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Telematics Industry
Insights by
Michael L. Sena

THE DISPATCHER

IN THIS ISSUE

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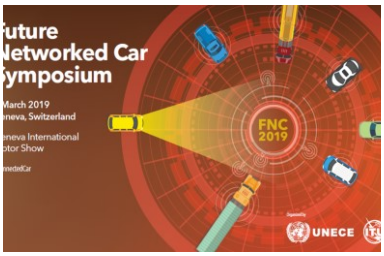
THE DISPATCHER

Telematics Industry Insights by Michael L. Sena
April 2019 – Volume 6, Issue 6

The Symposium on the Future Networked Car 2019



https://www.itu.int/en/fnc/2019/Pages/programme.aspx

1. The **International Telecommunication Union (ITU)** is the United Nations specialized agency for information and communication technologies (ICTs).

Founded in 1865 to facilitate international connectivity in communications networks, ITU allocates global radio spectrum and satellite orbits, develops the technical standards that ensure networks and technologies seamlessly interconnect, and strives to improve access to ICTs to underserved communities worldwide. Every time you make a phonecall via the mobile, access the Internet or send an email, you are benefitting from the work of ITU.

The **United Nations Economic Commission for Europe (UNECE)** was set up in 1947 by ECOSOC. It is one of five regional commissions of the United Nations.

UNECE's major aim is to promote pan-European economic integration. UNECE includes 56 member States in Europe, North America and Asia. However, all interested United Nations member States may participate in the work of UNECE. Over 70 international professional organizations and other non-governmental organizations take part in UNECE activities.

On 7 March 2019, ITU and UNECE[1] convened the **Symposium on the Future Networked Car (FNC-2019)** *within the 89th Geneva International Motor Show.* **FNC-2019** *brought together representatives of the automotive, information and communication technology (ICT) industries, along with government and NGO leaders to discuss the status and future of vehicle communications and automated driving. The* **Symposium** *panelists examined advances in the areas of cybersecurity, artificial intelligence, and the deployment of automated mobility services, exploring the relationships between vehicle communications and automated driving by analyzing the crucial role of connectivity, including 5G, in delivering safer and more effective transport for all members of society. In addition, the* **Symposium** *discussed how standards bodies can best collaborate to meet industry needs and to achieve interoperability*.

The **FNC Symposiums** are not intended as a place for making sales pitches, promoting the particular solutions developed by the speaker's company. The **Symposiums** have served as a forum where hard questions are asked and concrete answers are given. **FNC-2019** was no exception. This is reflected in the panel discussion format of the **Symposium** with each panelist addressing a specific issue on the topic and any presentation material limited to a few slides that illustrate the issue. There are no 'break-out' sessions where groups move to different rooms to address multiple topics. Everyone who attends the Symposiums hears everything. The delegates in attendance are actively encouraged by the session moderators to participate in the discussion and address questions to the panelists. The result is that a great deal of knowledge sharing takes place. Let's have a look at what was discussed this year.

Session One: Connected and automated vehicles at the cross-roads to success

Today, all vehicle manufacturers offer cellular connectivity in their vehicles, either as standard equipment or as an option. Safety applications for vehicles, such as emergency call, are appearing—and are obligatory in the EU and Russia—as is the ability to connect to Internet information and entertainment. Communication between vehicles, to and from roadside infrastructure and with vulnerable road users, has been tested and debated for twenty years. With the introduction of 5G, the time has come to decide whether to use a tried and true solution, IEEE 802.11p, that has been standardized for more than a decade, or whether to move on to cellular V2X and its future evolution into 5G.

Each of the panelists in the session gave a brief statement of their organization's position on the topic of V2X connectivity. It was clear after the statements that everyone on the panel favors Cellular-V2X except Teodor Buburuzan of **VW** and Eddy Hartog, the representative from the European Commission. The lines for the ensuing discussion were therefore drawn. Teodor said that VW will bring the ITS-G5/IEEE 802.11p solution using DSRC to market this year. VW has decided that it will do this for the following reasons:

- The technology has been tested and standardized;
- It is simple to deploy and no additional spectrum is needed;
- There are no contracts or special agreements necessary;
- It involves low risk management; and,
- Wi-Fi technology in general is widely used and therefore both widely available and low cost.

"The technology does what it was designed to do, and it does it well," declared Teodor. He reminded the Symposium's participants, he is the only vehicle OEM on any of the panels (something to keep in mind for next year's event) so he was going to have to carry the flag for the other car makers who have decided to move forward with the DSRC-based solution.[2]

Marjorie Dickman of **INTEL** stated that "ITS-G5 may have been right in 2010, but it is not now." C-V2X has superior performance and a clear path to 5G, she said. "The EU's vision for safety needs to be supported, and **INTEL** stands with the European Commission, but we differ on policies. 5G is a key building block for the digital economy." One of the participants asked Teodor if he believed the DSRC-based solution had any disadvantages. He admitted that it is based on old technology. He also said that there is no real business case for just generating safety messages since there is no way to

Session 1

***Moderator**: Russell Shields, Chair, Ygomi*

- *Johannes Springer, CEO, **5GAA***
- *Teodor Buburuzan, Device Connectivity (EECP/3), **VOLKSWAGEN***
- *Dino Flore, VP of Technology, **QUALCOMM***
- *Onn Haran, CTO, **AUTOTALKS***
- *Marjorie Dickman, Global Director & Associate General Counsel, Automated Driving and IoT Policy, **INTEL CORPORATION***
- *Eddy Hartog, Head of Unit, Smart Mobility and Living in DG Communication Networks, Content and Technology, **EC/DG-CNECT***
- *Andre Cardote, Head of Product Management, **VENIAM***
- *Michael Meyer, Head of Radio Architecture and Protocol Research, **ERICSSON RESEARCH**, Aachen*

2. The other vehicle OEMs that have decided to implement either the European or U.S. variants of the DSRC-based solution are GM and Toyota.

recover the cost of the on-board systems or the roadside infrastructure supporting the messaging. He suggested that it would be necessary to find ways of using the Wi-Fi system for other applications, but that VW at present had not developed any.

Russ Shields, the panel's moderator, said there was no solution for solving the cybersecurity issues with the V2V DSRC-based solution unless a V2I support system is put into place. This has been the main sticking point in many of the discussions. Apparently, there are attempts being made to solve this problem with new versions of 802.11p, but this was not discussed in depth. Someone made the point that in the U.S., emergency vehicles communicating with each other must use the cellular network. I have not been able to verify this claim, but if it is the case, it would mean that C-V2X has a major advantage over the DSRC-based systems. One last message was delivered before the session closed. In Japan, where a DSRC-based V2X has been in operation for several years, accidents at intersections with traffic lights that use messaging to warn drivers with V2X technology installed have had a 40% decrease since the technology was implemented.

