Responsibility in Road Traffic

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Abstract

Vision Zero requires a new approach to the responsibility for safety. This chapter provides conceptual tools for the description and analysis of this and other responsibility issues. Distinctions between different types of responsibility are introduced, with a particular emphasis on the distinction between blame responsibility and task responsibility. The complex relationship between responsibility and causality is also delineated. This is followed by an analysis of the changes in responsibility assignments that are necessary to implement Visio Zero.

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Introduction

She ran red lights at high speed and crashed into the helpless cyclist. There can be no doubt that she is responsible for the accident.

Failing brakes are responsible for numerous accidents on icy roads.

It is true that the crash was caused by the pedestrian's erratic behavior, which forced several drivers to dangerous maneuvers. But he has a severe mental disorder and is not really responsible for what he did.

In the last few years, two children have been killed in traffic accidents on their way to this school. The traffic conditions are clearly unacceptable. Something must be done. Who is responsible?

Traffic safety is one of the many social areas in which assignments of responsibility are important and often contested. They have become an even more important topic through Vision Zero, which distributes responsibilities in new ways. But as illustrated in the four examples above, we use the terms "responsible" and "responsibility" in several meanings. This chapter will begin by systematizing the major meanings of the terms. After that we will investigate the complex relationships between responsibility and causality and finally show the bearing that all this has on traffic safety and Vision Zero.

What Is Responsibility?

The most influential classification and clarification of the different meanings of "responsibility" is due to the British legal philosopher H. L. A. Hart (1907–1992). His work is therefore the best point of departure for an analysis of the concept. He identified four major meanings of "responsibility," as the word is used in moral and legal contexts:

- By *liability-responsibility*, he meant, in a legal context, liability for punishment or for paying compensation (Hart 2008, pp. 222, 225). In most cases, liability-responsibility pertains to a person's own actions and their consequences, but there are also cases in which a person is "responsible vicariously or otherwise for harmful outcomes which he had not caused" (ibid., p. 224). In a moral context, liability-responsibility usually means that the person deserves blame, rather than punishment, but in some cases the person is "morally bound to make amends or pay compensation" (ibid., p. 225).

- By *role-responsibility*, Hart meant the "specific duties" a person obtains through occupying "a distinctive place or office in a social organization" (ibid., p. 212). His usage of "role" covers not only professional and official functions but also private roles such as those of a spouse, parent, or host.
- With *causal responsibility*, he referred to cases in which the phrase "is responsible for" can be replaced by "caused" or "produced," without a change in meaning. According to Hart, causal responsibility can be attributed not only to human beings "but also to their actions or omissions, and things, conditions, and events." One of his examples is: "The icy condition of the road was responsible for the accident" (ibid., p. 214).
- By *capacity-responsibility*, he meant capacity to understand, reason, and control one's own actions. This is what we refer to with the phrase "he is responsible for his actions." In order to have capacity-responsibility, the person must have "certain normal capacities," namely, "those of understanding, reasoning, and control of conduct: the ability to understand what conduct legal rules or morality require, to deliberate and reach decisions concerning these requirements, and to conform to decisions when made" (ibid., p. 227).

There are close connections between moral and legal concepts of responsibility, and one may see legal responsibility as a codification of such moral responsibilities that we have agreed to impose upon each other with the force of law. Here, we will focus on moral responsibilities. Let us consider, in turn, each of Hart's four types of responsibility.

As already indicated, Hart was aware that *liability-responsibility* may not be an ideal term in moral discussions. Whereas this form of responsibility is usually strongly connected with liability in legal contexts, in a moral context it is more closely connected with blameworthiness. Therefore, moral philosophers writing about responsibility usually prefer the term "blame responsibility" (Goodin 1987, p. 167). This terminology will be used here as well. However, it should be noted that in addition to deserving blame, a blame-responsible person may also be morally required to compensate negatively affected persons as well as to perform other acts of expiation (Hansson and Peterson 2001).

When we talk about a person as being responsible for something that she has done, we usually focus on the negative consequences of her actions. However, one can also be responsible for laudable acts. The Oxford English Dictionary has a value-neutral definition of the term as "[t]he state or fact of being the cause or originator of something; the credit or blame for something." The European Transport Training Association hands out a yearly Safety Award, which "recognizes those responsible for excellent products or services aimed at improving road safety in the European road transport and logistics industry" (Anon 2013). This usage of the word "responsible" can be termed "praise responsibility." Perhaps it should have a larger social role than what it has – for instance in traffic safety – but for our current purposes it can be left out of the discussion.

