

DRIVERLESS CARS – ETHICAL DILEMMAS

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This essay is from the forthcoming book, “The Encyclopedia of Jewish Values: Man to G-d Issues and Rituals.” This essay is not intended as a source of practical halachic (legal) rulings. For matters of halachah, please consult a qualified posek (rabbi).

Cars that transport individuals without the need of a driver are already a fact of life. For drivers over fifty years old, they will never be completely comfortable with the “loss of control” they have always felt while driving, even though they willingly have given up this control when riding a train or plane, where the driver is unseen. For the younger generation, this changeover is a no-brainer. It will save great costs on fuel, insurance, make the need to own a car less likely, and generally add leisure time to everyone’s lives, as driving becomes much more efficient, and traffic jams will become obsolete. Judaism has never objected to any technological advances, as long they are used within the framework of Jewish values.

From a Jewish perspective, driverless cars will indeed promote Jewish values. The more efficient use of fuel by driverless cars will greatly minimize the chemical agents in the atmosphere that drive climate change, which eventually will save untold human and non-human lives. But the much more immediate result and advantage of driverless cars will be saving the lives of over one million people each year, who currently die from car accidents. In Judaism, saving lives is the highest value. From where do we derive this?

SAVING LIVES – THE OVERRIDING JEWISH VALUE

The verse in Leviticus says a Jew should live by the Torah and not die by living a Jewish life, according to the Talmudic explanation of the verse.¹ Maimonides rules² as part of Jewish law that a Jew is required to violate the Torah rather than give up his or her life, except for two of the 613 commandments (the third, the prohibition to murder, is about our value of talking any life). These laws demonstrate how strict Judaism is about preserving life. A different Talmudic passage states that a Jew must violate Shabbat to stay alive and keep Shabbat in the future.³ And the Code of Jewish law similarly rules that life takes precedence in all but two commandments.⁴

Jewish concerns with the value of all life and even the remote possibility of saving a life is so strong, that it is no coincidence that Jews are at the forefront of ethical debates regarding the programming of driverless cars. The dilemmas to be presented and discussed in this chapter involve a one in a million possibility, or even one in ten million. Nevertheless, the heightened Jewish sensitivity to saving lives has propelled the traditional Jewish community to discuss these dilemmas in depth, as the cars are now being pre-programmed how to react in a very possible situation on the road. All driverless cars are programmed to avoid hitting any object and certainly avoid contact with any human being (or animal, or object) that suddenly and unexpectedly appears in the road. In a very few circumstances, a driverless car may not be able to avoid hitting that person, due to speed of the car and the suddenness of a human appearing in front of the car. In the event that more than one person are around the car, sometimes the car will be forced to choose which person to hit and which person to avoid. This inevitability causes situations for ethicists to direct programmers, regarding evaluating human life, which computer scientists must preset into the vehicle's onboard computer, and "experts" in morality must tell the programmers what the driverless cars should do and should not do regarding in each dilemma and each situation that may arise. This chapter will

¹ Leviticus 18:5, Yoma 85b

² Maimonides, Hilchot Yesodai Torah 5:1-2

³ Yoma 85b

⁴ Shulchan Aruch, Yoreh Deah 157:1

deal with three specific ethical questions regarding human life, for a programmer to input into driverless cars in 2023 and beyond.

One specific person of note is Rabbi Mois Navon, who has a unique and crucial perspective on these issues. He one of the founding engineers of Mobileye who invented the System-On-A-Chip and holds several patents in the hardware. At the same time that Rabbi Navon is intimately familiar with the system that is “driving” the autonomous car revolution, he is also known as the “Rabbi of Mobileye,” who has developed an expertise in researching and teaching these ethical dilemmas.

What are the three ethical dilemmas related to driverless cars? How does the non-Jewish world respond to these difficult situations and choices? How does Judaism respond?

ETHICAL DILEMMA 1 – THE TUNNEL DILEMMA

Jason Millar, a philosopher invented this dilemma less than ten years ago. But we will see that the Rabbis discussed this precise dilemma at length more than 1800 years ago. What is the dilemma?