Session Two: Cybersecurity impact and outlook for automotive systems

Session 2

***Moderator**: Michael L. Sena*

- *Miguel Bañón, Vice President, Business Line Cybersecurity, **DEKRA***
- *Koji Nakao, Rep. ITU-T SG17, **NICT**, Japan*
- *Martin Rosell, CEO, **WIRELESSCAR***
- *Amir Einav, VP of Marketing, **KARAMBA SECURITY***
- *Darren Handley, UN Task Force on Cyber Security and OTA issues (CS/OTA), **DEPARTMENT FOR TRANSPORT** UK*
- *Oren Betzaleli, Senior Vice President & GM, Software Platforms, **HARMAN***
- *Shay Horowitz, Head of Marketing, **CYMOTIVE***
- *Aline Gouget, Technical Advisor, Advanced Crypto, **GEMALTO***

Fast, reliable, and, above all, secure communications are essential for highly automated driving. In-vehicle software will need to be updated to immediately correct problems as they arise. Data used for highly automated driving need to accurately match conditions as they are experienced by drivers. Over-the-air updating of both on-board unit firmware (FOTA) and software (SOTA) must function flawlessly. Both must be performed without threat of security breaches, like spoofing, denial-of-service, and any other type of intrusive action. Every component in the communications delivery supply chain must be designed with cybersecurity in mind. Cybersecurity should be designed into the entire life cycle of both the components and the entire vehicle. This session discuss how full risk assessment should be performed, how end-to-end testing should be addressed, and how security breaches can be detected to mitigate the damage caused by cybersecurity attacks.

The previous session and the two sessions to follow all touched on the critical necessity of cybersecurity for enabling connected vehicles. In preparation for this session, I asked each of the panelists to send me the cybersecurity topic for vehicles they felt was most important so that I could prepare a question to ask them during the panel. Miguel Bañón of DEKRA is the founder of a security evaluation

and testing lab, Epoche & Espi, that was acquired by DEKRA. He believes that without standardized criteria and a strict regime of certification testing, cybersecurity in vehicles will not be achieved. Koji Nakao from the Japan National Institute of Information and Communication Technology (NICT) has been working with standardization in the ITU-T Security SG-17. Choosing a single issue is difficult, he explained, but he believes that increased security can be realized by standardizing a threat assessment methodology for the vehicle eco-system. This relates to what Miguel said, that standards can produce a body of security requirements which can be used in the certification of the vehicle along with its eco-system, and can be applied during the life cycle of the vehicle.

Martin Rosell, CEO of WIRELESSCAR, feels that cybersecurity rests chiefly with the automotive OEMs creating a unified strategy all members of its eco-system. The OEM must choose members that have demonstrated their ability to ensure the end-to-end security of their component, but the OEM must take the responsibility for the connections where the components are integrated into the whole. Sending and receiving messages from vehicles, and communicating with an increasing number of service providers, must be performed by a trusted party, stated Martin, and cannot be managed in the same way as Internet-linked devices are managed today. Responding to a question about whether during the twenty years WIRELESSCAR has been functioning as a telematics service provider there have been any security breaches, Martin responded that there have been no breaches. He stressed that the reason is that the OEMs have thus far used vehicle-specific protocols and heavy encryption.

I asked Darren what requirements the UK government foresees regarding cybersecurity. In 2017, DFT set out 8 principles that established how the automotive sector can make sure cyber security is properly considered at every level. These cover the need to be organizationally set up to develop, maintain and support secure vehicles, the need to consider hardware, software, data and resilience in the design of systems, considering their whole life cycle. To help organizations understand and evidence these principles, British Standard Institute published a Publically Available Standard, CPAS 1885, in December 2018. Darren said DFT recognizes action is needed globally too, which is why it co-chairs a task force at the UN on the subject. The task force has produced two draft regulations, one regarding the cybersecurity of vehicles and another for software updates.[3]

3. Draft cyber regulation:

- Requires organizations to demonstrate how they are set up to deliver and maintain cyber security;
- Requires organizations to demonstrate how they have secured vehicles by describing the internal and external connectivity of a vehicle, the risks posed to it and the mitigations given. Provide an audit to ensure best practice is adopted and followed in the industry.

Approach is flexible, as vehicle architectures and vulnerabilities will differ widely but provide a baseline and a method to respond to incidents should action be needed

Draft software regulation:

- This aims to enable safe and secure updates to vehicles through validating the processes and procedures in place at a manufacturer and the systems used to update software
- Where an update is likely to change or affect a type approved vehicle system it enables a decision to be made whether to re-approve that system.

This is based on principles of quality control, configuration management and ensuring appropriate controls are in place for the safe delivery and execution of updates

What next? We are currently testing the draft regulations to ensure they work.

On the panel were representatives of four companies working directly with developing security for connected vehicles, Amir Einav (KARAMBA), Oren Betzaleli (HARMAN), Shay Horowitz (CYMOTIVE) and Aline Gouget (GEMALTO). They are all working with multiple OEMs on cybersecurity solutions. They could obviously not discuss what they were doing for whom, but they all agreed that an effective strategy for being as close to 100% secure as possible depends on a 'security by design' approach that must be built in from the outset. It is not a matter of adding certificates or encrypted messages on top of a general solution that may work for non-sensitive infotainment applications. Every step must be designed with security in mind.

A participant asked the final question to the panel: "Is cybersecurity for connected vehicles a hopeless dream?" The panel members gave an encouraging response: It is not a dream and it is not hopeless, but it is not free and it is not easy.

Session Three: Automated capabilities and AI in the vehicle: status and expectations

Session 3

***Moderator**: Roger Lanctot, Director, Automotive Connected Mobility, Strategy Analytics*

- *Bryn Balcombe, Chief Strategy Officer, **ROBORACE***
- *Max Cavazzini, EMEA Automotive & Manufacturing Lead, **AMAZON***
- *Anne Mellano, VP of Operations and Co-founder, **BESTMILE***
- *Philippe Huysmans, VP of Growth, **RIDECELL***
- *Alain Kornhauser, Professor, **PRINCETON UNIVERSITY**, USA*
- *Julien Masson, VP Sales, **CLOUDCAR***
- *Holger Weiss, CEO and Founder, **GERMAN AUTOLAB***
- *Tomaso Grossi, Business Development Manager, Autonomous Driving, **TOMTOM***

Driver assistance systems, such as lane keeping, adaptive cruise control, collision warning, and blind spot warning have gradually moved from optional to standard features on most high-end vehicles and are now making their way to all vehicle models. As automated systems assume more and more of the driver burden, and take over increasing amounts of responsibility for driving task, they require both more data and more processing power to make the decisions that human drivers have made. Sensors will take the place of human senses, and artificial intelligence will substitute for human intelligence. Where is this transition today and what progress will need to be made in the coming years in order to deliver on the expectations for driverless vehicles? In this session, Roger Lanctot assembled a panel of global experts on the subject to discuss their views on the progress and the prospects for vehicles that drive themselves.

