MOTION:

“AUTONOMOUS VEHICLES WILL MAKE DRIVING SAFER”
ABOUT

DEBATING MATTERS

Debating Matters because ideas matter. This is the premise of the Institute of Ideas Debating Matters Competition for sixth form students which emphasises substance, not just style, and the importance of taking ideas seriously. Debating Matters presents schools with an innovative and engaging approach to debating, where the real-world debates and a challenging format, including panel judges who engage with the students, appeal to students from a wide range of backgrounds, including schools with a long tradition of debating and those with none.

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INTRODUCTION

In 2015 the UK’s first self-driving pod - the LUTZ Pathfinder – was made public by the government-funded Transport Systems Catapult [Ref: Transport Systems Catapult]. This follows in the wake of the launch in 2010 of technology giant Google’s Self-Driving Car project to “make driving safer, more enjoyable and more efficient.” [Ref: Google] Google asked us to imagine a point where: “Deaths from traffic accidents—over 1.2 million worldwide every year—could be reduced dramatically, especially since 94% of accidents in the U.S. involve human error” [Ref: Google], and Transport Systems Catapult additionally suggest that we could see, “a marked reduction in congestion as well as... benefits to the environment” from autonomous vehicles [Ref: Transport Systems Catapult]. The idea of ‘autonomous vehicles’ isn’t a new one [Ref: Computer History Museum], but the advent of these projects has caused both excitement and concern. Supporters of the new technology argue that: “The strongest case for self-driving cars is safety” [Ref: Guardian], whilst others are concerned that self-driving cars, “introduce a whole new category of road user...that entirely lacks an understanding that all those road users share” [Ref: Slate], and question how this new automated technology will integrate into a human-controlled and human-centred environment. The recent fatal crash of a Tesla car [Ref: Wired] in the USA [Ref: ABC News] has brought into focus the possible limitations of the technology, with some arguing that talk of automation and ‘autopilots’ “encourage people to think that the systems are more capable than they really are, and that is a serious problem.” [Ref: Scientific American] So is the future of driving a safer, autonomous one, or is that still a futuristic dream? What are the pros and cons of this new technology?
### Safety first

One of the key motivations given for a move to autonomous cars is improving road safety. Cars that are able to anticipate risky situations and avoid them will, it is argued, reduce road-traffic accidents, "helping to make the roads safer for everyone." [Ref: Telegraph] The small fleet of Google automated cars (both commercial makes and Google’s own prototype) have driven over a million miles within California since 2009 [Ref: Telegraph], but in February this year one of their vehicles had an accident and collided with a public transport bus [Ref: Financial Times], with Google admitting the computer made an "incorrect assumption about where [the bus] would go", and that the crash would not be the last [Ref: Daily Mail]. That incident is considered an important moment, not only because it’s the first one where the technology has been deemed to bear ‘some responsibility’ for the incident [Ref: Daily Mail], but because it highlights the concerns of some about the safety of driverless cars more broadly. Whilst future autonomous vehicles might be able to safely “navigate roads, they don’t think like humans”, and some question whether autonomous cars can really be safe in an environment where they need to interact with humans, and as such, it will be difficult for them to “cope with the uncertainty and complexity of human behaviour.” [Ref: Popular Mechanics] But others call for perspective on the Google car crash, and ask us to consider “the number of crashes that occurred on the same day that were the result of human behaviour.” [Ref: BBC News]

### Man vs Machine

For writer Carl Franzen, “the biggest issue with self-driving cars lies in their inability to make moral and ethical decisions for which human drivers have so far been almost entirely responsible. Would-be autonomous carmakers might be uncomfortable programming such choices into their systems, but human drivers make such momentous split-second decisions with regularity.” [Ref: Popular Mechanics] The development of artificial intelligence (AI), including in transport, has led some to consider ethical and moral questions about introducing this new technology into our lives. Human drivers make constant judgements – practical and moral – especially about the safety of ourselves and those around us, but will computers be programmed to do the same, and if so what decisions will their algorithms make? “Here is the nature of the dilemma. Imagine that in the not-too-distant future, you own a self-driving car. One day, while you are driving along, an unfortunate set of events causes the car to head toward a crowd of 10 people crossing the road. It cannot stop in time but it can avoid killing 10 people by steering into a wall. However, this collision would kill you, the owner and occupant. What should it do?” [Ref: MIT Technology Review] Others contest that: “When machines take over, the work required of the human is typically not removed”, but rather our interaction with cars changes, and instead we will be a “monitor—one who constantly watches to detect and correct technology failures” and that we should welcome “a cooperative effort between humans and technology—one where the human plays a vital, active role in systems that optimize the interaction between the driver and the technology” [Ref: Newsweek].
Who takes responsibility?

