English Learning for Curious Minds

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Transcript & Key Vocabulary

Episode #155
The Trolley Problem
4th May, 2021

[00:00:00] Hello, hello hello, and welcome to English Learning for Curious Minds, by Leonardo English.

[00:00:12] The show where you can listen to fascinating stories, and learn weird and wonderful things about the world at the same time as improving your English.

[00:00:22] I'm Alastair Budge and today we are going to be talking about The Trolley Problem, the tough philosophical and **ethical**[1] question that asks us to consider whether we would **sacrifice**[2] a life to save another.

[00:00:37] You may well have heard of this problem before, but we are going to explore all of the different ideas around it, diving into the **ethics**[3] and philosophy of how, and under what conditions, certain decisions can be considered acceptable.

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[1] relating to beliefs about what is right or wrong

[2] give up something in order to gain something else

[3] a set of beliefs about what is right or wrong

[00:00:53] It might seem like a **theoretical**[4] and unrealistic question, but we will see that it's actually one that is very relevant to our lives, with the development of **autonomous**[5] vehicles, of **self-driving**[6] cars.

[00:01:07] I want to thank Carmine, a recent economics graduate from the University of Naples for this suggestion.

[00:01:13] It's an awesome idea, and I hope you enjoy it.

[00:01:17] So, let's not waste a minute, and get stuck in right away.

[00:01:21] As a quick administrative note, before we start, a **trolley**[7] is another word for a **tram**[8], a one carriage train.

[00:01:31] Whether it's a **trolley**, a **tram** or a train doesn't really matter for the purposes of the problem - the point is that they are all big, heavy objects that will probably kill you if they hit you.

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[4] based on ideas and thoughts and not the practical use of the subject

[5] having the power to be driven without human presence

[6] that drives itself, without human presence

[7] an electric vehicle that transports people

[8] an electric vehicle that transports people

[00:01:43] There are several **variants**[9] of the **trolley** problem, but they all go something like this.

[00:01:50] There is an out of control **trolley** going down the **tracks**[10].

[00:01:54] Ahead, on the **tracks**, there are five people tied up and unable to move.

[00:02:00] The **trolley** is headed straight for them.

[00:02:03] You are standing some distance off in the **operating room**[11], next to a **lever**[12].

[00:02:10] If you pull the **lever**, the **trolley** will switch to a different set of **tracks**.

[00:02:16] However, you notice that there is one person on this set of **tracks**. If you pull the **lever**, the **trolley** will move to the other set of **tracks** and kill the one person.

[00:02:29] So, you have two options.

[00:02:31] Do you do nothing and allow the **trolley** to kill the five people on the main **track**[13].

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[9] slightly different forms or versions of the same thing

[10] a pair of long metal bars fixed on the ground, on which trains, trolleys etc. travel

[11] a special room in which people control the trolley operations

[12] a bar or handle that controls the direction a trolley is taking

[13] a pair of long metal bars fixed on the ground, on which trains, trolleys etc. travel

[00:02:37] Or do you pull the **lever**, **diverting**[14] the **trolley** onto the other track where it will kill one person?

[00:02:44] What is the **ethically**[15] correct option?

[00:02:47] Or, to put it simply, what is the right thing to do?

[00:02:52] Although there have been similar questions proposed for centuries, this question was really popularised by two women - an English woman called Philippa Foot, and an American called Judith Jarvis Thomson.

[00:03:07] Foot's original version first involved a **judge**[16], before introducing the idea of the **trolley**, or **tram**.

[00:03:15] Her version proposed this **hypothetical**[17] situation.

[00:03:20] Imagine that there is a **trial**[18] for a particular crime, and a **judge** cannot decide who is **guilty**[19].

[00:03:28] They cannot find the person who committed the crime.

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[14] changing direction of something

[15] in a way that relates to a set of moral values or standards

[16] a person in charge of a trial who decides if a person is guilty or not

[17] imagined or suggested, not necessarily true

[18] the examination of a legal case in the court of law

[19] responsible for a crime

[00:03:31] Outside, some **rioters**[20] are demanding that the **judge** finds someone guilty of the crime, and that person is put to death.

[00:03:41] If the **judge** doesn't find someone **guilty**, these **rioters**, these protestors will take **revenge**[21] on a particular section of the community, killing five people.