Roger posed the question: Can there be driverless vehicles without artificial intelligence? Anne Mellano of BESTMILE said that investors have told them the reason why they put money into BESTMILE is because it does not mention AI in its marketing materials. The goal of driverless vehicles is the same as vehicle with drivers, that is, to deliver people or goods from where they are to where they want to be. If you can do this at a lower cost and more safely with vehicles that drive themselves, then the technology will be accepted, whether or not you use AI to do it.

Max CAVAZZINI of AMAZON had said that his company views the vehicle as part of a multi-faced eco-system all built around Amazon Web Services. The eco-system includes *Alexa* (Virtual Assistant), *Amazon Go, Amazon Fulfilment Center*, robot and drone delivery. AI is a critical component of AWS and the data that is collected and processed by AWS is used in all AMAZON products and services. Julien Masson of CLOUDCAR, said that his company aggregated data from content and service providers, and data is assembled from and about users in order to deliver personalized services. So AI is a key component of the service that CLOUDCAR delivers. This service can be delivered today to cars by humans with natural intelligence, but the same type of information will be used in self-driving vehicles to aid in the wayfinding process.

Professor Alain Kornhauser, Director of Princeton University's Transportation Program and Faculty Chair of Princeton Autonomous Vehicle Engineering (PAVE), moved past the issue of AI to why we need self-driving technology. "Comfort and convenience is the new chrome and fins of the auto industry," he said. "Safety has not sold cars because it cost a lot of money. But if cars don't crash (because self-driving cars are safer than cars driven by humans) the cost of safety goes down and more lives are saved. The total cost of mobility also goes down so people who need mobility but who cannot afford it will also be able to have it."

The question comes down to whether the robot(s) driving the vehicle are using neural networks, deep learning or machine learning to perform the driving task. None of the panelists ventured into any these areas. They concentrated the contributions on self-driving technology and how it can improve the safety, comfort, convenience or cost of mobility. Can we have self-driving vehicles at any time and in any place without superior non-natural intelligence? We don't yet have an answer to this question.

Session Four: The deployment of automated mobility services

It was only a few years ago that the battle for space on city streets was between buses and private vehicles. Self-employed drivers working for companies like Uber, Lyft, and Didi Chuxing began to change the competitive landscape as they made personal mobility both more available than buses and less expensive than owning a vehicle in a city. In the past few years, as cities have built more bicycle paths and provided incentives for using them—with standard cycles and electrified ones, as well as scooters—mass transit is

Session 4

***Moderator**: Ian Yarnold, Head, International Vehicle Standards Division, Department for Transport, UK*

- *David Ward, President & CEO of Global NCAP, President & CEO of the **TOWARDS ZERO FOUNDATION***
- *Hiroyuki Inomata, Director for International Affairs Office, **MINISTRY OF LAND, INFRASTRUCTURE, TRANSPORT AND TOURISM***
- *Frank Schlehuber, Senior Consultant Market Affairs, **CLEPA***
- *Joost Vantomme, Smart Mobility Director, **ACEA / OICA***

struggling to keep ridership figures up and vehicle manufacturers places, large and small.

This session was less of a panel and more of individual presentations. The main take-aways for me from this session were two points made by David Ward. He said the continued use of the 90% of accidents being attributable to human error is not only misleading, but wrong. There is a causal chain of events that occur when accidents happen, and the last element in the chain is the human. Many of the accidents are what are called design-induced and are related to how the roads and surroundings interact in different weather conditions, at different times and day, with different levels of traffic. Humans are at the controls, but if all the elements were properly designed so that conflicts could be more easily avoided, many accidents would not occur.

The other point David made was that there is no hurry to rush into driverless and self-driving vehicles. If we eventually do have vehicles that drive themselves without human involvement, they have to work better than humans. In the meantime, we are making great progress on advanced driver assistance systems that will save lives.

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The Symposium was opened with remarks by the co-chairs, Bilel Jamoussi Chief Study Group Department, Telecommunication Standardization Bureau, ITU, and Walter Nissler, Chief of Section, Senior Economic Affairs of UNECE. The keynote address was delivered by Jean Todt, UN Secretary General's Special Envoy for Road Safety and President of FIA. Mr Todt began his work career as a rally co-driver and has been involved with automobiles for his entire life, so he knows where we have been. His keynote was, as usual, an inspiration for working toward safer mobility. Houlin Zhao, Secretary General of the ITU, gave the opening address. Mr Zhao has been in his post since 2014, and before that he served as ITU Deputy Secretary-General. He was responsible for creating the **FNC SYMPOSIUM**, and it was clear that he was extremely pleased with how it has developed and evolved. Olga Algayerova, Executive Secretary, UNECE, gave a second opening address.

There were two additional sessions that presented the work on intelligent transport systems of the co-sponsors of the Future Networked Car Symposium, ITU and UNECE. Bilel Jamoussi, gave the ITU presentation.[4] Ian Yarnold, Chair, IWG on Intelligent Transport Systems of the UNECE gave the second presentation.[5]

I look forward already to next year's **SYMPOSIUM**. This one was great.

4. https://www.itu.int/en/fnc/2019/Documents/Bilel_Jamoussi_Presentation.pdf

5. https://www.itu.int/en/fnc/2019/Documents/Ian_Yarnold_%20Presentation.pdf

Dispatch Central

*"Our community is comprised of several small neighborhoods, called **Villages**, which explains how our hometown got its' name."*

*In 2018, the median age for both sexes in **The Villages** metropolitan statistical area is 67.4, with this being 29 years older than a typical American, and five years older than the median age of residents in the next-oldest county in the United States, which is on the Hawaiian island of Molokai. Between 2010 and 2017, the population of The Villages area grew almost 33 percent, from 94,279 in 2010 to 125,165 in 2017. According to U.S. Census data released in March 2018, The Villages was the 10th in the annual list of fastest-growing metropolitan areas in the United States.*

6. *Ready or Not, Here Comes the Waymo Taxi Robot*. **THE DISPATCHER**, November 2018.

7. PAUL EVANS: "Seven Little Girls Sitting in the Back Seat"

Seven little girls sittin' in the back seat huggin' and a'kissin with Fred.
I said, why don't one of you come up and sit beside me, and this is what the seven girls said:

Keep your mind on your drivin',
Keep your hands on the wheel,
Keep your snoopy eyes on the road ahead.
We're havin' fun, sittin' in the back seat,
Kissin' and a'huggin' with Fred.

Driverless Power to the Geezers

A 'geezer' is defined by Merriam-Webster as an odd or eccentric person, used especially for older men. Well, in the sense that the term 'guys' was always used to refer to boys when I was growing up, but now can be used to refer to either sex, I will take the liberty to extend the term 'geezer' to everyone who is past middle age, regardless of sex.