A driverless car is travelling along a single lane mountain road and is fast approaching a narrow tunnel. Just before entering the tunnel a child attempts to run across the road but trips in the center of the lane, effectively blocking the entrance to the tunnel. The car has but two options: hit and kill the child, or swerve into the wall on either side of the tunnel, thus killing the passenger. How should the car react?

Although the chance of this happening may be very remote, a car must indeed be programmed to respond in such a situation. How can this dilemma be addressed by Jewish law if cars were not even invented yet, for example, during Talmudic times? The specific circumstances may change, but the underlying concepts and principles remain unchanged. This is the basis upon which traditional Judaism, thousands of years old, continues to have relevance to living today for any ethical person trying to live a moral life, and also the basis of how this chapter (and book in general) can address questions of behavior and thought in daily life of the 21st century. So, what do the sources tell us how to resolve the “Tunnel Dilemma?”

The Mishne⁵ raises the question of a very pregnant woman about to give birth, at a time when it was very common for either the mother or the baby, or both, not to survive the childbirth process. The mother was having extreme trouble giving birth, so much so, that the doctors determined that the only way the mother could possibly survive would be if the doctors aborted the fetus/baby. The Mishne rules that the fetus/baby, still in the uterus, must be killed to save the mother. But if the majority of the infant (or the head) emerged into the world, and still threatens the mother's life, then the doctors must not do anything, neither to the mother nor the baby, because any action may endanger one or both even more. Lest we think that this is simply a lone statement in the Talmud but not normative Jewish thinking, Rabbi Caro in the Code of Jewish Law, who lived in the 1500's, rules⁶ like this Mishne, almost word for word. Then the Mishne gives an explanation for its ruling. The reason is that a human being may not do any action that will cause the death of another human life, even in order to save another human life. Why not? Can't we reason that we should preferably save the mother, who can contribute right now to the world, while the baby will take 15-20 years before he or she can aid society. Or, possibly, we should preferably save the baby, who has many more years, statistically, to live and contribute, than the adult mother. Why is it that the Mishne states that no human can determine who life has more value, whether one is an adult, the president of a country, a convicted thief or a one-minute old infant?

⁵ Mishne Ohalot 7:6

⁶ Shulchan Aruch, Choshen Mishpat, 425:2

The answer comes from another Mishne that states⁷ that if a human being saves the life of one person, it is as if he or she saved the entire world. Thus, each individual, regardless of personality, age, past or future behavior, has the value of an entire world. How much is an entire world worth? It has infinite value. Therefore, every human being on the planet has infinite value, and, as any mathematician will tell you, one infinity is not greater than or lesser than another infinity. Therefore, Jewish law prevents any Jew from taking any action that will place a higher value on one person's life over another's life, since it is beyond man to determine who whose life has more value and in Jewish law, every person has equal, infinite value. What about our dilemma, then, the Tunnel Dilemma? Do we kill the child or the passenger?

Since each person has equal, infinite value, we cannot tell the programmer to program the car to favor one person over another. Thus, like the doctors, the car may not do anything in this situation. What will then, happen? In the Tunnel Dilemma, the child will be killed, and the passenger will survive, but we (the programmer) have not taken an action that favors one life over another life. However, if we think about it, this situation is a bit more complex. The passenger and the child are not equal participants in the Tunnel Dilemma. The car and the passenger actually had "right of way" on the road before the child appeared. Although not intended, the driver's life was already "saved," until the child tripped on the road.

There is another Talmudic passage which is analogous to this situation.⁸ Two men were in the hot desert, far from civilization, without proper provisions. One man had a canteen of water, enough for just himself to reach civilization, and survive. The other man had no water and will surely die before reaching safety. What should be done with the water? Ben Petura said they should split the water, knowing both will die, but they will be equal, and no one will have to watch the other die. Rabbi Akiva disagrees and says the man with the canteen should keep it for himself. And Jewish law rules like Rabbi Akiva. Why? Since the man with the canteen's life is already saved (since he has the canteen in his pocket), and he did not have to do any action to save himself causing his friend to die, he drinks the water and keeps his canteen. This is analogous to the life of the passenger in the car, whose life is already saved driving on the road before the child appears, and, like the man with the canteen, if nothing is done to swerve the steering wheel, the passenger will be saved.