[00:03:53] Given that the **judge** can't find the real **guilty** person, he decides that the only way he can avoid these five people being killed is by finding an innocent person and **sentencing**[22] him to death for the crime.

[00:04:09] In this case, the **judge** decided to kill one innocent person to save a group of five innocent people.

[00:04:16] Now, Foot expanded on this and asked us to imagine a pilot in charge of a plane that is about to crash.

[00:04:25] The pilot can choose to crash into a less **inhabited**[23] area, into an area with fewer houses, to kill fewer people.

[00:04:34] Should the pilot do it?

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[20] people who meet in public and protest usually in a violent way

[21] the action of harming someone in a return for harm they have done to someone else

[22] deciding the punishment for someone who has been found guilty by a court

[23] occupied, lived in by people

[00:04:36] Or, Foot proposed, what if instead of a plane it was a **tram**, a **trolley**, and the driver could **flip** a **switch** and kill only one person instead of five.

[00:04:47] What is the right thing to do?

[00:04:49] Now, in both cases, Foot showed, the result is the same.

[00:04:53] There is the exchange of one person's life for five lives.

[00:04:59] But why is it that for most people they would say that they would **flip**[24] the **switch**[25] and allow the train to kill one person in order to save the five, when they wouldn't agree that the judge did the **ethically** correct thing by finding an innocent person and **sentencing** them to death, to save the five other people?

[00:05:20] Since the original publication of this article, in 1967, there have been multiple developments and **variants** on this problem, which ask us to consider how our views change depending on the **circumstances**[26].

[00:05:35] For example, in 1976 Judith Jarvis Thomson proposed an alternative with a **surgeon**[27], with a doctor.

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[24] turn

[25] a small handle that turns on or off a device or a electric circuit

[26] facts or conditions relevant to an action or event

[27] a doctor who performs medical operations

[00:05:44] Imagine that there is a brilliant **surgeon** with five **patients**[28], each in need of a different **organ**[29].

[00:05:52] One needs a heart, another needs a new lung, another, a new **liver**[30], another, new **kidneys**[31], and the final one needs a new stomach.

[00:06:03] Each of whom will die without that **organ**.

[00:06:07] Unfortunately, no **suitable**[32] organs are available to perform any of these five **transplant**[33] operations.

[00:06:15] A healthy young traveller, just passing through the city in which the doctor works, comes in for a **routine**[34] **checkup**[35], there's nothing wrong with him.

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[28] the people who receive medical care

[29] a part of the human body

[30] a large organ in the body that cleans the blood

[31] small organs in the body that clean the body by producing urine

[32] right for the occasion, proper

[33] an organ which is taken from one body to be put into another

[34] a usual, regular way to do things

[35] a medical examination to test your general health

[00:06:30] In the course of doing the **checkup**, the doctor discovers that this young

traveller's **organs**[36] are **compatible**[37] with all five of his dying **patients**.

[00:06:35] **Suppose**[38] further that if the young man were to disappear, no one would

suspect[39] the doctor, he wouldn't be caught.

[00:06:43] Do you support the **morality**[40] of the doctor to kill that tourist and provide

his healthy **organs** to those five dying people and save their lives?

[00:06:54] Again, the answer might be "probably not", even though the result is the

same, five people live and one person dies.

[00:07:02] There's a similar version of this that is more similar to the original train

problem and involves a fat man.

[00:07:11] Imagine that you are walking along a bridge and you can see a train running

down the **tracks**.

[00:07:17] Ahead of it are five men.

[00:07:19] They can't escape, and the train will hit and kill all of them, if you do nothing.

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[36] parts of the human body

[37] able to exist successfully with something

[38] imagine

[39] think that he is responsible for the action

[40] the values related to deciding what is right or wrong

[00:07:25] Ahead of you, on the bridge is a very fat man.

[00:07:30] You know that you can push him over the bridge onto the train **tracks**, and he will stop the train.

[00:07:37] The fat man will die, but the five men will be saved.

[00:07:42] What should you do?

[00:07:44] Is it different because you are actively killing a person to save five, instead of saving five to allow one to die?

[00:07:54] Other **variants** of this problem complicate it further by including **emotion**[41].