I AM ON RECORD as stating that it is a shame to see Google wasting so much of our money (Where did you think its $illion$ came from?) on having its Waymo taxi division developing a driverless chauffeur service for rich kids and their parents in wealthy suburbs.[6] I was therefore pleased to see that there is a company working almost exclusively with people at the other end of the age spectrum. VOYAGE AUTO is convinced that the real market for driverless personal vehicles is in large retirement communities, like *The Villages* in Central Florida (see sidebar). The company has given several reasons in published interviews why it believes retirement communities will be the major market for self-driving vehicles:

- Retirement communities usually are in places where it doesn't snow, so self-driving car sensors will have an easier time functioning;
- The communities are self-contained, with the roads controlled and owned by the community organizations, generally have lower speed limits and less traffic;
- Demand has fewer peaks because everyone is retired;
- The owners of the communities can share in the income of providing ridership.
- Retirement communities are among the fastest growing residential areas in the U.S.

All of these conditions could also apply to a taxi service, but the cost would be higher due to the driver. More importantly—and this is not stated in the articles—it would add another pair of eyes in the vehicle.[7] Retirement

communities in general, and *The Villages* in particular, are places where 'still active' seniors retire to have fun. Smooching in the back seat of a car was fun as a pre-adult; why not as a post-retiree? I think VOYAGE and *The Villages* are on to something with eliminating snoopy chauffeurs.

VOYAGE AUTO was formed in 2017. It is a spin-out of UDACITY, the company formed in 2012 by Sebastian Thrun (2005 DARPA Grand Challenge, founded Google X and led Google self-driving car team). Thrun, a serial professor and start-up maven, is somehow involved in VOYAGE. UDACITY began as a company offering massive open online courses (MOOCs). When it started to offer a self-driving car curriculum, some employees decided to attempt a 32-mile drive in one of their self-driving test cars on busy El Camino Real during rush hour and without human intervention. Reportedly, after five months of failure, the team finally completed the route. They decided to start a new company as a result and called it VOYAGE AUTO. They raised an initial $5.6 million from investors.

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This is serious; we have to do something

No, it's not the POTUS talking about a wall. It's the Millennial socialists calling for a revolution and promoting their *Green New Deal*. Instead of a sixteen-year-old fronting this plan (see Musings) there is a twenty-nine-year-old, newly elected Democratic member of the House of Representatives, Alexandria Ocasio-Cortez (her adorers have started calling her AOC, like FDR and JFK, get it?), along with Sen. Ed Markey, D-Mass. Ocasio-Cortez's credentials for getting elected were serving as an intern to Senator Ted Kennedy (although she must have been very young because the Senator died in 2009) and working as an organizer on Senator Bernie Sander's presidential campaign in 2016.[8] She was a bar tender for four years before she quit to run for Congress. Ms. Ocasio-Cortez was elected on a Sanders-like socialist platform, and calls herself a Democratic Socialist.

The "Green New Deal" is the opposite of the real "New Deal". While the "New Deal" was intended to put people to work again after the ***Great Depression*** and to offer relief to the massive numbers of unemployed by creating public work programs, the "GND" is intended to compensate people who are to be put out of work by the closing of workplaces as a result of GND laws. These laws would drastically cut allowed emissions and thereby quickly reduce them by shutting down fossil-fuel-based electricity generation and coal extraction. This will obviously also result in

The New Deal - *"The domestic program of the administration of U.S. President Franklin D. Roosevelt between 1933 and 1939, which took action to bring about immediate economic relief as well as reforms in industry, agriculture, finance, waterpower, labour, and housing, vastly increasing the scope of the federal government's activities. The term was taken from Roosevelt's speech accepting the Democratic nomination for the presidency on July 2, 1932. Reacting to the ineffectiveness of the administration of President Herbert Hoover in meeting the ravages of the Great Depression, American voters the following November overwhelmingly voted in favour of the Democratic promise of a "new deal" for the "forgotten man." Opposed to the traditional American political philosophy of laissez-faire, the New Deal generally embraced the concept of a government-regulated economy aimed at achieving a balance between conflicting economic interests."*

Written By:
The Editors of Encyclopaedia Britannica

8. Senator Sanders is a darling of the European Social Democrats, and a soul mate of a true socialist, U.K. Labour Party's leader, Jeremy Corbyn. He was born in a New York City borough, Brooklyn, attended college in Chicago and decamped to Burlington, Vermont in 1968 at the age of twenty-seven because he was "captivated by rural life." He still lives there when he's not in Washington, DC.

Full Disclosure: I have been a registered Social Democrat in Sweden, although I am presently not a member of any political party.

substantial layoffs. Democratic Party leadership has not welcomed this initiative since purposely putting people out of work has not been a pillar of its policies. House Speaker Nancy Pelosi refused to commit to holding a vote on the Green New Deal, saying Congress needs something that is "evidence-based."[9]

Republicans are not missing the chance to call out the authors of the GND as enemies of democracy. Vice President Pence in a speech to a political action committee made an inevitable comparison to Venezuela as proof of the dangers of the socialist model.[10] He said "… the only thing green about the so-called Green New Deal is how much green it's going to cost taxpayers if these people ever pass it into law. The truth is, we want to make poor people richer; they want to make rich people poorer. We want to make poverty more rare (sic); they want to make poverty more comfortable. That's the choice we face today: between freedom and socialism, between personal responsibility and government dependence."

The Sander's phalanx of the Democratic Party is congratulating themselves on crafting a concept that they feel can gain the acceptance of unions and workers in the industries that will be most affected by actions they will take to combat global warming. Most Democrats are trying to create an alternative that will have a significant effect on reducing global warming while being able to gain support among their constituencies, the majority of their own party's legislators and enough members of the opposition Republicans to ensure passage. The current administration is sitting in the catbird seat watching it all, convinced that pasting a socialist label over the GND and its backers will ensure its defeat, and that it can water down any centrist proposals. Unfortunately, the loser in this comedic tragedy will be the climate.

9. The proposed GND promises universal health care—beyond what is included in the current provision of health care under what has been known as 'Obama-care—and affordable housing. It has become a collector of everything on the wish list of the Democrat's left wing, rather than a focus for climate change efforts. This is what the Millennium socialists see as its attraction and the rest of the party see as its unpassability.

10. The reference to Venezuela's President Nicolás Maduro and the connection to Ocasio-Cortez, whose parents were both from Puerto Rico, was not inconsequential.

When is a Mustang not a Mustang?

ANSWER: WHEN IT'S AN AVIAR R67. I'm not sure Bill Ford would agree in this instance that, as Oscar Wilde said: "Imitation is the sincerest form of flattery that mediocrity can pay to greatness." A Russian automobile company named AVIAR plans to build a battery electric vehicle that looks like a 1967 Ford Mustang Shelby GT500. Not satisfied with one rip-off, AVIAR has designed its instrument panel to look like a *schlocky* version of the Tesla Model 3. It is not clear whether the vehicle actually exists in prototype form or is still a Photoshop creation. As Oscar Wilde also said: "The truth is rarely pure and never simple."