But, perhaps, we can always simply and say, "My life always comes before yours," and that is why we save the passenger and man with the canteen in the desert? There is another scenario that proves this argument to be false from a Jewish perspective, and that this is just not the "Jewish" way. If a man puts a gun to Joe's head and says to Joe, "Either you kill Fred, or I will kill you," what should be done in this situation (assuming the gun cannot be wrestled away from the gunman)? If Judaism were to maintain that the overriding principle is "My life always comes first," then in this situation, Joe should kill Fred in order to save his own life. But Raba rules differently,⁹ and says Joe does nothing in this situation, even if Joe will certainly be killed by the gunman. Why? Raba continues and says, "Who says your blood is redder than his?" i.e., "Who says your life is more valuable than his?" Thus, the overriding principle is that a Jew cannot perform any action which chooses to save one innocent person over another (like the mother and baby one minute *after* birth), even his or her own. But if the Jew has to do no action in order to save his own life, like the canteen, then it is permissible. In the case of the Tunnel Dilemma, like the canteen, because doing nothing will result in saving the passenger, and the passenger's life was already "saved" (like the traveler with the

⁷ Mishne Sanhedrin 4:5

⁸ Bava Metzia 62a

⁹ Sanhedrin 74a

canteen) a minute before the child appeared, we do nothing, and the child will unfortunately be killed while the passenger's life is saved.

But it does not seem “fair” that an innocent child should be killed in our Tunnel Dilemma. After all, the child had no intention to put the passenger's life at risk. Why “punish” the child? Maimonides already addressed this issue.¹⁰ Even if the child has no intention or may not even know what is happening, once the child's actions put someone else's life at risk, that child is legally a “pursuer,” i.e., someone causing the passenger's life to be at risk, and that threat can and should be eliminated. The Code of Jewish Law¹¹ agrees with Rambam's ruling that even an innocent child may be a “pursuer” and, in this case, must be, unfortunately killed to save the life of the passenger.

DILEMMA II – THE TROLLEY CAR DILEMMA

In 1967, before the autonomous car was invented, Professor Philippa Foot of Oxford University created a theoretical ethical quandary called the “Trolley Dilemma.” Essentially, he asked if a person can and should perform an action to kill one person, if that that would save five people who are destined to die if nothing is done.

In the Trolley Dilemma, a driverless trolley is headed towards five people who are stuck on the track, and who will be killed unless the trolley is redirected to a sidetrack. An engineer is standing next to a switch. If he pulls the switch, the trolley will be redirected to a sidetrack, and the five presently standing in the path of the trolley will be rescued. However, standing on the sidetrack there is another person who will be killed if the switch is pulled to redirect the train. Is it morally permissible or required to preserve the lives of five individuals by redirecting the trolley and, thereby killing a single person who was had not been in danger at all?

The analogous situation in a driverless car is obvious. In a crowded neighborhood, the car's brakes suddenly give out. In front of the car are five innocent people, who will be killed if nothing is done. If the car swerves, one person will die. Should the car be programmed, in such a situation, to swerve and kill one person, while saving the lives of the five people who would have died if the car had done nothing to alter its direction? What does Jewish law say about such a dilemma?

Before delving into the sources, it should be noted that there are many variations of the “Trolley Dilemma.” In some of them, it asks if it makes a difference if the man deciding to pull the switch knows the one bystander on the track, or if that bystander is his relative or if he or she is President of the United States. Based on the discussion above, in normative Judaism, all these variations would not change the dilemma and decision process at all. Since each person has infinite value, Judaism never distinguishes between the value of different individuals when deciding about who should die and who should live.

How could there possibly be sources relating to this problem from ancient texts that were written before any vehicles were invented? As we will see, there are numerous situations, both then and today, which involve the same moral principles. The Tosefta seems to describe a case which is similar to our dilemma.¹² A terrorist threatens at gunpoint to kill an entire group of people unless the group gives him a specific individual whom he asks for (within the group), and then, he will spare the lives of the entire group, and only kill that person. May the group hand over the person, in order to save all the other people in the group? The Tosefta says no! Even though, if he is not handed over to the terrorist, that specific person will die in either case anyway,

¹⁰ Maimonides, Hilchot Rotze-ach 1:6

¹¹ Shulchan Aruch, Choshen Mishpat 425:1

¹² Tosefta, Terumot 7:23

it is still forbidden to give over the person to be killed, even though by giving over the one person, you would be saving the lives of many people!