[00:07:59] Let's say that instead of that one person on the railway **tracks** being a random person you don't know, what if they were your son, daughter, husband, wife, brother, sister, mother or father?

[00:08:12] Or what if they were someone that you knew was evil, that was the complete opposite to someone close to you?

[00:08:19] How would your decision-making process change, given these differences?

[00:08:25] Obviously, there are no right or wrong answers here, only **moral**[42] judgments of what we believe to be right and wrong.

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[41] strong feelings

[42] relating to the standards of good or bad behaviour and general values

[00:08:33] Is there a difference between actively killing someone and allowing someone to die, if that was what was going to happen anyway?

[00:08:41] A utilitarian view, which you can learn more about in episode 116 on Jeremy Bentham, tells us that we should **flip** the **switch** and allow the one person to die in order to save the five, because this is what causes the greatest happiness **overall**[43].

[00:08:59] Five lives are worth more than one.

[00:09:02] Not only would that decision be allowed by a utilitarian, but it would also be a **morally**[44] better choice.

[00:09:11] There is, of course, an alternative view that **merely**[45] participating in something that will result in the death of one person is **morally** wrong.

[00:09:21] The view goes that it isn't your fault that the train is running down the **tracks**, you aren't responsible for the death of those five people, and if you **flipped**[46] the **switch** to allow the train to kill the one person instead, well you would take some responsibility for that person's death.

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[43] in general

[44] referring to the standards of right or wrong behaviour

[45] just, simply

[46] turned over with a sudden quick movement

[00:09:40] If this is how you would think about the situation, let me put **a spanner in the works**[47], let me complicate it further by proposing to you an alternative.

[00:09:51] Imagine that there was a train running down the **tracks**.

[00:09:54] You could see that it was on course to hit five people, killing them all.

[00:09:59] You could press a button and move the train to another track, where there was only one person. Instead of killing five people, only one person would be killed.

[00:10:12] But there was also another button where you could **switch** the train to another **track** altogether.

[00:10:18] This **track** was empty, and nobody would be killed.

[00:10:22] I imagine you would say that the correct **course of action**[48] would be to move the train to the empty **track** and save everyone's lives.

[00:10:30] Of course it is.

[00:10:32] But the point is that in this case, you have involved yourself with the situation, you have changed the natural **course**[49] of what was going to happen, so if you would do it to save five lives, why wouldn't you do it to save four lives, why wouldn't you save the five people and only allow one to die?

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[47] a person who causes something not to go as planned

[48] next thing to do

[49] the direction something is following

[00:10:52] Now, the **trolley** problem, or the train problem, has come under a lot of **scrutiny**[50], and there are plenty of criticisms of it.

[00:11:01] Of course, it's **unrealistic**[51].

[00:11:03] It's **theoretical**.

[00:11:04] There are no situations in which we know exactly, in which we know with certainty, what will happen.

[00:11:11] So asking us to make these **moral** and **ethical** choices in completely certain situations is **unrealistic**, and not even useful.

[00:11:21] There's also the point that most **moral** judgments do not involve life and death, thankfully.

[00:11:28] The **trolley** problem is too extreme, too unrealistic, and therefore it's not actually helpful when thinking about **moral** or **ethical** decisions, so the criticism goes.

[00:11:40] In real life, there are very few times where anyone needs to make these kinds of decisions, and focusing on this kind of question **deflects**[52] attention away from, it moves the focus away from more important, more realistic **ethical** and **moral** questions that we should spend more time thinking about.

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[50] careful and detailed examination

[51] Something that cannot be true

[52] turns something away from where it should be

[00:12:01] Finally, and perhaps most importantly, it reduces human life to a number.

[00:12:08] Of course, 5 is greater than 1, but that's not how life works.

[00:12:13] Real-life has real people, they are different, humans make decisions in different ways, and to reduce the entire problem to **arithmetic**[53], to an **algorithmic**[54] calculation, isn't how life works.

[00:12:28] It makes you think of the famous quote that was reportedly said by Josef Stalin: "One death is a tragedy, a million deaths a **statistic**[55]".

[00:12:36] And Josef Stalin, of course, isn't one of history's great **moral** philosophers.

[00:12:43] Yet the **trolley** problem is again becoming increasingly **relevant**[56].