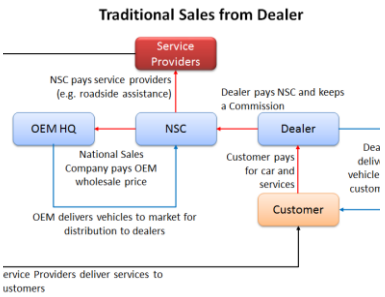
An OEM blinks (sort of) on speed

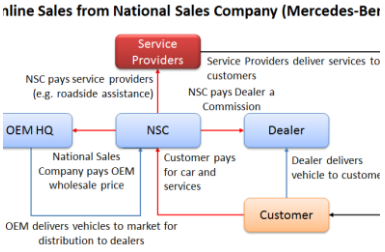
VOLVO CARS announced on the eve of the 2019 Geneva Motor Show that it would be limiting how fast its cars could be driven to 112 miles per hour (180 kilometers per hour) beginning in the middle of 2020. The top speed limit in Volvo's home market is 120 km/hr. The top speed limit in its biggest market, China, is also 120. In the U.S., Volvo's second largest market, the top speed allowed is 65-70 mph (100-112 kph) where it sells the most cars and 85 mph (136 kph) in the middle of Texas where if you aren't driving a pick-up, and especially if you are driving a fer'n car, you're probably going to get a speeding ticket even if your speed is under the limit. So why make a fuss about this announcement? Because even though it is totally ridiculous that motorized road vehicles can be driven at speeds that exceed the legal limits, nothing has prevented them from doing so. Nothing.

So let's look at this as a first step in the direction of correcting a huge error that both the auto industry and the world's governments have committed ever since there were motorized road vehicles and speed limits on roads. A little 'Hurrah' for VOLVO CARS. It would have been bigger if the limit was at least closer to the speed limits on the roads on which the cars travel. The really big 'Hurrah' will come when cars drive no faster than the speed limits everywhere.

...while another OEM blinks on sales

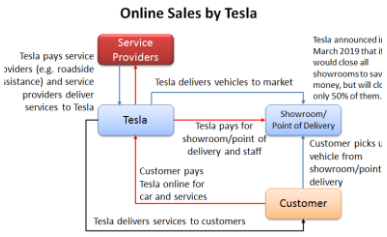
Mercedes-Benz, a division of DAIMLER AG, announced on the eve of the 2019 Geneva Motor Show that it would start a trial of selling its cars online. Sweden has been selected as the test market because the company determined that Swedes in general are more open to Internet services than people living in other countries. Moving to online sales for a car company that has depended on dealers for all customer contacts has not been easy. Negotiations in Sweden began a year ago with the dealer network comprising twenty-three franchise owners, some having multiple stores. The principal negotiating partner for MB with the dealers has been the general sales agent for Sweden, also known as a national sales company or importer. It will be from the general sales agent that customers will purchase their vehicles online for fixed prices. In other words, no haggling. Dealers will serve as the places where prospective customers can test drive vehicles and from where purchased vehicles will be delivered. This will establish the point of contact for warranty services, parts and accessories sales.





This approach seems to be totally reasonable. Dealers are still very much part of the customer experience. If customers are used to purchasing their cars and then using them as part of the trade-in for a new car, they can still do this with the dealers, but instead of receiving money off the purchase price, they will receive cash or in-kind payments for accessories or services. MB will evaluate the results of the test and decide whether it will roll it out in other markets. How the dealers react, and whether they believe it is a positive move for them will be part of the decision process.

MB's move to online sales is significantly different from Tesla's approach. Tesla has never had dealers or national sales companies. There have been showrooms where prospective customers could kick tires, get help from a human being to make the limited choices of exterior colors and interior finishes, organize a test drive and have a place where they could pick up their cars. At the same time as Mercedes-Benz was announcing its online sales test in Sweden, Tesla was telling its prospective customers that all sales in the near future would be online only. This is after it had made opening showrooms a major part of its sales process. Less than a week later, Tesla backed off its 'closing all stores' statement, saying that it would only be closing one-half of its showrooms. It found out that reneging on all of its leases was not possible, so it would be forced to stay put in half of its stores until the leases expire.[11]



11. The reason Tesla gave for closing its showrooms was to reduce its costs in order to deliver on its promise of having a maximum price of $35,000 on the base Model 3. Since it cannot close all of its showrooms, it will increase the price of its Model X and Model S. Tesla's stock price has fallen during the past month due to a falloff in orders for the Model 3 after the pre-ordered vehicles at higher prices were handed over to customers. On the positive side for Tesla, it has started construction of an assembly plant in China. It is the first car OEM that will not require a domestic joint venture partner in order to manufacture cars in China.)

Veoneer: After the hype, reality hits—and bites

"There is a growing understanding that it is going to take a longer time and cost more than we expected before completely self-driving vehicles become a reality," ruminated VEONEER's CEO, Jan Carlsson, in a Valentine's Day article in Sweden's premier business newspaper.[12] The company had just reported a fourth quarter loss of SEK 800 million ($80 million). The stock price had fallen from a high in August, 2018 of SEK 500 to SEK 200 in January. Falling car sales in China and dampened outlooks in Europe and the U.S. were part of the cause for the company's share price falls, but lower expectations for self-driving cars, a principal focus for VEONEER, was seen as the major culprit. Fast forward three weeks. The same newspaper, but a different author, Robert Triches, put a different spin on VEONEER's prospects. He said the company is poised for major growth precisely because self-driving cars are not on the immediate horizon. VEONEER's strengths are in non-LiDAR technology (radar and cameras) where the growth will be. Veoneer's order book is full and it has SEK 800 million ($80 million) in the piggy bank. The short-term looks bleak, but good times are ahead, thinks Triches.[13]

12. Lundstedt, Mats. *Efter hajpen-nu bromsar Veoneer*. Dagens Industri (14 February 2019).

13. Triches, Robert, Mats. *Veoneer får stöd*. Dagens Industri. 9 March 2019.

EU CAD and CCAM Policy and Regulation Initiatives

Treaty on the Functioning of the European Union (TFEU) *is one of two primary Treaties of the European Union, alongside the* ***Treaty on European Union (TEU)****. According to Article 225 of TFEU, the European Parliament has a right to request that the European Commission (EC) take legislative action in the form of a legislative initiative report. All European Parliament legislative initiative reports must automatically be accompanied by a detailed* ***European added value assessment (EAVA)****.*

14. *Report with recommendations to the Commission Civil Law Rules on Robotics, (2015/2013(INL), European Parliament*, Rapporteur: Mady Delvaux (S&D, Luxembourg).

15. *A common EU approach to liability rules and insurance for connected and autonomous vehicles. European Added Value Assessment. European Parliamentary Research Service*. Tatjana Evas, European Added Value Unit (Feb. 2018).