We have read the Tosefta and understand the words. But where is the logic? They can save the lives of many people by giving over one who is doomed to die in either scenario. And, even if they follow the Tosefta and refuse to give over that one individual, he or she will be killed with the group anyway. So, what was accomplished by refusing? Why is it forbidden? This case seems even more perplexing than the Trolley Dilemma, since in the case of the Terrorists in the Tosefta, the one person would die anyway. And, yet, the Tosefta says it is forbidden. Why? If they kill that one person, many more people can be saved from dying. And yet, the Tosefta says they cannot give them the one person (to be killed) even though that person and everyone else will now be killed as a result. What is the logic? Shouldn't Jewish law require a Jew to save as many lives as possible?

If we return to two of the principles learned above, we might find an answer. It was pointed out and explained there that no Jew may take any action to save himself from dying if it comes at the expense of another's life. Thus, no action can be taken which will bring about someone's death (i.e., giving that person over to the murderers), even if it means saving many lives. In addition, since each person's life has infinite value, then mathematically, 100 infinities is still the same infinite number and equal to one infinity, and thus Jews cannot kill one person/infinity to save many people/infinities, according to the Tosefta. It would be no different mathematically and conceptually from killing one (infinite value) person to save another (infinite value) person.

The Tosefta does say that if the specifically requested person in the group was a known murderer, who was already sentenced to death, then that is a different story according to Jewish law. Then the group of Jews did not decide to actually give over this person to die. He was already selected to die through his own actions, and his life IS already over in a legal sense. Then they are sending a dead man to die, and this is permitted, if it will save other lives.

Maimonides writes¹³ that Jewish law follows this Tosefta. It is clear from Maimonides that we may never kill one innocent person intentionally in order to save the lives of the rest of the group, even if that man will be killed in either eventuality. Thus, according to Maimonides, the trolley lever may never be altered, in order to save five lives at the expense of one life. The overriding principle of Maimonides is "never surrender a Jewish soul." We may take no action to bring about the death of any Jew, even if it will save many lives. But then in the *Code of Jewish Law*, we find an opinion that directly contradicts Maimonides.

Rema (who represents the Ashkenazic community in the *Code of Jewish Law*), brings the case of the Tosefta where the terrorists ask for a specific innocent person to be handed over, or they will kill everyone, including that individual. Rema then says,¹⁴ against the view of Rambam, that the one innocent man should be handed over, if specified, in order to save everyone else. The Rema then states that there is another opinion who says no. A Jew never hands over another Jew to be killed (Like Rambam). From where did Rema draw his first ruling, i.e., to save many and give over the one to be killed? Taz, a commentary on Shulchan Aruch, explains¹⁵ that there is an almost identical passage to the Tosefta in the Jerusalem Talmud that reaches different conclusions. But Taz says that he favors the opinion of Maimonides, as does his father-in-

¹³ Maimonides, Hilchot Yesodai HaTorah 5:5

¹⁴ Rema, Shulchan Aruch, Yoreh Deah 157:1

¹⁵ Turei Zahav commentary on Shulchan Aruch, Yoreh Deah 157:7

law, Rabbi Yoel Sirkis (Bach). Similarly, the Vilna Gaon (Rabbi Eliyahu Kramer) states¹⁶ that Maimonides followed the opinion of Resh Lakish (in the Jerusalem Talmud), which he then writes it needs further investigation, implying that Rambam's ruling is not logical. What is the new passage in the Jerusalem Talmud, and how does it differ from the Tosefta?