One of the key questions in the debate about autonomous vehicles is who will be responsible in the event of an accident, and if we can hold a machine to account as we do people. The UK government has already begun to put in place legislation to allow automated vehicles onto UK roads and to be insured under existing policies by 2020 [Ref: Auto Express]. But some argue that even if the law and ethics of autonomous vehicles are resolved: “Insurers still need to make confident judgments about risk, and this will be very difficult.” [Ref: Atlantic] To be able to make such judgements about risks, and responsibilities, the law currently requires someone, or something, to be ultimately accountable for decisions made. That raises the interesting idea of extending to robots “legal personhood” which, argues one commentator, is “less about what is or is not a flesh-and-blood person and who/what is or is not able to be hauled into court.” [Ref: Atlantic] But British transport writer Christian Wolmar argues that our current focus on automation is misplaced and that even if the “legal, social, economic, political and practical” issues are resolved, an automated “takeover of the mainstream transport system is about as likely as the long-awaited arrival of the futuristic jet packs of 1960s comic books.” [Ref: New Statesman] Yet Google and other developers point to the prospect of the new technology opening up driving and mobility to many more of us, meaning, “everyone could get around easily and safely, regardless of their ability to drive. Ageing or visually impaired loved ones wouldn’t have to give up their independence. Time spent commuting could be time spent doing what you want to do.” [Ref: Google] So is a move to automation an unquestionable good for society, a threat to life, or a pipe dream?
FOR

Safety first: the future of driving
Tim Gibson Telegraph 15 January 2016
Self-driving cars: safe, reliable – but a challenging sell for Google
Jemima Kiss Guardian 6 October 2015
Driving should be illegal
Kevon Roose Fusion 5 October 2015
Google’s self-driving cars are ridiculously safe
Robert Montenegro Big Think June 2015

AGAINST

Transport’s favourite myth: why we will never own driverless cars
Christian Wolmar New Statesman 10 April 2016
The big question about driverless cars no one seems able to answer
Brian Fung Washington Post 17 February 2016
Sorry to disappoint, but driverless cars will still need drivers
Michael Nees Newsweek 10 May 2015
Why self-driving cars aren’t ready to share the road with humans
Carl Franzen Popular Mechanics 5 February 2015

IN DEPTH

Why self-driving cars must be programmed to kill
MIT Technology Review 22 October 2015
The driverless car debate: how safe are autonomous vehicles?
Lauren Keating Tech Times 28 July 2015
The moral challenges of driverless cars
Keith Kirkpatrick Communications 2015

ORGANISATIONS

Google
Transport Systems Catapult
Autonomous Vehicles: “Autonomous vehicles will make driving safer”

Deadly Tesla crash exposes confusion over automated driving
Larry Greenemeier Scientific American 8 July 2016

Tesla ‘Autopilot’ crash raises concerns about self-driving cars
NPR 1 July 2016

Can self-driving cars cope with illogical humans?
Mark Prig Daily Mail 14 March 2016

Driverless cars pose worrying questions of life and death
Andy Sharman Financial Times 20 January 2016

Google’s self-driving cars aren’t as good as humans—yet
Alex Davies Wired 12 January 2016

How can we make sure that driverless cars are safe?
Matt McFarland Los Angeles Times 22 December 2015

Humans are slamming into driverless cars and exposing a key flaw
Keith Naughton Bloomberg 8 December 2015

