Driver Behavior and How it is Shaped by Social Constructs of Masculinity

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Evidence has consistently shown that young male drivers are disproportionately involved in vehicular accidents, a trend that has marked distracted driving as one of the leading causes of death among young men in North America. According to the National Highway Traffic Safety Administration (2020, p. 114), men between the ages of 10-24 are in 3 times more accidents than females of the same age. The sociotechnical problem I am exploring deals with how cultural expectations of masculinity, influenced by the integration of smartphones in-car technology, contribute to the prevalence of distracted driving incidents among young male drivers. As this demographic wrestles with societal norms that valorize risk-taking and overconfidence, the addition of in-car technologies may serve as a catalyst for distraction, exacerbating the already perilous inclinations. By investigating the potential link between in-car technology use and the uptick in distracted driving-related accidents, this research seeks not only to understand but also to strategize interventions that address the core of the distracted driving dilemma. Through the application of Actor-Network Theory (ANT), this study will dissect the intricate web of relationships among human actors—such as the drivers, passengers, and members of society—and non-human actors, including societal norms of masculinity, car technology, and mobile applications like Spotify. Actor-Network Theory was first proposed by Bruno Latour (1996) and is an STS theoretical framework that examines the interactions between human and non-human actors in a network. This approach allows for an examination of the factors at play, revealing how young men's interactions with these actors may distort their perception of driving abilities and risk assessment, potentially leading to dangerous outcomes on the road. I will begin by examining the constructs of masculinity and then look at how they affect men and their approach to driving. Finally, I will explore how the internalizations of masculine constructs encourage men to use technology while driving, which creates a distracted driving environment.

Societal expectations of masculine concepts require young males to distinguish themselves from boys by displaying masculine characteristics. In a peer-reviewed journal, Donaldson (1993) argued that masculinity and male norms emphasize certain values such as courage, leadership, technological skill, mastery, and "considerable amounts of toughness in mind and body." However, it is important to consider who these terms apply to. According to Schrock and Schwalbe, there exists a difference in the social presentation of boys and men (2009, pp. 279-280). For boys to be considered a man, they must perform some act that is worthy of manhood in the eyes of society. In order to become a man then, boys must exhibit the qualities of men in a display of masculinity. This requires boys to pursue masculine acts that fit into the categories defined by Donaldson (1993), such as participating in risky behavior. By participating in risky behavior without suffering consequences, boys can display mastery over an act. Displaying mastery over a challenge is a hallmark of masculinity and carries more weight in the presence of others. This is because societal acceptance is the foundation of being seen in a different manner, boys vs men (Cahill, 1986). When children begin to act maturely, they are referred to as "boys" or "girls" rather than a "baby". While the vocabulary may seem insignificant, Cahill (1986) found that children's response to the term creates a stigma around certain acts, influencing children to act in accordance with the more mature terms. This is commonly known as positive reinforcement in the psychological field, as rewards guide behavior. The non-human actors of masculine definitions are the first part of the overall network we examine. This non-human component interacts with human actors, like boys, guiding psychological development in accordance with masculine norms.

Boys learn characteristics of manhood through social interactions with their male peers. Those who do not engage in the traditional norms of masculinity can become social outcasts as judged by their peers (Nielson et al.,2022, pp. 2-3). The social influence of masculine conformity creates an uncompromising environment for boys. If they want to be accepted by other men and considered to be "one of them" then they must embody masculinity. The influence of peer pressure is evident from Nielson

et al., whose study found that risk-taking behavior was positively correlated to pressure from peers (2022). Learned behavior causes boys to pursue predefined notions of what a man is. As boys grow up, they are surrounded by environments encouraging a dominant presence. Those who do not display manly characteristics may be viewed as weak by their peers, and the fear of being socially rejected pushes boys to engage in risky behavior.

While peers can impact how young adults view masculinity, mainstream media also impacts young adults' views by showcasing historical ideals of masculinity considered by Donaldson (1993) in superhero movies. Superheroes and supervillains are depicted to have strong correlations with masculine themes (Harriger et al., 2022). In *The Dark Knight Rises* by Christopher Nolan (2012), Bruce Wayne is stuck in a prison underground. His only option for survival is to free-climb hundreds of feet without any safety measures. The scene was filmed in such a way as to evoke a sense of determination and pride when faced with risk. Another such movie *Finding Nemo* (Unkrich et al., 2003) depicts a scene when Nemo is peer pressured into journeying into the ocean by male classmates. In the movie, Nemo's father is strongly against Nemo going into the ocean as he fears the dangers that await them. The scene shows how male peers encourage risky behavior even when adults discourage it. Movies were also found to focus on depicting male athleticism, leadership, and bravery. Films such as *Black Panther* (Coogler, 2016) and *The Incredibles* (Bird, 2004) showcase a male superhero that exhibits the traits mentioned. These films emphasized that the superheroes were not super because of their powers, but rather how they used them. Helping others in need and protecting those who couldn't protect themselves was the masculine thing to do, and therefore it was their duty to perform those tasks. These films are meant for young adults and children, which shows that the idea of masculinity is pushed onto boys from a young age. Furthermore, through these films they are glorified and support boys pursuing masculine traits early on in order to become more like the heroes they see on screens. This is one component of ANT in the context of masculine constructs influencing distracted driving. The non-human actors here are the themes conveyed by the movies, which epically display masculinity, influencing boys(human actors) to identify with the main characters and idolize their actions.