The Jerusalem Talmud brings the Tosefta almost word for word.¹⁷ But instead of ending with the blanket statement that it is forbidden to give over any Jew, even to save a life, the Jerusalem Talmud then continues, and says that this is the opinion of Resh Lakish. However, Rabbi Yochanan disagrees, and rules that as long as the terrorists specify the person to be handed over, then the group can hand over this one person, even though he or she is innocent, in order to save the rest of the group. Apparently, Rabbi Yochanan believes that since the terrorists specified who should be given over, it is the terrorists who choose the person, and the Jews handing him or her over are not choosing on their own accord whom to kill, which makes giving that person over to be killed legitimate. Based on the view of Rabbi Yochanan, then, the man should be able to pull the lever of the trolley, in order to save many while sacrificing one life.

Rabbi Menachem Meiri was a great sage of the Middle Ages (1249-1316). But, unfortunately, his works were unknown by anyone and lost, until they were discovered only in the early 20th century, as one copy had been preserved in a small library. Thus, all the commentaries could not know what Meiri wrote. But Meiri had much to add on the Trolley Problem. Even though he knew that Maimonides ruled according to the Tosefta, Meiri¹⁸ makes a cogent argument against Rambam, and rules according to Rabbi Yochanan (against the opinion of Maimonides, like the first opinion in Code of Jewish Law, who also never heard of Meiri). Meiri says you do sacrifice one life to save many lives, bringing proof for his ruling. He shows¹⁹ that in every argument (save for three exceptional cases), we always rule according to Rabbi Yochanan against his brother-in-law Resh Lakish (and this is not one of the exceptions)! And since Rabbi Yochanan was the author of the Jerusalem Talmud,²⁰ we must rule like him. (This presents a question to Maimonides as to why he ruled against Rabbi Yochanan, which is discussed at length and answered by the commentaries of Maimonides.)

HOW DO THE RABBIS OF THE MODERN ERA RULE ON THE TROLLEY DILEMMA?

A major twentieth century expert in Jewish law, respected by authorities all across the board, wrote about this problem, and his words have become the dominant opinion about our issue. He comments on a dilemma that seem remarkably similar to the Trolley Dilemma, and to the case in the Tosefta. Rabbi Karelitz (who lived in Israel and passed away in 1953) wrote²¹ about an arrow that is headed toward many people, and questions if it is permitted to alter its path so that that it kills only one person (even if that person is not specified). By diverting the grenade (or arrow), only a few people will be killed rather than many. One rabbi who wrote an entire book about this issue, Rabbi Professor Nachum Rackover, was alive at the time of Rabbi Karelitz (and is still alive today). He confirmed that the actual incident presented to Rabbi Karelitz was referring was our Trolley Dilemma! It was a situation where a bus driver's brakes failed, and he quickly realized that if he did nothing, he would crash into and kill fifteen people. But if he diverted the bus with his steering wheel, only two people would be killed.²² This seems to duplicate the Trolley Dilemma perfectly, as well as the question of should a programmer program the driverless car to change direction, in order to kill

¹⁶ Gra on Shulchan Aruch, Yoreh Deah 157:16

¹⁷ Jerusalem Talmud, Terumot 47a

¹⁸ Beit Habechira commentary on Sanhedrin 72b

¹⁹ Yevamot 36a

²⁰ Maimonides, Introduction to Peirush Hamishnayot

²¹ Chazon Ish on Sanhedrin, #25

²² "*Hakravat Yachid Lemaan Rabim*," Rabbi Professor Nachum Rackover, page 65

fewer people. Rabbi Karelitz seems to answer that the bus driver may indeed move the steering wheel and explains that this is different from the case in the Tosefta, because moving the steering wheel is not an act of killing (since the deaths would have happened if no action was taken), while giving over the person is an act of killing. And yet, almost all more modern rabbis use this ruling to show that we rule like Rabbi Yochanan and Meiri.

This author had many conversations about the meaning of the words of the Chazon Ish, which are not entirely clear. Both in his book²³ and in a private conversation (May 11, 2022), Rabbi Prof. Rackover was emphatic that a driver or programmer MUST turn the steering wheel to kill one and save many. This is not equivalent to the Talmudic situation where the goal of the terrorists was to kill people. Rabbi Rackover specifically says that Chazon Ish would permit turning the steering wheel if it meant saving lives. In another private conversation with the author (January 24, 2022), Rabbi Asher Weiss stated that the steering wheel should be diverted (or change trolley tracks) if it will save more lives. It is not similar to the Talmudic scenario where (in Rabbi Weiss' words) the terrorists were "cruel-אכזרי" intending to kill Jews randomly, and Chazon Ish (and Rabbi Weiss himself) would permit turning the wheel in such a case.