Uber and out: is there a future for driving?
Battle of Ideas 17 October 2015

Tesla’s cars now drive themselves, kinda
Molly McHugh Wired 14 October 2015

When humans and robots share the roads
Adrienne Lafrance Atlantic 9 October 2015

Future proofing: Mobility
BBC Radio 4 26 September 2015

If a self-driving car gets in an accident, who—or what—is liable?
Alexis C. Madrigal Atlantic 13 August 2014

Driverless cars: increased road safety and efficiency or ‘lethal weapons’?
Oliver Balch Guardian 1 August 2014

The cars we’ll be driving in the world of 2050
BBC 8 November 2013

No one understands the scariest, most dangerous part of a self-driving car: Us
Bianca Bosca Huffington Post 25 October 2013

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Patrick Lin Atlantic 8 October 2013

The trollable self-driving car
Samuel English Anthony Slate 2012

Self-driving car project
Google

Self-driving pods
Transport Systems Catapult
IN THE NEWS

Tesla's autopilot under investigation after fatal crash
ABC News 1 July 2016

Queen's Speech sets out new driverless car legislation
Auto Express 18 May 2016

'Someone is going to die': experts warn lawmakers over self-driving cars
Guardian 15 March 2016

Google car crash ‘not a surprise’ - US transport secretary
BBC News 14 March 2016

Google self-driving car caught on video colliding with bus
Guardian 9 March 2016

BMW sees its future shift to ultimate self-driving machine
Bloomberg 7 March 2016

Ford boss claims the technology will become standard in just four years
Daily Mail 23 February 2016

Driverless cars: London wants Google vehicle trials
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Autonomous vehicles will be safer, not perfect
Automotive News 10 January 2016

Self-driving vehicles expected on roads in next few years
China.org 13 April 2015

Driverless cars set to roll out for trials on UK roads
Guardian 11 February 2015

FBI warns driverless cars could be used as ‘lethal weapons’
Guardian 16 July 2014

Google’s driverless cars are ‘safer’ than human drivers
Telegraph 29 October 2013

AUDIO/VISUAL

Tesla ‘Autopilot’ crash raises concerns about self-driving cars
NPR 1 July 2016

Uber and out: is there a future for driving?
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FOR STUDENTS

READ EVERYTHING ..... In the Topic Guide and in the news - not just your side of the argument either.

STATISTICS ARE GOOD BUT..... Your opponents will have their own too. They’ll support your points but they aren’t a substitute for them.

BE BOLD Get straight to the point but don’t rush into things: make sure you aren’t falling back on earlier assertions because interpreting a debate too narrowly might show a lack of understanding or confidence.

DON’T BACK DOWN Try to take your case to its logical conclusion before trying to seem ‘balanced’ - your ability to challenge fundamental principles will be rewarded - even if you personally disagree with your arguments.

DON’T PANIC Never assume you’ve lost because every question is an opportunity to explain what you know. Don’t try to answer every question but don’t avoid the tough ones either.

FOR JUDGES

Judges are asked to consider whether students have been brave enough to address the difficult questions asked of them. Clever semantics might demonstrate an acrobatic mind but are also likely to hinder a serious discussion by changing the terms and parameters of the debate itself.

Whilst a team might demonstrate considerable knowledge and familiarity with the topic, evading difficult issues and failing to address the main substance of the debate misses the point of the competition. Judges are therefore encouraged to consider how far students have gone in defending their side of the motion, to what extent students have taken up the more challenging parts of the debate and how far the teams were able to respond to and challenge their opponents.

As one judge remarked ‘These are not debates won simply by the rather technical rules of schools competitive debating. The challenge is to dig in to the real issues.’ This assessment seems to grasp the point and is worth bearing in mind when sitting on a judging panel.

FOR TEACHERS

Hoping to start a debating club? Looking for ways to give your debaters more experience? Debating Matters have a wide range of resources to help develop a culture of debate in your school and many more Topic Guides like this one to bring out the best in your students. For these and details of how to enter a team for the Debating Matters Competition visit our website, www.debatingmatters.com
“A COMPLEX WORLD REQUIRES THE CAPACITY TO MARSHALL CHALLENGING IDEAS AND ARGUMENTS”

LORD BOATENG, FORMER BRITISH HIGH COMMISSIONER TO SOUTH AFRICA