We've determined how masculine norms influence boys' actions in terms of risky behaviors through peer influence and media portrayal. The question then is, how do the ideas of masculinity impact male drivers? Studies have shown that young male drivers exhibit less risk aversion and overestimate their driving abilities, especially in the presence of male peers (Tian et al., 2022, pp. 2162-2163). Comparing Tian et al.'s (2022) conclusions with thoughts from Nielson et al. (2022), Cahill (1986), and Schrock and Schwalbe (2009), we see a progression in the research behind masculinity. Cahill (1986) differentiates boys and men through actions aligning with masculine norms, which Schrock and Schwalbe found to typically occur in the presence of peers. More recently, Nielson et al.'s (2022) research also concluded boys are more likely to pursue risks when surrounded by peers, and those who did not engage in masculine actions were socially shunned. Nielson et al.'s research (2022), combined with Tian et al.'s (2022) creates a connection between young male drivers pursuing risky behaviors, such as distracted driving, in the presence of their peers. Additionally, Balkmar found that certain cars, especially modified or muscle cars, tempt younger men to test their capabilities in handling the car (2012). Being able to control powerful cars is a way to "act manly" and display maturity and toughness as a man. Krahé et al. also found that there was a positive correlation between aggressive/risky driving among men with modified high-performance cars, drivers with a "macho personality", and younger men (2002, pp. 11-31). As men modify cars to increase power and performance, they are attempting to express their masculinity to their peers. However, it goes further as they must prove they are capable of embracing the newly improved cars otherwise they can be considered as imposters who are aiming to exaggerate their manhood. Male drivers with a macho personality are more likely to participate in risky driving behavior

to align with the masculine construct of mastery. Displaying mastery over a high-performance car is seen through handling the car's power and navigating difficult roads and conditions, such as sharp turns and slick roads. The answer to our question posed earlier is that masculine constructs push young men to pursue dangerous actions while driving in order to prove their masculinity.

Men overestimate their abilities to appear more "masculine" by displaying mastery/technical skills. When men overestimate their driving abilities they may require intervention as safety precautions (Bannach and Bianchi, 2021, pp. 94-95). Handling high-power vehicles requires more skill compared to non-modified/lower-powered cars. Overestimating their abilities to handle cars highlights the lack of risk aversion men show when driving. This is a result of pursuing technical skills in driving and displaying their prowess to other men. The need to exhibit masculine traits to peers causes men to misjudge their capabilities on the road. The need to fit in with existing societal masculine constructs creates a dangerous environment for young male drivers. Numerous studies consistently highlight that young male drivers are more prone to traffic violations and crashes compared to other social groups, with a higher likelihood of violating traffic rules (Alver et al., 2014).

Distracted driving significantly increases the chance of traffic violations and crashes among young male drivers. Distracted driving has been found to contribute to the prevalence of traffic violations and crashes among young male drivers by removing the driver's focus from the current road conditions (Stavrinos, 2017). There are various types of distractions when driving: auditory, visual, manual, and cognitive. When performing secondary tasks, such as using technology while driving, the attention split between tasks proves consequential. Holding a phone while driving has been shown to increase visual distractions by 3x among young male drivers (Foss and Goodwin, 2014, p. 53). The outcomes of these distractions often resulted in a crash. Driving while using a phone is an example of Bannach and Bianchi's (2021) point. Men overestimate their abilities to use a device and remain in complete control of a car, risking their safety to display manliness. The result of this overestimation is a combination of manual, visual, and cognitive distraction by splitting awareness of the road and phone. These distractions can disrupt their driving abilities and impair driver's attention to road conditions.

Although in-car technologies have been innovated with the intent to reduce distractions, they can still contribute to distractions while driving. To combat distractions occurring through the use of phones, Android Auto and Apple CarPlay have created functionality to connect the car and phone (Apple, 2023). These new technologies only eliminate manual distractions, but not visual and cognitive distractions (Storrar, 2022). Additionally, the use of Apple CarPlay/Android Auto still results in a secondary task, which is any other action separate from the primary task (Foss and Goodwin, 2014, p. 59). Secondary tasks result in removing visual and cognitive focus from the primary task, driving. Young male drivers have been found to exhibit risky driving behavior in the form of secondary distractions (Strayer et al., 2017, p. 93). Secondary distractions have also been determined to affect driving speed (Shaaban et al., 2020, p. 3). The secondary distractions create an environment in which the driver accelerates due to a lack of attention. While the driver can't see their speed on the speedometer, due to the secondary task, they are able to feel the speed difference in the car's acceleration. Through this acknowledgment of acceleration, the driver opts to continue traveling at high speeds while distracted. The in-car technologies, such as Apple CarPlay and Android Auto, are additional non-human actors in our overall network. Their creation stemmed from an idea to reduce distractions by the human actors, drivers. However, the innovation did not take into account other non-human actors such as masculine constructs, and how they would affect the use of in-car technology by certain drivers. The interaction between male drivers and the non-human actors in this case can cause the drivers to neglect their attention from safe driving.