Another giant in Jewish law of the 20th century, Rabbi Moshe Feinstein, rules²⁴ (after a long explanation of the argument) that we do follow the view of Rabbi Yochanan. But it is not clear how Rabbi Feinstein would rule in practice. He ends off by saying that we have to be as merciful as possible, implying that Rabbi Feinstein would try to save as many lives as possible by programming a driverless vehicle. An equally respected commentator, Rabbi Eliezer Waldenberg, however, disagrees.²⁵ He says that because both sides of the argument are very strong and we are in doubt about what the correct opinion is, in practice, we do nothing, and thus, in effect, sides with the view of Maimonides, forbidding any action diverting or the trolley or the driverless car. But this seems to be a minority opinion.

THE TROLLEY DILEMMA HAS MANY MORE IMPLICATIONS THAN ONLY VEHICLES

Once we have analyzed the Trolley Car Dilemma, the reader should realize that the same ethical concepts apply to many other specific situations in the twenty and twenty-first century. Several rabbis bring actual cases that are similar to those discussed above. Among them are:

- a. A man is standing, and behind him is another man. Someone shoots an arrow at the first man with the intent to kill him. If he bends down in order to avoid being hit, he knows the other man will be killed. Can he bend down to avoid being killed, knowing the man behind him will die as a result?
- b. There is a famous (gut-wrenching) situation where a group of people hiding from the Nazis during the Holocaust. They must be silent as the Nazis search the home (where they are hiding) for Jews. An infant in the group starts to cry. If the baby is not silenced, the Nazis will hear the cry and consequently find and kill everyone in the group, including the infant. May the mother (or anyone else in the group) silence the baby if this means killing the infant?
- c. A patient in a hospital is connected to a very expensive machine that is keeping him alive. If he is disconnected, he will surely die, but then this machine can save the lives of many other patients who need it. Is it permitted to disconnect the machine and let one person die in order to save the lives of many others?

²³ "*Hakravat Yachid Lemaan Rabim*," Rabbi Professor Nachum Rackover, page 62

²⁴ Responsa Igrot Moshe, Yoreh Deah 2:60

²⁵ Responsa Tzitz Eliezer 15:70

- d. On September 11, 2001, an airplane was hurtling towards a tall building to bring it down. Had they known then what we know now, and a man is equipped with a RPG rocket to down the plane, is it permitted or even obligatory to shoot down the plane and kill its many passengers (who would die anyway,) in order to save thousands in the World Trade Center from being killed?
- e. Twenty people are on a boat that will sink from too much weight. If the captain selects five of them to be thrown overboard, the other fifteen can be saved. May he throw off the five passengers in order to save the others? And if so, who should determine who gets thrown off?
- f. A grenade is thrown into a room with soldiers before it explodes. One soldier quickly reads the situation and understands that if he tosses the grenade to one side the room, only five will be killed instead of fifteen killed if he does nothing. Should he toss the grenade or not?

Rabbi Shimon Efrati (1908-1988) suffered through the Holocaust and wrote about situations of Jewish law that occurred during that terrible period. Regarding the case of the crying infant that would alert the Nazis to the hiding Jews and endanger their lives, he writes²⁶ that he was there when some of his relatives were actually faced with that situation. They did not quiet the baby and were caught and killed by the Nazis. But as a matter of Jewish law, even if someone had smothered the child to save the lives of everyone else involved, they would not have been wrong. Thus, he says that option in this situation can be followed. Rabbi Lorintz compiled the responsa of Rabbi Chaim Kanievsky (1938-2022) and wrote about the 9/11 dilemma of shooting down the plane streaking for the Tower, which would then kill everyone in both the Tower and the plane. Would it be permitted to shoot down the plane (if possible) before it hit the Towers, since in the end all the passengers in the airplane would be killed anyway (like the Talmudic case with terrorists)?²⁷ He says it would be permitted to shoot down the plane, based on Rabbi Karelitz's responsa (about changing the direction of the arrow), and many more lives would be saved. He also writes about the case when a building had collapsed, and, in order to save many trapped underneath, some survivors have to be killed in the excavation process to find the survivors (if nothing is done, then everyone would be killed).²⁸ Once again, after a long discussion, his principle is the same, and he would allow killing some in order to save many more people who were involved in the accident. Rabbi Yitzchak Silberstein comments on this last case, with slightly different circumstances,²⁹ and comes to the same conclusion: try to save the maximum number of people.