FIFTY YEARS AGO CAD and CAM were acronyms for something totally different from what they are being used for today: computer-aided design and computer-aided manufacturering. European Union initiatives with these labels now stand for Connected and Automated Driving and Cooperative and Connected Mobility. They have added a third: Connected and Autonomous Vehicles (CAV).

Liability Rules and Insurance related to CAVs

The European Committee on Legal Affairs (JURI) has written a draft legislative initiative report (INI) on the civil law rules on robotics.[14] This report was prepared by Mady Delvaux-Stehres, Vice Chair of JURI. JURI then requested that the Directorate-General for Parliamentary Research Services (EPRS) prepare the EAVA that must accompany an INI.[15] The report's primary purpose is to provide a scientifically based evaluation and assessment of the potential added value of taking legislative action at the EU level.

What did the EAVA conclude? EPRS concluded that "it is necessary to revise the current legislative EU framework for liability rules and insurance for connected and autonomous vehicles…to ensure legal coherence and better safeguarding of consumer rights. It would also be likely to generate economic value." The authors argued that by accelerating the adoption curve of driverless or autonomous vehicles by five years, there would be the economic potential to generate European added value worth approximately €148 billion. This was the principal conclusion presented in document *Abstract* and *Conclusions*. How did they reach this conclusion?

Perhaps it will not come as a surprise to hear that EPRS commissioned two studies, one to measure the quantitative value (by RAND Europe Consultancy) and the other to measure the qualitative value (University of Utrecht). RAND conducted a cost-benefit analysis to "explore the scale of social and economic benefits of faster roll-out and take-up of AVs in the EU." The full RAND report is included as an appendix and describes its methodology. Of the €148 billion, €116 is accounted for by 'transport user impacts'. These are based on an estimated reduction in the "generalized costs of transport for the users of 'fully autonomous vehicles (FAVs)—the report's term—due to increased productivity (lower Value

of Time) and more efficient driving. More efficient driving benefits normal car users through reduced congestion and leads to reduced environmental costs.

Perhaps it will also not come as a surprise to my readers that I am less than convinced of the veracity and reliability of these numbers. More importantly, the main conclusion of the report related to what is the principal focus of the primary report (Do you remember what it is?), liability rules and insurance for connected and autonomous vehicles, the conclusion is to leave the Product Liability Directive (PLD) and the Motor Insurance Directive (MID) pretty much as they are since no real value is added by messing around with them.

DG Connect tackles CAD

Directorate-General of Communications Networks, Content & Technology (DG Connect)

One thing to keep in mind when reading anything emanating from the European Commission is that it is very concerned with the competitiveness of EU businesses. It was originally started to strengthen the economic positions of several European countries in a world which at the time was dominated by the United States. For many, this remains the sole purpose of the EU in general and the Commission in particular. I often feel the Commission is like an impatient child once it learns what it will be getting for Christmas. For the child, Christmas should be tomorrow. DG Connect wanted to know what is standing in the way of CAD and CCAM, and what can the Commission and eventually the Parliament do to clear the hurdles, whatever those hurdles are.

In order to shed light on this topic, it commissioned a report from a trio of organizations.[16] Their 164-page report, one-half of which is annexes, begins with the following statement: "The uptake of CCAM is being affected by a number of elements such as technical challenges, regulatory hurdles, and commercial bottlenecks, which in turn will impact social and marketplace acceptance." They left out two key factors: **Need** and **Demand**.

There is one reason to obtain and read this report. The authors have done an excellent job of assembling and explaining information on the transport-related laws, regulations and practices in some EU countries. But it does not answer the two questions posed by DG Connect. It couldn't because first of all they are the wrong questions, and second, the Commission should be talking directly to the people who can shed light on the issue, not people who just quote from market reports written by other people who are not directly involved in the business of building cars, trucks, buses and other transport modes.[17]

16. *Scenarios and conditions for the implementation of CAD and proactive mapping of policy measures.* VVA Consulting; Sant'Anna University, Pisa; TNO. (August 2018).

17. Why is this so difficult for the Commission to understand? It is like talking to a person about a child or an elderly person as if they were not in the room when they are in the room. One reason for this behavior is probably that they will not like the answers they receive and it is much easier to pay for reports that tell them what they want to hear. A pity that so much time and money is wasted in the process.

Dispatcher's Musings: Control and Impact

DISCUSSING AND ADDRESSING climate change is not a phase we are going through, a topical subject that will eventually recede from our consciousness as we lose interest and focus on less depressing issues. It's with us for the duration, either until humanity transitions to a test pattern before finally fading to black, or until we find the way to reach equilibrium and live on until some other catastrophical event occurs to wipe us out.

In one way or another, each of us will have to come to grips with climate change. We can see today that how we do it can vary from angrily demanding that we—and everyone else—stop doing everything that adds an ounce of harmful emissions to the atmosphere (which, it seems, also adds a gram of pleasure to the time between when we are born and when we die), to devoting all of our energy to finding a way to prevent the inevitable emissions from doing harm, to everything in between.

I am somewhere in between. I don't want you to give up your steak and I don't want to be forced to give up driving to my river to fish. If everyone becomes paralyzed by the fear of dying, there ain't much point in going on living. If everyone can become an expert overnight on how to save humanity, and shove their formula into everyone else's face, life is going to get damn unpleasant while we're trying to live it. This Musings is about gaining control and making an impact in the realm of climate change and the era of fanatical positions.

IN MY BOOK, **Beating Traffic: Time to Get Unstuck**, I argued for a personal approach to solving the problem of traffic congestion. By avoiding the likely places where congestion often occurs, by choosing the times of day we travel by car, and by mixing our modes in a thoughtful way, we can minimize the irritation of our own delays and help to contribute to the smoother flow of our fellow drivers. The point is that there are things that each of us can do that will make a real difference to ourselves and others.

I also said there are other decisions we make that end up having salient effects on the degree to which traffic congestion disturbs our lives, such as where we live and where we work. These important decisions are often determined by factors that are largely out of our control, such as our income and where work can be found. Whether we are married or single, have children or have other family obligations, participate in clubs or volunteer work can all determine whether we need to have a car and both if and when we must use it. So even though you can take ownership and have a positive impact on many of the factors that cause traffic congestion, some factors are related to life decisions that we make without always having control over the consequences.

Do you turn down a terrific job offer because it would require that you drive from your downtown apartment? Do you move out of that apartment to be closer to your new job and give up all the amenities you have in the city in return for an expensive bungalow in a suburban tract? The solution is always to find a compromise since we usually cannot maximize the positive effects on every part of our lives. We cannot own a big house with a four-car garage next door to our place of work, the kids' schools and our favorite restaurant—unless we own all of them.