Driving at high speeds is another way for men to display mastery, as it shows control over a high-powered machine through skillful, precise driving techniques, which supports Krahé et al.'s (2002) findings regarding young male drivers pursuing a macho personality. Shaaban et al.'s (2020) research backs this claim as they found that aggressive/risky driving behavior occurred more frequently with men than women. The use of technology, which constitutes risky driving in their research, led to higher and more dangerous speeds. In Haigney et al.'s study, men were found to be more prone to secondary distractions compared to women (2006). The propensity to engage in a task that intentionally removes focus from the primary tasks is a display of pursuing technical skill and mastery. By successfully doing two tasks at once, young male drivers exemplify two components of masculinity as defined by Donaldson (1993). However, the pursuit of this behavior is filled with risks and has been shown to have negative consequences. Pope et al.'s 2017 study highlights the fact that performing secondary tasks is directly associated with a higher likelihood of vehicular collisions. Pope et al.'s (2017) study has been widely recognized across multiple studies examining secondary tasks and their correlation to distracted driving. The connection between distracted driving and performing secondary tasks is prevalent; however, the question remains why do young men partake in secondary tasks while driving?

Young men exhibit overconfidence in their driving abilities and are influenced by peers when it comes to participating in risky behavior. When it comes to driving, men have reported higher levels of confidence in their abilities to handle vehicles than females (Sarkar, 2004, p.693). Additionally, Sarkar (2004) found that over 86% of men believed it was acceptable to use a phone while driving. This shows the attitude young male drivers have towards risky deriving behavior, as they believe in skills that have yet to be proven. The concept of displaying mastery is engrained in masculinity, causing a learned behavior of engaging in risky behavior. Furthermore, Nicolls found that when it comes to phone usage while driving there is a direct correlation between peer approval and engagement (2022, pp. 4-7). When their peers approved of using cell phones while driving, young adults were more likely to use them. This aligns with Nielson et al.'s (2022) findings of peer pressure encouraging risky behavior for social approval amongst young men. If their peers believe it is ok to use phones while driving, young men will succumb to using them in order to fit in with the masculine crowd. Not engaging in distracted driving would conflict with the herd mentality and cause an individual to be an outcast. As a result, the drivers are influenced by other human(peers) and non-human actors(social beliefs and phones) to engage in distracted driving. Peer presence can affect driver attention in other forms of distractions as well.

Auditory distractions, such as conversations with a passenger, can impact young male drivers' situational awareness, promoting risky driving behaviors. Pradhan et al. found that auditory distractions can adversely affect driver behavior (2014, p. 46). Pradhan et al.'s (2014) study found that when young male drivers had a male passenger, their cognitive load increased by carrying a conversation. This results in a loss in visual perception which is equivalent to using a cell phone while driving. The lack of situational awareness when a male peer is present while driving can be attributed to social acceptance, as the male passenger was an unknown peer rather than a friend. In this instance, the human actors are the driver and passenger, while the non-human actor is the concept of courage. The driver does not want to seem overly safe by ignoring the passenger and focusing only on driving, and as a result, increases their cognitive load by creating an auditory and cognitive distraction. This subsequently reduces visual perception creating a riskier driving environment, as the driver does not want to appear uncourageous in the eyes of the passenger. Young male drivers also increased their speed when traveling with a peer (Rhodes et al., 2015, p. 71). The increased driving speed was attributed to the male risk-taking behavior which creates a lack of attention to the primary task of driving. This is due to the lack of situational awareness created, as mentioned earlier, due to the presence of a male peer. The increased cognitive load removes attention from the speed of the car as the driver is splitting focus between driving and interacting

with the passenger. While the driver can feel the acceleration of the car change, they will not decrease their speed as it would conflict with showing mastery of a vehicle at high speeds in the presence of a male peer.

This research analyzes the sociotechnical implications of masculinity on young male drivers, explaining the role that cultural expectations and in-car technologies, such as smartphones and systems like Apple CarPlay, play in the incidence of distracted driving. The evidence gathered and analyzed through the Actor-Network Theory framework indicates a connection between the societal constructs of masculinity and distracted driving through the use of technology, causing an increased likelihood of traffic violations and accidents among this demographic. This correlation is intensified by the presence of male peers, who often serve as catalysts for the risky behaviors that lead to these incidents. The findings are generalized across a broad cultural spectrum of masculinity and may not encompass the nuances of individual experiences or the rapid evolution of in-car technologies. Future research should continue to investigate these dynamics, particularly as new forms of vehicle technology emerge. They should also strive for targeted interventions, such as privacy screens on displays to prohibit drivers from engaging with technology while driving, that can effectively address the sociotechnical challenges identified herein.

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