DILEMMA III – THE BLOWUP BUTTON

This dilemma was devised for driverless cars by the author, in order to demonstrate a different aspect of Jewish behavior regarding human life. However, this scenario represents many real-life situations encountered by people in the twentieth and twenty-first centuries. What is the dilemma?

A driverless car is speeding along in an (apparently) empty tunnel. Suddenly, from a crevice in the side of the tunnel, three people appear. There is not enough time for the car to stop or avoid hitting these people, and both the people in the road and the passenger are going to be killed. However, there is a "blowup button" in the car, which the passenger can push, that will instantly blow up the car, and cause it to avoid hitting the people in the road. But it will kill the passenger. Since the passenger will be killed no matter what

²⁶ Responsa MiGei HaHariga 1

²⁷ Mishnat Pikuach Nefesh 50

²⁸ Mishnat Pikuach Nefesh 7-8

²⁹ Assia, 45-48, Tevet 5749. Pages 62-68

happens, should he or she push that button and blow up the car, killing himself or herself, but saving the three people? Is there a precedent for this scenario in the sources?

There are three cases in Tanach (Prophets) and Talmud which seem to answer this question in the affirmative, i.e., that the passenger should push the "blowup button" to be instantly killed, in order to save the lives of the three innocent people. The first case is the story of Purim and Queen Esther. When Mordechai asked Esther to go to the king to save the Jewish people, Esther knew that it was not her turn to see the king, and she would almost certainly be killed. Thus, she asked Mordechai if she was permitted to sacrifice herself in order to try to save the lives of all the Jewish people, and Mordechai ordered her to go to the king.³⁰ If Esther had not gone to the king, she, along with all the other Jews, would have been killed (her status of queen would not have saved her). This is similar to our dilemma. In either scenario, Esther believed she would have eventually been killed (she was not sure the king would let her live). The fact that Esther did go to the king seems to indicate she was permitted to risk her life in this situation. Rabbi Kook³¹ writes that she was obligated to do so, to be ready to sacrifice herself in order to save many. However, the case of Esther and our dilemma may not be similar. Even though Rabbi Kook establishes the principle of urging Jews to volunteer to be killed in order to save many lives, in the case of Esther, it was not certain death like in our dilemma. Thus, Esther's risk was not definite death, only possible death. In addition, Esther was trying to save the entire Jewish people. Maybe that is an unusual situation, far different from an "ordinary" case of volunteering to sacrifice oneself to save the many.

The case of Jonah, however, seems to be identical to our dilemma. When the storm was threatening to certainly kill everyone on board,³² Jonah knew that the storm had come about because of his previous actions. He volunteered to sacrifice himself by jumping overboard (not knowing he would be rescued by G-d and swallowed by a large fish), in order to save the remaining people on board. According to the commentaries, this seemed to be permissible and the right thing to do. If Jonah had not jumped overboard, everyone, including Jonah, would have died. This appears to be identical to the case as our dilemma, where everyone is headed for certain death, unless the passenger takes quick action and hits the button. Thus, it seems that volunteering for death is certainly praiseworthy.