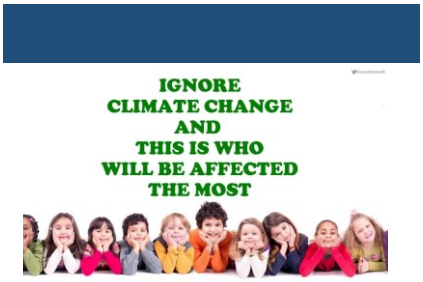
These are tough existential questions, but maybe not so difficult if you compare them to decisions that we are now being asked to take concerning the climate. I have been musing over whether we can apply the traffic congestion metaphor—take personal control and make an impact—to addressing climate change. Or is the climate change

enigma so radically different that it is not applicable. Of course climate change is on a completely different scale of importance compared to traffic congestion, but many people experience the problems of traffic congestion on a daily basis, often every time they need to move from one place to another, while climate change is mostly abstract for the majority of people until hurricanes hit, forest fires blaze and temperatures reach heretofore unreached heights. My ruminations are mainly the result of actions being taken by some lawmakers in the U.S. with their *Green New Deal* (see *Dispatch Central*), and by teenagers in Sweden, Belgium, France and the U.K. inspired by a sixteen-year-old girl in Stockholm for whom climate change has become a 24/7 engagement.

Who decides which channel we watch?

Greta Thunberg was fifteen when she decided to exchange her school desk for the steps of Sweden's parliament building during the three weeks leading up to the parliamentary elections on September 9th, 2018. The purpose of her sit-in was, in her words, to "demand that the government undertake a radical response to climate change." She returned to school following the election, but only four days a week. On Fridays, she is back on the steps of parliament. She says she has been supported by many members of parliament, although they all tell her she should be in school, learning what she needs to learn to help solve the climate problem. Her parents, both very well-known and successful performing artists in Sweden and internationally, have told her that they would prefer she was in school as well, but no one is forcing her to do so. Why not?

Greta is getting a pass on being labeled a truant because she is extremely engaged in the climate issue, and she is extremely engaged because she has been diagnosed with autism, A.D.H.D and other conditions.[18] She was quoted in a NEW YORKER article (Yes, she has become that famous) on the subject of her concentration: "I have a special interest. It's very common that people on the autism spectrum have a special interest. I can do the same thing for hours."[1] Or years, as it turns out. It started when she was nine, she says, when she could not understand why she was being asked to save water, turn off lights and not waste food. If climate change was so important to affect her life and the lives of everyone around her, why weren't the people in charge of things doing something about it? She put her mind to learning all she could about climate



I don't agree with the message in this poster. Talk about age discrimination! Everyone is affected by climate change in different ways. People of retirement age, who were getting ready to enjoy their life after decades of work, and who now want to travel to all the places they have dreamed of while they were earning a living for their families, are being shamed by their grandchildren for flying and taking cruises. Will children now strive to become 'child heroes' (see George Orwell's 1984), denouncing adults for crimes against the climate?

If you want to get to the real source of global warming, you need to go back to when humans started farming, growing the crops that vegetarians want to substitute for what humans ate when we were all hunters and gatherers. That's when climate change began. If it's 'degrowth' that our children are asking for, then we need to start adultsplaining to them what that really means. No Instagram for coordinating school strikes, for starters.

18. Greta's mother, Malena Ernman, wrote a book, Scener ur hjärtat (Scenes Out of the Heart) about parenting children with special needs. Greta's sister is also diagnosed with autism. Profits from the book are going to eight different charities working with environment, children with diagnoses, and animal rights.

19. Gessen, Masha. *The Fifteen-year-old Climate Activist Who is Demanding a New Kind of Politics*. THE NEW YORKER. October 2, 2018.

change. She says she gave up flying and eating meat in 2015, when she was twelve, and then her parents did the same a year later.

Greta became an almost overnight celebrity. She was invited to speak at the *World Economic Forum* in Davos, Switzerland and the UN climate summit *COP24* in Katowice, Poland.[20] I listened to her Davos speech (not in Davos, of course since I wasn't invited, and, believe it or not, **THE DISPATCHER** is not on the list of Davos-accredited newspapers). As someone who graduated from college in 1969, I felt I was listening to one of my classmates from the Students for a Democratic Society haranguing the university's administrators over its tacit support for the Vietnam War. "I'm not here to ask for your permission; I'm here to tell you how it is going to be," he would say, and that was the basic tone of Greta's speech. The SDS and other student organizations also called for strikes, which closed some institutions for half a school year. In her speech, Greta scolded those gathered in Davos for enriching themselves and a tiny percentage of the world's population by destroying the climate. She finished with the following: "Power belongs to the people and we will use it." It was like someone had dusted off one of the many speeches given at the inflection points of radical historical change, like in the 60s for example, and substituted climate change for another burning cause (e.g.,Vietnam War, French Revolution, slavery and voting rights).

How much is enough guilt?

I wonder how the 'true' Liberals assembled in Davos felt to hear that their own life's work was being demonized.[21] They had believed that by increasing the wealth of their own nations it would bring the masses out of poverty; that by increasing the benefits of medicine to those who could afford treatments, eventually, those treatments would be available to everyone. The facts of climate change are on Greta's side, but not the claim that the people of the world are worse off today than a century ago or even half a century ago.[22] And the entire basis of the Paris climate accord is that the developing countries will continue to be able to make progress and eventually catch up with the developed counties, and the developed countries will pay them to do so.

Through her silent strike, sitting in front of the halls of power in Sweden, Greta gained personal control of an issue while giving herself an outlet for her anger and fear. She was bringing attention to the climate change issue without bringing too much attention to herself. But then people (adults) decided to make her a symbol by giving her the microphone to make speeches in which she tells

20. Greta reportedly took the train from Stockholm to Davos, Switzerland, something I had planned to do as well to attend the ITU Symposium in Geneva, until I added up the time (32 hours) and cost (five times more than flying if I didn't eat or drink anything along the way).

21. THE ECONOMIST journalists (who work for a newspaper that is on the Davos-accredited list and were present), representing 'true' Liberalism, must have been apoplectic. As a regular reader of that newspaper, I noticed there was no coverage of Greta's speech.

22. Fellow Swede, Hans Rosling, a physician, academic, statistician and gifted public speaker, who had devoted his life to research and assembling facts, promoted the use of data to explore development issues. He died in early 2017 at the young age of 68. His posthumous book summarizes his view on the future of humanity: ***Factfulness: Ten Reasons We're Wrong About the World—and Why Things Are Better Than You Think.*** Rosling's main message, which he delivered relentlessly and brilliantly, was that the lives of more people are improving.

https://www.ted.com/playlists/474/the_best_hans_rosling_talks_yo

everyone that they have done nothing, or that what they have done was worse than doing nothing. She has increased her impact, but lost control of the message. Inspired by her speeches, children have taken to the streets and called for school strikes. Staying away from school, becoming a vegan or giving up flying will not solve the problem that the impact of global warming will have on humans, no matter how much better it makes a person feel.