[00:12:47] But this time, we aren't asking humans to make **moral** judgments, we are asking machines, we are asking **algorithms**[57].

[00:12:56] Of course, these **algorithms** need to be told what to do, they need to be given instructions by humans.

[00:13:03] I'm talking here about **autonomous** vehicles, about **self-driving** cars.

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[53] the method where you find the answer of a problem using numbers

[54] solving a problem using a set of mathematical rules

[55] an information that we know by studying how many times something happened to a group of people

[56] connected with what is being discussed

[57] a set of mathematical rules to be followed in calculations, especially by a computer

[00:13:08] With a human driver, we rely on humans to make decisions about what to do.

[00:13:13] If a **pedestrian**[58] steps out into the road unexpectedly, the driver would

swerve[59], they would move quickly to try to avoid them.

[00:13:23] If there were a situation in which your car was out of control, and you had to

choose between hitting a group of people and **swerving**[60] hard to the right and you

would only hit one person, at the moment you have to make that choice.

[00:13:39] Thankfully, it isn't a choice that most of us will ever have to make, but still, it

is a possibility.

[00:13:45] With **self-driving** cars, they drive themselves.

[00:13:49] **Complex**[61] **algorithms**, **complex** computer code tells them what to do in

certain situations.

[00:13:55] For the vast majority of the time, these are engineering decisions, not **moral**

decisions.

[00:14:02] For example, if a **self-driving** car sees a stopped car ahead of it, it should

slow down or move to the right or left.

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[58] someone that walks on foot

[59] suddenly change direction

[60] suddenly changing direction

[61] complicated, not simple

[00:14:11] If there is a ball that bounces into the street, it should stop.

[00:14:15] From a technological point of view, of course, this is amazing, but from a **moral** point of view, there isn't a huge amount going on.

[00:14:24] You don't need to make **moral** decisions about turning left or right or slowing down in certain areas.

[00:14:31] But, what happens in a situation where a car does have to make a choice about where to cause the least amount of harm?

[00:14:39] Let's return to our situation of either going straight into a crowd of people or **swerving** to only hit one person.

[00:14:48] What should the car do?

[00:14:50] Obviously, the software cannot **foresee**[62] every potential situation and tell the car what to do every time, but it does need to provide a **framework**[63] for the car to make decisions on its own.

[00:15:05] The **Trolley** Problem is therefore a useful way of thinking about this, but it's, of course, imperfect.

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[62] know about something before it happens

[63] a structure acting a basis for a system

[00:15:12] It gets even more complicated as we think about the **implications**[64] of software making **moral** or **ethical** decisions.

[00:15:20] Let's say that a **self-driving** car saw a motorbike ahead that was out of control and about to crash into a group of **pedestrians**[65].

[00:15:29] The **self-driving** car could **brake**[66] and stop, **thereby**[67] avoiding a crash with the motorbike, but the motorbike would crash into the **pedestrians**, seriously injuring or killing them.

[00:15:39] Or, the **self-driving** car could speed up, hitting the motorbike and probably killing its driver, but saving the group of **pedestrians**?

[00:15:49] What should it do?

[00:15:51] You might say, well, it should just **brake** because the actions of the motorbike aren't its responsibility, or you could argue that it has a **moral** responsibility to save the **pedestrians** if it can.

[00:16:04] How about a different situation?

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[64] likely consequences

[65] people that walk on foot

[66] slow down

[67] as a result of that

[00:16:06] Let's say that a **self-driving** car with you inside was driving over a **single-lane**[68] bridge and there was a group of 10 schoolchildren that had stepped into the road ahead.

[00:16:18] The car hadn't seen them, they had stepped out quickly, and after doing all of the necessary calculations in a millisecond, the car knew that there wasn't enough time for the children to move, and there wasn't enough time for the car to slow down.

[00:16:34] But, it could **swerve** to the right and throw itself off the bridge, **thereby** killing you, the passenger, but saving the group of schoolchildren.

[00:16:44] What is the right thing for the car to do?

[00:16:47] Understandably, most people wouldn't like the idea that their car could kill them in order to save complete strangers, and it is probably a strange idea for you to think that your car should be making **moral** judgments on your behalf, and **sacrificing**[69] your life in the process.