There is one more case in the Talmud which seems to support the notion that it is permissible to volunteer to be killed, in order to save many lives. Although the Christians popularized the specific concept of a blood libel much later in history, an almost identical concept is already found in the Talmud.³³ The Gemara (with the explanation of Rashi) describes a case in Lod, where the daughter of the king was found murdered. Some people immediately (and falsely) accused the Jews of the crime, and the king believed them. He ordered all the Jews in the area to be killed. In order to save the rest of the Jews, two brothers named Pappus and Lulianus, who were innocent, came forward and said they had committed the crime. The king accepted their story, and then killed only them. Rashi says of these two (who certainly did not commit the crime but offered to die in order to save every other Jew in the area) that there is no one else in the Garden of Eden who could compare to their high level. Thus, it is clear that when the passenger will be killed either way, it is praiseworthy for him or her to blow up the car and save people's lives.

SIMILAR ACTUAL-LIFE CASES TO DILEMMA III

³⁰ Esther 4:8-13

³¹ Responsa Mishpat Kohen 143 "Mai Esther"

³² Jonah 1:10-12

³³ Taanit 18b and Rashi commentary there

On September 11, 2001, after terrorists took control of the plane, the passengers of flight United Airlines 93 understood (through cell phone contacts) what had already happened – i.e., they knew that other planes had already hit the Twin Towers and that their plane would be used to hit a large building in order to inflict maximum damage and loss of life. They decided to sacrifice themselves (since they would be killed anyway) in order to prevent the plane from reaching the intended target, the White House, which would then kill hundreds of additional innocent people. They went down in Pennsylvania, thus saving many lives who would have died had the plane hit the White House.

Other actual events confronted real people with these decisions, which were faced by some Israelis a few years ago. On December 27, 2002, terrorists entered the settlement of Otniel on a Friday night. The Yeshiva was in the middle of Friday night Shabbat dinner and, as is customary, the students were serving and clearing the food that was prepared in advance. The terrorist, intending to kill as many Yeshiva boys as possible, entered the dining room building through the kitchen, where only one Yeshiva student, Noam Apter, happened to be preparing the food to be served. As the terrorist entered the kitchen, Noam quickly realized and understood the situation. He noticed that the key to the dining room from the kitchen was in the door. Noam knew that if he could lock that dining room door, he would probably save the hundreds of students inside, as they would hear the commotion before the terrorist would be able to enter into the dining room. But at the same time, Noam also understood that the terrorist would certainly kill him. Should Noam run and try to get away from the terrorist and possibly save his own life, or should he try to get to that key and lock the door, thereby saving the lives of many more Israelis in the dining room? Noam ran to the door, locked it, and threw the key outside the window. The terrorist instantly killed Noam, but the shots alerted the Yeshiva boys inside, most of whom were also soldiers carrying guns. The terrorist was killed before he could fire any more shots and kill anyone else other than Noam Apter.

Four year later, in the summer of 2006, the Israeli army was fighting the Hezbollah forces in Lebanon. In one of the battles, the Hezbollah fighters threw a hand grenade into a shack full of Israeli soldiers, almost identical to the dilemma presented above. One soldier, Roei Klein, saw the grenade, analyzed the situation, and immediately fell on the grenade, instantly killing himself, but no other soldier died as a result of his actions.

SUMMARY

- A. It is clear that the highest Jewish value is saving human life. Since driverless cars will save millions of lives, the technology should be encouraged. Specifically, the value of life should be paramount in all situations that arise in driverless cars.
- B. **DILEMMA I – The Tunnel Dilemma** – Since no action is needed to save the passenger, and since the passenger was already “saved” before the child appeared (the canteen) and became a “pursuer,” the car should do nothing, and the child will, unfortunately, be killed.
- C. **DILEMMA II - The Trolley Dilemma** – There are two distinct opinions within normative Judaism cited by the Code of Jewish Law. One is Maimonides-Tosefta, who says a Jew can never take any action that will bring about the death of an innocent human. Thus, a programmer cannot change the direction of the steering wheel. The other opinion is that of Meiri-Jerusalem Talmud, who says that if the terrorists specify the person, then handing him or her over to save many is not an act of killing. Modern authorities seem to permit saving the maximum number of lives, since the Talmudic scenario involved trying to kill many people, and not trying to save lives.
- D. **DILEMMA III** – If a person will die anyway and can save lives by volunteering to die a few seconds earlier, that is praiseworthy, a great act in the eyes of man and heaven. Thus, the passenger, who will die anyway, should put the “blowup button” if possible.

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