

Issues on New Technologies' Safety Assessment

H. Machado Jorge, Ph. D.

Lisboa

February 28, 2019

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- No technology should per se be deemed as «ethical» or «non-ethical». Arguments can frequently be used either way, pro and con. What really ought to be screened is the **circumstances** a given technology raises and the **uses**, good or bad, that can be made out of it. The **human factor** indeed is a determining element within a set technology. But what should herein be meant by human factor?

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- What is the **evaluation** standard procedure in a technological context? The common approach is to call upon **specialists** for providing assessments and issuing recommendations on how to sort out the detected problems. But what if, in the very first place, specialists indeed were the ones, though obviously unintentionally, who created the questionable situation(s)?

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- Will there be overall **dilemmas** that we recurrently fail to recognize and face up to? Let's take as a simple example: the issue of **road fatalities**. Portugal, as well as other European countries, is facing (the past two years) an increase of casualties in road accidents, after a number of years of very significant, sustained gains (2010-16: -40%). What **explanation(s)** do we find for this recent pattern reversal?

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- A current *mantra*: excess or excessive **driving speed**. But that indeed is just *a consequence, the front end of a cascade of associated causes*. Tackling those «excesses» solely via **repression**, as usually done or advised to do, though it may even provide some temporary respite, by no means will generate a sustainable solution. Repression indeed does not address the actual **determining factors**.

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- A simple but revealing **illustration**: The coming up, some decades ago, and success of a generation of very skilled Finnish competition drivers (rallies and F1 racing) led to a subsequent noticeable increase in road accidents and quantity of victims in Finland. The **correlation** between those two phenomena was difficult to miss. What lessons may we extract from such (unintended, obviously) «social experiment»?

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- **How to** expect success if: (i) adopting as «gospel» that people ought to be creative-innovative-entrepreneurial in their professional/economic standing; together with (ii) not acting in respect of the well-known practice of the automotive industry of flooding the market with vehicles of ever-increased performance; and *then* (iii) setting speed limits of 50 or 30 km/h in traffic environments with no perceptible danger of accidents?

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- For aiming to being successful vis-à-vis all those contradictory contributing factors we have to resort to **education** (and **persistent reminding**), not solely **repressive enforcement**. Only on the basis of solidly ingrained **ethical values** and **good judgement** may the individual find a **sustainable balance** between personal will and social duty. And that ought to become an unending collective pursuance!

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- The current «battle» in Portugal against **forest fires**: after the infamous summer 2017, the whole Portuguese society has been brought to act, through a **differentiated set of *direct responsibility levels***, and we are witnessing results. As long as everybody is enticed to gaining the perception that this is a **shift in attitude and behaviour** that came to stay and shall be continuously enforced, matters shall change for the better!

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- **Autonomous driving** has the potential of, at the very same time, becoming a blessing or another source of societal distress. The first step to take: to recognize that this is not solely a «specialists matter». It is a coming **societal challenge**, given that a good deal of the crucial decisions as to the embodied safety will be *non-democratically* taken in specialist circles within the automotive manufacturing industry itself.

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- But this is not an «us vs. them» issue. The manufacturing side should not be seen as the only potential «villain» in this respect. The future **autonomous driving beneficiaries** have to be brought up to full consciousness of their inherent and non-discardable responsibilities in the context. In the almost-immediately attainable levels two and three there is much that remains for the user to decide/act upon.

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- From **lack of** decisive information and training on how to behave in critical situations up to drivers' **temptation** of exploring practical limits, there is a vast spectrum of issues that ought to be tackled ***immediately***, since this is already an actual situation, though for now yet on a quantitatively small scale. Therein, the accumulated experience of the air transport sector is an invaluable source of practical knowledge.

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- The **civilian aeronautics** sector, through rigorous investigation of causes of aircraft crash incidents, has brought to our attention a host of unexpected **risk factors**: from instances of pilots' tunneling vision to overdependence on automatic flight safety mechanisms. Similar deleterious effects are seen in the **road sector**, e. g. when drivers move into a different driving setting without properly internalizing the change.

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- In order to swiftly render the move into autonomous driving contexts a **collective affair** it is necessary to resort to massive, well-structured and -grounded **public campaigning**. For inducing responsible and sustainable **individual behaviour**, it is essential, on a par with AI specialists, to call upon a host of other fields of knowledge as well as diversified practical experiences.

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- **Psychologists** and, above all, **common people** should be part of the equation from its very start. The former will provide reliable knowledge on how to penetrate individual psychological «shields»; the latter, a sense of open, «democratic» process by means of which some sort of «**majority opinion**» may see the light of the day.

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Thank you, for your attention.