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Video games influence on formation of driving habits

It is said widely that computer games could have a strong, negative influence on human brain development. It is a stance taken usually by parents of children diagnosed with behavioral and learning disabilities. There are also people, whose opinion is on the contrary - video games do affect our mind’s development, but they do not change it’s nature, only expand it.

There is no denying, that more and more struggle with addiction to games, gambling, etc. Internet and gaming addiction is becoming next, after alcohol and tobacco, youth problem [3]. In may 2013, video games addiction has been noted in DSM - Diagnostic and Statistical Manual of Mental Disorders.

According to Entertainment Software Association, an association involved in games industry research, a statistical gamer in 2013 was a 30 year old male, playing casual games - card games, puzzles, logicals, etc [4]. For elders, games are often associated with unnecessary violence and brutality, whilst the most widely spread, thus presenting the biggest addiction threat, might be logical games.

Computer games are becoming more widespread and at the same time more transparent form of entertainment and yet most people, who use electronic entertainment, are not aware of that. In other words - people, who play on their smartphones for entertainment do not usually call themselves “gamers”, despite perfectly meeting criteria. The lack of this consciousness may be the reason of wrong interpretation, having mistaken expectations and, in extreme cases, addiction to this media.

Amongst games containing elements of driving, the overwhelming majority are games, which do not include complex mechanics of vehicle handling and, surprisingly, traffic, at all. These are usually games focused on more arcade approach, which does not meet the criteria of simulation. In other words - those games only appear realistic - because of their elaborate graphics.

Only recently have productions, which can be described as able to train future drivers better, started to appear on the market. Game series’ Driving Simulator [6] and Safety Driving Compilation [7] are perfect examples.

![Safety Driving Compilation cover](img1)

**Img. 1** Safety Driving Compilation cover

![Farming Simulator 2013 cover](img2)

**Img. 2** Farming Simulator 2013 cover – one of GIANTS Software game
Nevertheless, those games do not have that much popularity, when compared to other, more mainstream, titles. Unfortunately, in case of this medium it is easy to notice a regularity - games, which look better, sell better. That means also, that good visual quality may become sort of redress for simplifications in vehicular behavior physics or other. There is no denying, that driving video games are presenting even more advanced technology in collisions, vehicle parts overburden calculations, etc day-by-day [2][5].

Even until recently collision mechanics calculations were done according to rigid body physics models [8]. Thanks to hardware and software technology development, it is possible to gradually implement and popularize soft body physics now [9].

**Img. 3** View from BeamNG - game implementing soft body physics for road vehicles

Simulator games, or those, which put great emphasis on maintaining realistic conditions, are not as popular as those allowing environment destruction, law-breaking, so to say - things a player cannot allow himself to do in real life.

In this situation we can accept these games as useful, because of them giving gamers a chance to act on their stress and to experience events, which would be undesirable to happen in real life. Problem arises when a gamer, not having any experience or memory of driving beforehand, is not able to distinguish what is real and what is simplified, exaggerated or simply unreal. In described situation, a gamer may pose a threat to himself and others, if he got his first driving experiences in an unrealistic video game.

According to a WHO report from 2013, road traffic injuries are the eighth leading cause of death globally (and it is estimated to become fifth to 2030) and the leading cause of death for people aged 15-29 [10].
It is possible that finding and properly researching the influence of how younger people get used to drive in computer games on driving in real life may contribute to lowering accident rates.

Research done by Ana Draghici, a doctoral student in psychology at Dartmouth College on 6500 group of teenagers might provide a clue to how games influence human psychology. The main goal of said research was finding relationship between their video game habits and traffic offence rates. The findings were presented at the Association for Psychological Sciences convention in Boston [1].

It turns out that respondents who played games based on Reckless Driving behaviour had more registered traffic offences than people who rarely ever played video games. It showed also that the game which contributed to higher young drivers’ traffic offence rates the most was Grand Theft Auto III.
Grand Theft Auto series, GTA in abbreviation, is widely perceived as brutal, but also is very popular and playable. In each of the GTA games, the protagonist is a gangster, criminal or a car thief and most of tasks and missions include violence, criminal activities or terrorism. The player is supposed to lead the character to avoid being caught by LEA or killed. Every game, GTA included, uses simplifications, which are inevitable to sustain action and also lower burden on hardware. With this in mind and need to generate huge, free, sandbox world, GTA simplifies car collisions and driving mechanics. Default physics settings in GTA can be described as soft, sloppy. To be true, the developers allow changing the simulation parameters for vehicle handling (handling.cfg configuration file [13]), but it applies only to PC gamers, playing in MS Windows environment. People having the game on said platform are able to test different variables or behaviors of physical environments and use pre-made settings developed by independent partys [14]. Console version owners are bereft the possibility to alter the game resources.

Nevertheless a typical user will not use those possibilities to “modify the laws of physics” - most often he is not even aware that GTA physics settings can be changed. To the contrary - most of users familiar to the GTA series are willing to maintain settings of developers. The developers themselves, trying to fulfill the gamers’ expectations, are upgrading their physics system in way, which is more playable, not more realistic. It leads to a paradox, where some of the gamers want things to stay as they were and some complain about them not changing to the better. Discussions and disputes between gamers, not happy about changes in handling physics in GTA 4 and 5, might be a good example.

From all the respondents, it were the GTA player who had the most number of traffic offences. Those who played GTA were about two times more likely to report tailgating and 1.7 times more likely to say they had been pulled over by the police. Also, those who played Manhunt were almost two times more likely to report crossing over double yellow lines. The researchers did not see any specific effects from playing Spiderman II [15].

Video games went a long way from excentric devices to products of modern economy, where it is not the consument who seeks the product, but rather the other way around. Presently, the electronical entertainment market is so specialized, that it should not be a problem, even for the most demanding and the most finicky of gamers, to find a suitable title, regardless of age, gender or personal audiovisual preferences.
On the other hand, the computer games went such a long way from their begginings, that they become an inspiration for life and art themselves. Car designers are using elaborate models, developed in computer games, more and more often to upgrade existing driving-amplifying systems. A good example could be the Heads Up Display system developed currently by BMW [16]. For gamers, this additional functionality appears to be something obvious, but for people not experiencing games on regular basis, it is straight from science-fiction. The main difference is that gamers will be able to use the new device naturally whereas the others may require time and effort to get used to.

Obviously, we cannot explicitly say (at least for now) whereas the games we choose to play have or do not have any effect on how we drive. It is very difficult to distinguish, because driving is a complex action, demanding utmost alertness and even a slightest thing might contribute to a loss of concentration or even a crash. It applies to texting, not to look far [17], smoking, talking with passengers, etc. There is no denying however, that even without concentration-depleting factors, the driver is partially dependent on his own habits, muscle memory, mood or fatigue levels.

Abstract

Collect data and searching for correlation between video games and committed traffic offenses

Wpływ gier elektronicznych na kształtowanie się nawyków w prowadzeniu pojazdów

Streszczenie

Podsumowanie dotychczasowych danych i badań dotyczących związku pomiędzy grami elektronicznymi a popełnionymi wykroczeniami drogowymi

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