"Cut them some slack, Mike. They're only kids." Yes, exaclty. It's just so ironic. The kids who are on school strike and becoming diehard vegetarians have been flown all over the world on family vacations, chauffeured everywhere by their parents and enjoyed birthday parties hosted by MacDonalds. Their parents moved to places where their children could attend the best schools so they would be able to get into the best universities so they could get good jobs and be able to afford to do the same for their kids. Their parents could just as well have stayed in their apartments or cramped houses in the city where they had grown up, let their kids go to the same schools they had attended and sent them to scout camp for a few weeks in the summer. We'd have less sprawl, less traffic congestion and many fewer spoiled kids who believe the world owes them a living and a ride anywhere they want to go.

It is a fact that a great deal has been and is being done to stop global warming by individuals on a small scale (insulating their houses, installing solar panels, buying more energy-efficient tools, including vehicles) and by industry on a large scale, including the vehicle industry. It is just that it has taken a very long time for politicians to catch up, and some politicians (read that Greens) have a strong interest in telling everyone how little is being done so they can continue to convince people to vote for them. The trouble is that by giving prime space in the news and on social media to complaints about nothing being done, both children and adults feel there is no hope to save humanity from climate-induced annihilation and there is absolutely nothing they can do about it. The sun is just too big and too far away. They can't take control and they can't make an impact. Let's go on strike, or let's start a revolution. They become fanatical.

All we need is compromise. Compromise is all we need.

As with most problems that appear to be intractable (Take, for example, the conflict that was caused by the establishment of the State of Israel.), people on both sides of the conflict become fanatical in their behavior. A fanatic is a person who sees no possibility to compromise his or her views. A very insightful book

by Amos Oz, the Israeli author, addresses the topic of how fanaticism in the Israeli/Palestinian conflict leads nowhere.[23] Oz says that until both groups move toward each other through acceptance that they are both victims, there can be no way for them to live together, either in one state or two.

The biggest fear I and my male colleagues had when we reached high school and college age was dying or being ruined for life in the Vietnam War. The biggest fear my father and other men had when they were draft age was dying or being ruined for life in World War II. The biggest fear that my grandfathers' generation had was being killed or ruined for life in WWI. And so it goes. Just as the Vietnam War was ending, the 1972 killing of Israeli Olympians in Munich by Black September ushered in an era of global terrorism that continues to this day. The 1973 oil embargo, proclaimed by OPEC, which was targeted at nations that supported Israel during the Yom Kippur War, caused an oil crisis with many short- and long-term effects on global politics and the global economy. People queued at filling stations and supplies ran out. For a few months, life revolved around finding filling stations that had supplies and making sure the car's tank was full. This coincided with a period of recession, when unemployment was very high. The Vietnam protesting generation were now ready to start a life, to do what our parents and grandparents had done once they made it through the crises that occurred when they were entering adulthood, but it seemed that fanatics had a different idea.[24]

Now, the biggest fear that young people have is that they will not be able to live in a world that was like the one they were born into. And, like the generations before them, they are turning to those who gave them life and blaming them for their future misfortunes.[25] As we discovered when we were adults, there is no long-term gain in that strategy. Those who continue with such views are labeled fanatics. If we, young and old alike, are really going to take control and make an impact, we need to look for common ground. If children truly believe the world will come to an end as a result of climate change during their lifetimes, and therefore see no reason to attend school, then we either need to confirm or refute this belief with science, not with conspiracy theories. If it takes going back to the Stone Age to reverse climate change, then everyone needs to be engaged in reversing 10,000+ years of human evolution. If we believe we can make it with technology, then our scientific community really needs to step forward. Right now, we are stuck in a climate traffic jam.

23. Oz, Amos. **How to Cure a Fanatic** (2002). In this book, Oz addresses the topic of how fanaticism leads nowhere. Fanatical Israelis refuse to accept the fact that the Palestinians were made refugees by the establishment of their state, and the Palestinians refuse to accept that most of the people living in Israel are also refugees, forced out of either Europe before and during the World Wars of the 19th Century or out of the Arab and muslim countries, particularly after the Yom Kippur War.

This famous photo was taken during the siege by Black September and shows a kidnapper on the balcony attached to Munich Olympic village building where members of the Israeli Olympic team and delegation were quartered.

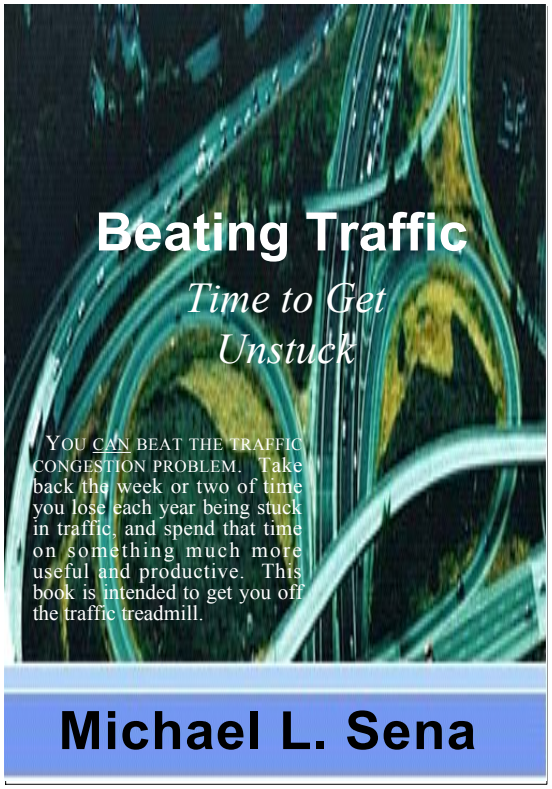
24. Events of September 11, 2001 continue to influence the political agendas in many parts of the world and bring misery to millions of people everywhere. Terrorists will not be spared the effects of global warming, and one has to be a true fanatic to believe that global warming will be halted once everyone is directing their prayers in the direction designated by those fanatics.

25. During a Friday school strike for the climate march in Hamburg, Germany on the 1st of March, a Swedish reporter asked Greta Thunberg if she was angry. She replied: "Yes, we are angry. We are angry because the older generation continues to steal our future." I guess every generation has felt that way at one time or another about their parents' generation. Then we become that generation.

About Michael L. Sena

Michael Sena, through his writing, speaking and client work, attempts to bring clarity to an often opaque world of vehicle telematics. He has not just studied the technologies and analyzed the services, he has developed and implemented them. He has shaped visions and followed through to delivering them. What drives him—why he does what he does—is his desire to move the industry forward: to see accident statistics fall because of safety improvements related to advanced driver assistance systems; to see congestion on all roads reduced because of better traffic information and improved route selection; to see global emissions from transport eliminated because of designing the most fuel efficient vehicles.

This newsletter touches on the principal themes of the industry, highlighting what, how and why developments are occurring so that you can develop your own strategies for the future.



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