[00:17:04] Should you, as a car owner, or as a passenger in a self-driving car, be able to select the **ethics** and **morals**[70] of your car?

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[68] having a single lane for traffic, a narrow road

[69] giving up something in order to gain something else

[70] the standards of good or bad behaviour and general values

[00:17:14] Could you choose to have a **selfless**[71] car that would **sacrifice** itself, and the people inside, in an instant?

[00:17:21] Or would you prefer to have a **selfish**[72] car, which put much more value on the life of its passengers than any humans nearby?

[00:17:30] Going one step further, could you say that you absolutely loved kids, and you'd do anything to save anyone under the age of 12?

[00:17:39] But you hated animals and people over the age of 70 and were very happy to hit as many rabbits and old-age **pensioners**[73] as possible.

[00:17:49] Obviously, the last point is an **exaggeration**[74], but the point is that the software in **self-driving** cars needs to be provided guidance on what to do by humans, we need to give them instructions for what to do in these situations.

[00:18:03] This software has complex **machine-learning**[75] **algorithms**, so it does get **smarter**[76] over time, but we can't rely on the **algorithms** to make **moral** or **ethical** judgements on their own.

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[71] caring more about other people than yourself

[72] caring only about your own interest

[73] people who receive money from the state after they retire from working

[74] making a situation seem more obvious or more important than it really is

[75] something that makes machines "learn" new things and improve

[76] programmed to be more capable of independent action

[00:18:17] Going back to our earlier criticism of the **trolley** problem, that it was too black and white, that it was either life or death, and it didn't consider the fact that nothing was certain, computers are generally much better than humans at processing large amounts of information quickly.

[00:18:35] If you need to calculate the **probability**[77] of certain things happening, the **probability** of being able to stop in time, the **probability** of death or serious injury in a certain type of **collision**[78], or similar complicated calculations, a computer is **infinitely**[79] better and quicker at doing this than a human is.

[00:18:56] But, of course, it's very complicated.

[00:18:58] And who decides?

[00:19:00] Is it left to the technology companies building the software, writing the **algorithms** to decide what is right or wrong?

[00:19:08] Or should it be a legal matter?

[00:19:11] Should the law of each country specify how **autonomous** cars should behave?

[00:19:16] And if so, how would this be different from country to country?

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[77] the extent to which an event is likely to happen

[78] an accident that happens when two vehicles hit each other

[79] very much

[00:19:20] Would the software have to be **adjusted**[80] based on the country the car was registered in?

[00:19:25] Or would it be **adjusted** based on where the car was?

[00:19:29] Would you have a situation where you were in a **self-driving** car, and when it crossed national borders its software would automatically update to the **moral** code of the country?

[00:19:40] It does seem that, although the technology behind **self-driving** cars isn't so far away, there still isn't complete agreement on how they should behave from a **moral** point of view.

[00:19:52] And this is quite **telling**[81].

[00:19:54] These **moral** questions are ones that humans have been **battling with**[82] for millennia, for thousands of years.

[00:20:02] The technology behind **self-driving** cars, although it is brilliant, is relatively new, and hasn't taken that long to develop.

[00:20:11] Yet it looks like the software will arrive before agreement on the **ethics**.

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[80] changed slightly in order to make it better

[81] having a great effect, important

[82] trying hard to find answers

[00:20:16] And that, for me, is a good **indication**[83] of what the harder problem to solve might be.

[00:20:23] OK then, that is it for this exploration of the **Trolley** Problem, what it is, how it makes us think about our relationship with each other, and its **relevance**[84] for us today.

[00:20:35] I hope it's been an interesting one, and that you've learnt something new.

[00:20:39] You will note that I have not, or I have at least tried not to give any kind of **moral** judgments here. That is for you to decide, and there is clearly no right answer.

[00:20:50] I know we have lots of software developers who are members of Leonardo English, so what do you think of this moral problem?

[00:20:57] Where does the role of the programmer end, and where does the role of the lawmaker, or **moralist**[85], start?

[00:21:04] I would love to know what you think.

[00:21:06] You can head right into our community forum, which is at community.leonardoenglish.com and get chatting away to other curious minds.

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[83] sign, something that points to a fact

[84] relation to the matter discussed

[85] a person who teaches the standards of good or bad behaviour and general values

[00:21:15] You've been listening to English Learning for Curious Minds, by Leonardo

English.

