard altruism as a sign of moral action then it probably isn't unique to humans, since altruistic behaviour is seen among other creatures, especially those with well-developed social cultures. Again, just think of your dog (but perhaps not your cat).
- There are perhaps other qualities that we value as humans which we might like to add to the mix, for example virtues like love, honesty, simplicity, and so on, but it seems to me that I've covered a fairly comprehensive range of natural features of the human condition. And I hope you can see that not a single feature can be invoked reliably for making a case for human uniqueness.
- In my opinion, it's not possible to make a watertight case for human uniqueness, since it's clear that, for every category we might call upon, humans are different in degree not in kind from other creatures.
- And if we're only different in varying shades from other animals, perhaps AI isn't a challenge to our human uniqueness then, since we were never actually unique the first place.
- If so, what does that mean – our lack of uniqueness – for the biblical teaching that humans (and only humans) are made in the image of God? We clearly need to examine that.
- The main scriptural text is found in the Gen.1 creation story, vv.26-27. Don't worry if you can't read the Hebrew, because I won't make anything of it here.
 - 'Then God said, "Let us make humankind in our image (בְּצִלְמֵנוּ), according to our likeness (כְּדִמוּתֵנוּ); and let them have dominion over the fish of the sea, and over the birds of the air, and over the cattle, and over all the wild animals of the earth, and over every creeping thing that creeps upon the earth." So God created humankind in his image (בְּצִלְמֵוֹ), in the image (בְּצִלְמֵם) of God he created them; male and female he created them.' (Gen.1:26-27)
 - Note that Gen.1 places humans in the framework of all other creatures, but places them at the end of an ascending sequence, alone bearing God's image and therefore suggesting that humans stand in a special relationship with God which no other

creature has. Also, while God tells other creatures to be fruitful and multiply, humans are given an additional task by God, to have 'dominion' over the other creatures. Also note that the terminology of 'image of God' is found almost nowhere else in the Hebrew Bible, so in trying to understand this concept, it's mostly this passage we have to deal with.

- What does the 'image of God' language mean then? Well, I will cut to the chase here, because there has been an enormous amount of scholarly discussion on this recently, and say that we find four kinds of reading, four interpretations of the image of God.
- The first is called the 'ontological', or 'substantive' interpretation, which has dominated Christian theology since the time of the early church, but is now losing its edge, thanks to the scientific questions about human uniqueness I just mentioned.
 - According to this interpretation, the 'image of God' resides in that which is special about the human ontology or substance; there's something about what humans are in physical terms which makes them in 'the image of God'. Now it's impossible to overstate the importance of this interpretation, because not only has it dominated theology for 1500 years, but it has informed all of Western anthropological thought until Darwin. For, if we ask what is the particular human substance, or particular feature of human nature, which constitutes us in the 'image of God, we run through exactly those categories that I looked at just now when I looked at human uniqueness, answers which relate to the supposed uniqueness of humans among all of the earth's creatures. In short, the substantive interpretation tends to assume human uniqueness, and vice versa.
 - And most versions of the substantive interpretation therefore run into problems when they say that the image of God resides in human consciousness, or the human mind, or the human rational soul, or some other features of human specialness. As I explained earlier, most of them are vulnerable to the point that humans are different in degree not in kind from other animals.
 - As is the most famous version of the substantive interpretation, from Augustine, which teaches that the image of God resides in the human rational soul, our mind.
 - 'The image of the creator is to be found in the rational or intellectual soul of humanity...Although reason and intellect may at times be dormant, or may appear to be weak at some times, and strong at others, the human soul cannot be anything other than rational and intellectual. It has been created according to the image of God in order that it may use reason and intellect in order to apprehend and behold God' (*de Trinitate*, XVI.iv.6).
 - There you have, in a nutshell, the belief which has dominated Western thought for over a millennium, and which is still widespread today, that the human rational soul – which contains the heart of our identity and intellect, our thinking, living mind – is the image of God. Notice that you won't find that interpretation in the Bible; it comes from the early church.

- I will mention two modern versions of the substantive interpretation related to this. These have been popular in the S+R field recently. The first relates the 'image of God' to our human ability to discern order in the world through science. We ask, why are we humans so good at science? This connects closely to the success of science – why is the world so rational? It could easily have been otherwise. Is there a connection between our rationality and the mind of the One who made it all? Well of course, goes this interpretation: because we're made in the 'image of God', which is constituted in our intellect, we have a privileged insight into the Mind of God. The Judeo-Christian view of creation sees a direct correlation between the mind of God and order in creation. This is why science works.
- The second of these kinds of recent interpretations sees the 'image of God' as residing in human culture, and this comes from the leading S+R scholar, Wentzel Van Huyssteen. He believes that human uniqueness is constituted in the outpourings of the human mind as much as in its inner workings. Mind arose from evolution, but it has led to science, art and religion. Humans are unique not so much in biological terms as our many social and cultural accomplishments.
- So in spite of challenges from evolutionary thought, which points out that humans are different in degree not kind from other animals, the substantive interpretation still has some modern supporters.
- Let's turn to the other interpretations of the imago Dei, although I'll be briefer here. Ironically, they're nowhere near as popular as the substantive interpretation, even though they're much less problematic from a scientific perspective.
 - The second interpretation, the functional interpretation, explains the 'image of God' as a specific function, task, or vocation given to humans by God. In this interpretation there's nothing substantively unique about humans compared with other creatures. And note that this is the view widely held by biblical scholars who, as I pointed out when we looked at the 'image of God' passage in Gen.1, point to the ANE background and say that humans are, like earthly kings, God's representatives on earth. We are here to exercise God's dominion, and those of you familiar with modern religious thinking on the ecological crisis will recognise this is similar to the idea that humans should be God's *stewards* of creation, a role that we have handled spectacularly badly since the Industrial Revolution.
 - The third interpretation is the relational interpretation. The big name attached to this one is the theologian Karl Barth, who argued that the image of God doesn't consist in anything humans are or do but rather in the gift of relationship with God. The 'image of God' therefore consists in our relationship with God and then our relationships with each other, most clearly exemplified in Jesus, who alone is directly the image of God.
 - The final interpretation is the eschatological interpretation. Here, the 'image of God' is idealised by the risen Christ, and therefore belongs to our eschatological future.

