Where is risk homeostasis theory today?

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Risk homeostasis theory was introduced into the psychological literature in early 1980s by Wilde. This theory was initially developed to explain why drivers alter their behaviors dependent on the level of risk present in a situation and the level of risk they are comfortable with (Wilde, 1982). More specifically, the risk homeostasis theory posits that a person will attempt to maintain a constant level of risk when completing activities. For example, if a driver does not typically come to a complete stop at stop signs, but has recently taken up this habit, they are likely to take more risk elsewhere in the driving experience. The person may drive faster, not wear their seatbelt, or not use their turn signal, thus returning to the original state of risk with which the driver is comfortable.

The risk homeostasis theory has not always been met with popularity, however, it is getting quite a bit of attention in the current psychological literature. In 1994, for example, Jackson and Blackman used a driving simulator to test how the manipulation of accident cost, speed limit, and speeding fines affected the number of accidents the participants had on a simulated driving route. According to risk homeostasis theory some factors should motivate a person to lower their risk level whereas other, non-motivating, factors will not create this change in accepted risk level. More specifically, the authors thought that changing the speed limit and speeding fines would result in risk homeostasis because the participant would simply find another way to maintain their level of risk. Conversely, changing a factor such as accident cost would result in a change in accident rates because a monetary motivation for remaining accident free was present; there was no such motivational factor attached to fines and speeding. Unlike many past researchers, Jackson and Blackman found support for the risk homeostasis theory in that

participants were indeed less likely to get in an accident when the costs of the accident were high, but the accident rate wasn't affected when the speed limit and speeding fine were manipulated. This finding shows that, barring a motivation to reduce risk, people will work to maintain a constant risk level by compensating with other risky/non-risky actions.

Despite past research, the study conducted by Jackson and Blackman (1994) clearly shows support for the risk homeostasis theory. These authors, however, are not the only researchers to find such support in the recent years. Using a driving simulator as well, Stanton and Pinto (2000) found support for the risk homeostasis theory. In their study, participants were asked to drive in a driving simulator through a variety of conditions including fog, daytime and nighttime, as well as combination of these conditions (e.g., daytime with fog). The simulator was equipped with a visual enhancement system to aid the participants on certain trials. The authors found that participants drove faster in the daytime condition than when it was nighttime or there was fog present. However, when the visual enhancement system was engaged, participants drove faster in the low visibility conditions. This finding is aligned with risk homeostasis in that the low visibility (e.g., fog, nighttime) created a driving risk, the visual enhancement system decreased that risk and therefore the drivers began to drive faster to bring the risk level back into their "comfort zone". Even more interesting is that when the visual enhancement system "failed" during the final trial, participants slowed back down to their original speed in the condition because the visibility was lessened. By slowing down, the participants were able to ensure that their level of risk did not exceed

what they were comfortable with. Once again, the current research is showing support for the risk homeostasis theory proposed by Wilde.

Although there are many researchers who currently support the notion of risk homeostasis, this is not uniformly the case. One contradictory opinion came in the form of an address to the International Congress of Applied Psychology. Rothengatter (2002) reviewed several possible theories that could explain risk taking behavior among drivers. More specifically, Rothengatter reported, based on other research, that people do not typically adjust their driving habits to maintain a constant level of risk. Instead, and more likely, they adjust their habits to accommodate road and car design changes. Rothengatter also suggests that the alternative to risk homeostasis theory is Summala's zero risk theory. The main difference between the two theories is that the zero risk theory says behavior will be adjusted when the risk level exceeds a certain threshold, whereas Wilde's theory suggests behavior is being constantly altered to maintain a specific risk level. It is easy to see from this review of just two theories that risk homeostasis is not the only theory available to explain risky behaviors in driving.

Rothengatter (2002) isn't the only researcher to be critical of the risk homeostasis theory in the recent past. Robertson and Pless (2002) were also critical of the risk homeostasis theory in an article that features a "For and against" debate with Wilde. They maintain that for the risk homeostasis theory to be true, humans would need to be able to understand that they are trying to maintain a level of risk when they slow down or speed up when driving. Furthermore, these authors point out that in addition to this knowledge, the driver would also need to have the ability to alter their behavior on a constant basis, and humans probably do not have this ability given our cognitive

limitations. Finally, the authors point out that if risk homeostasis theory were at work, implementing such safety features as airbags and seatbelts would not reduce the number of fatalities, but in fact they do. This suggests that the risk is being lowered by the safety features, but humans are not becoming more reckless in other driving habits to make up for these risk-reducing safety features. As mentioned earlier, this article has two parts. The second part, written by Wilde, presents evidence for the risk homeostasis theory as one might expect. For example, Wilde points out that educatinal courses designed to improve driving technique do not lead to greater road safety, but instead can lead to greater confidence and to more risk taking behavior because the risk tolerance is now higher. Additionally, there is evidence that despite all of the safety innovations involved in vehicles and road design today, the per capita death rate has not decreased. More specifically, the deaths have merely been transferred to a different cause as risk is harder to attain in driving now than in the past. This article is a clear example of the division among researchers as to the utility of the risk homeostasis theory in predicting behavior.

Views rejecting the risk homeostasis are not simply conjecture; there is experimental evidence to support this position. Stetzer and Hofmann (1996) used computers to present a driving situation that contained an unforeseen incident to participants. After viewing each situation, participants rated the personal and property damage that would occur at varying speeds as well as the risk associated with the situation. Additionally, later in the experiment, the participants had to estimate how fast they would drive in these same situations. Stetzer and Hofmann found that for 92% of the participants the risk homeostasis theory did not hold true because participants didn't change the speed they would drive commensurate with maintaining a constant level of

risk. In a second study the authors again found that only a small number of participants actually conformed to the risk homeostasis theory by modifying their behaviors to maintain a constant risk level. This combination of results suggests that people, on the whole, do not try to maintain a constant level of risk.

Based on the studies reviewed in this paper it is clear that the view on risk homeostasis theory is unclear to say the least. Researchers on both sides of the fence criticize opposing literature for being flawed all the while continuing to produce potentially flawed research themselves. Although Wilde's risk homeostasis theory has been around for quite some time, the verdict is still out on whether or not this is a useful theory that we should be using when assessing behavior. For now, it is safe to say that risk homeostasis theory has many supporters and many critics.

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