[00:21:20] I'm Alastair Budge, you stay safe, and I'll catch you in the next episode.

[END OF EPISODE]

<u>Key vocabulary</u>

Word	Definition
Ethical	relating to beliefs about what is right or wrong
Sacrifice	give up something in order to gain something else
Ethics	a set of beliefs about what is right or wrong
Theoretical	based on ideas and thoughts and not the practical use of the subject
Autonomous	having the power to be driven without human presence
Self-driving	that drives itself, without human presence
Trolley	an electric vehicle that transports people
Tram	an electric vehicle that transports people
Variants	slightly different forms or versions of the same thing
Tracks	a pair of long metal bars fixed on the ground, on which trains, trolleys etc. travel
Operating room	a special room in which people control the trolley operations

Lever	a bar or handle that controls the direction a trolley is taking
Track	a pair of long metal bars fixed on the ground, on which trains, trolleys etc. travel
Diverting	changing direction of something
Ethically	in a way that relates to a set of moral values or standards
Judge	a person in charge of a trial who decides if a person is guilty or not
Hypothetical	imagined or suggested, not necessarily true
Trial	the examination of a legal case in the court of law
Guilty	responsible for a crime
Rioters	people who meet in public and protest usually in a violent way
Revenge	the action of harming someone in a return for harm they have done to someone else
Sentencing	deciding the punishment for someone who has been found guilty by a court
Inhabited	occupied, lived in by people
Flip	turn

Switch	a small handle that turns on or off a device or a electric circuit
Circumstances	facts or conditions relevant to an action or event
Surgeon	a doctor who performs medical operations
Patients	the people who receive medical care
Organ	a part of the body
Liver	a large organ in the body that cleans the blood
Kidneys	small organs in the body that clean the body by producing urine
Suitable	right for the occasion, proper
Transplant	an organ which is taken from one body to be put into another
Routine	a usual, regular way to do things
Checkup	a medical examination to test your general health
Organs	parts of the human body
Compatible	able to exist successfully with something
Suppose	imagine
Suspect	think that he is responsible for the action

Morality	the values related to deciding what is right or wrong
Emotion	strong feelings
Moral	relating to the standards of good or bad behaviour and general values
Overall	in general
Morally	referring to the standards of right or wrong behaviour
Merely	just, simply
Flipped	turned over with a sudden quick movement
A spanner in the works	a person who causes something not to go as planned
Course of action	next thing to do
Course	the direction something is following
Scrutiny	careful and detailed examination
Unrealistic	Something that cannot be true
Deflects	turns something away from where it should be
Arithmetic	the method where you find the answer of a problem using numbers

Algorithmic	solving a problem using a set of mathematical rules
Statistic	an information that we know by studying how many times something happened to a group of people
Relevant	connected with what is being discussed
Algorithms	a set of mathematical rules to be followed in calculations, especially by a computer
Pedestrian	someone that walks on foot
Swerve	suddenly change direction
Swerving	suddenly changing direction
Complex	complicated, not simple
Foresee	know about something before it happens
Framework	a structure acting a basis for a system
Implications	likely consequences
Pedestrians	people that walk on foot
Brake	slow down
Thereby	as a result of that

Single-lane	having a single lane for traffic, a narrow road
Sacrificing	giving up something in order to gain something else
Morals	the standards of good or bad behaviour and general values
Selfless	caring more about other people than yourself
Selfish	caring only about yourself
Pensioners	people who receive money from the state after they retire from working
Exaggeration	making a situation seem more obvious or more important than it really is
Machine-learning	something that makes machines "learn" new things and improve
Smarter	programmed to be more capable of independent action
Probability	the extent to which an event is likely to happen
Collision	an accident that happens when two vehicles hit each other
Infinitely	very much
Adjusted	changed slightly in order to make it better
Telling	having a great effect, important

Battling with   trying hard to find answers

Indication   sign, something that points to a fact

Relevance   relation to the matter discussed

Moralist   a person who teaches the standards of good or bad behaviour

and general values

We'd love to get your feedback on this podcast.

What did you like? What could we do better?

What did you struggle to understand?

Let us know in the forum community.leonardoenglish.com