Humans are not, at the moment, made in the full 'image of God', but we will be so in the fulness of time, when we attain Christ's resurrection state.

- The point with this interpretation is that it's exclusively Christian, asserting that Christians are of Christ, so they need to construct their anthropology accordingly, where Christ is now. That means, rather than looking at the human nature of this world, which Christ has left, we need to look at Christ's heavenly/risen nature. Therefore, the only academic discipline that can inform our anthropology, is theology, not the sciences, arts or humanities. This interpretation would also lead us to conclude that humans who aren't Christians can never aspire to become in the 'image of God'. Is that a problem or not? I think that depends on your attitude to Christian exceptionalism, which takes us into a much bigger debate about the relationships between religions.
- For myself, I am probably most in favour of the functional interpretation, but this leads me to note that deciding between these interpretations isn't a matter of making an either/or decisions, since it's possible to hold several of these interpretations together in tension, and indeed, the closer you examine them the more they tend to overlap in any case.
- Let me summarise where we've got to.
 - In Christian theology, human identity is bound up with the crucial idea that humans are made in God's image. But clearly there are several different ways of understanding what that means, each of which sees humans in a different relationship to the rest of creation. Quite simply, what we believe about human nature says a lot about what we think of nature. Our mind and intelligence probably aren't significant in determining the divine image, so AI is probably no threat there.
 - At any rate, attempts to make humans out to be specially unique among all animals are fraught with problems, and rather precarious to maintain in today's scientific world.
- In this light, let me turn to my final question: What does AI mean for Christians?
 - Actually, rather less than is often feared, if you've followed me this far. Remember that there were two kinds of AI: Narrow and General. Narrow is concerned with specific tasks, while General AI is the idea (hope?) that a machine will one day be able to operate across a large range of problems like a human, effectively using its intelligence to think 'generally'.
 - But General AI is out of reach, despite the rhetoric you will hear, and perhaps always will be, in spite of the hopes cherished by transhumanists. (You will realise that I am quite sceptical about the transhuman future).
 - The problem is that the LLMs like Chat-GPT are very impressive in their ability to create plausible speech or prose (until you fact check them), but the way they work is far removed from the way that humans construct language.
 - Personally, I very much doubt that General AI will ever emerge from these models.

- Look at how Chat GPT works. When it constructs prose for you, as you're chatting with it, it builds up every sentence by starting at the beginning and choosing the next word based on the probability of what should come next in the sentence. And of course, because it can trawl the entire internet it has a vast database of examples to help it determine which word humans are most likely to use at this point in this particular sentence.
- In other words, when Chat GPT writes a paragraph for you on, say, how science and religion relate to each other, what it's doing is just asking itself over and over again, given what I've written so far, what word is a human most likely to write next?
- But this is a numerical calculation of probabilities. Every word in the language is called a token, effectively assigned a numerical value. Chat GPT is simply calculating string of probabilities of what token would be most likely to come next in a string of tokens.
- This means that the chatbot does not construct language like a human. It's a very sophisticated probability calculator working from an immense database.
- Chat GPT doesn't possess anything remotely resembling human understanding of language, and therefore, presumably has nothing resembling human consciousness. It's an illusion, which works because we are social animals who are fascinated with other social animals like us, who can relate to each other through language.
- This is what Noreen Herzfeld says about LLMs like Chat GPT, in this important book, *The Artifice of Intelligence*.
 - 'The machine has no goal or strategy of its own. It gives an illusion of self. And we, as the social beings we are, fall for that illusion...because we crave relationship and, like children who talk to their teddy bears or imaginary friends, we imagine an interlocutor even though we are really only talking to ourselves' (p.66).
 - So 'What does AI mean for Christians?' My own feeling is that AI means very little for our *identity*, beings who are made in the image of God, at least for now. LLMs like ChatGPT are so amazing and so concerning precisely because they are able to imitate that identity so well, but they aren't even close to actually owning it. An LLM works precisely by generating an illusion of self, an illusion of the image of God.
 - On the other hand, what we do with that illusion as *ethical* creatures with a divine mandate to exercise God's dominion over the earth, is another kind of question. AI is a tool, and as with any other new tool, we need to learn how best to use it for human flourishing and care of our world. But let us not confuse the tool with the human who wields it, who is truly made in the image of God.