Hart's "role responsibility" refers to what one has to do or achieve. Several authors have noted that his terminology tends to obscure the generality of this notion

(Cane 2002, p. 32). The word "role" suits well for legally binding responsibilities, such as those that follow with an employment contract, a marriage, parenthood, or board membership in voluntary organizations. However, it does not suit well for more informal undertakings that are usually considered to confer some responsibility, such as agreements to babysit, water someone's flowers, walk their dog, or feed their aquarium fishes. Some authors have kept Hart's term "role responsibility" but interpret it very widely (Dworkin 1981, p. 29). Others use the term "task responsibility," which has a wider general meaning and obviously covers "duties, jobs or (generically) tasks," including those that originate in informal undertakings and agreements rather than legally binding stipulations or contracts (Goodin 1987, p. 168; Cane 2002, p. 32). Here, "task responsibility" will be used as a general term for responsibility to do or achieve something.

According to Hart, most adults are considered to have *capacity-responsibility*, but it is "lacking where there is mental disorder or immaturity" (Hart 2008, p. 218). We can speak of a person as being responsible for her actions, in this sense, even if we do not know of any particular action that she is responsible for. Therefore, capacity-responsibility should be seen as an ability to be responsible, rather than as a form of responsibility per se. The legal notion of capacity-responsibility is related to the notion in medical ethics of "capacity for autonomous choice" (often also called "decision-making capacity" or "competence"), which marks the limit between those who can respectively cannot give informed consent to a medical intervention (Parker 2001; Stirrat and Gill 2005; Michaud et al. 2015). The term *capacity* (or *capacity to be responsible*) can be used for this notion. Here, we will have relatively little use for it, since issues of capacity (or ability to take responsibility) seldom arise in discussions of traffic safety. Drivers are required to have a driver's license, which is normally only issued to adults with the requisite abilities. The protection of pedestrians lacking in the relevant mental capacities, such as children and people with mental disabilities, is an important issue in traffic safety, but it is usually discussed in terms of the risks they are exposed to rather than their capacity to take responsibility.

The way Hart uses the term *causal responsibility*, it is not entirely clear why he did not instead use the term "causality" for this notion. An icy road can certainly be the cause of an accident, and someone who should have sanded it can then be responsible for the accident, but what is gained by saying that the road itself is responsible? It would seem more clear to reserve the term "responsibility" for agents who can reason and argue and use the term "causality" for inanimate objects.

However, this becomes somewhat more complex in cases when causality is ascribed to humans or to their actions. Consider the following two examples:

Case 1:

> Adam was terribly drunk and fell asleep on the kitchen floor. Two of his friends moved him to the floor of an adjacent room, just to keep him out of the way. Susan entered the room without noticing him, stumbled over his legs, fell on a chest of drawers, and broke her nose.

Case 2:

> Adam was lying on the floor when Susan entered the room. He stretched out his leg to tease her. She did not notice, stumbled over his leg, fell on a chest of drawers, and broke her nose.

In the first case, Adam caused Susan's broken nose in the same way as it could have been caused by a sack of potatoes, or some other inanimate object. In the second case, his causal role was different, since he made a decision – namely, to stretch out his leg – that had a crucial causal role. This is a role that only an agent can have, and "his, her or its agency serves to explain" the pertinent outcomes, which "can therefore plausibly be treated as part of the agency's impact on the world" (Honoré and Gardner 2010). It is not unreasonable to use the term "causal responsibility" in this case (contrary to the case with the icy road, mentioned above). However, the term "agent causality" will be used here instead. The reason for this terminological choice is that agent causality does not necessarily imply responsibility in any moral or legal sense. If Alyona causes Diego's death while doing her very best to save him from a life-threatening danger, then she is an agent-cause of his death, but not necessarily morally or legally responsible for it.

As summarized in Table 1, we have renamed and adjusted Hart's (mainly legal) terminology to make it more suitable for moral investigations. Notably, only two forms of responsibility remain, namely, blame and task responsibility. We have assigned other names to Hart's other two responsibility concepts, names that do not designate them as forms of responsibility.

This reduction to two forms of responsibility is by no means original; to the contrary it is a common approach in the literature on responsibility. (A notable exception is Gerald Dworkin, who listed three major types of responsibility in an influential article: role responsibility, causal responsibility, and liability responsibility (Dworkin 1981).) However, it is common to use other terms for blame and task responsibility, namely, terms that indicate temporal relationships. Blame responsibility is often called "backwards-looking responsibility," "retrospective responsibility," or "historic responsibility," whereas task responsibility is referred to as "forwards-looking responsibility" or "prospective responsibility" (van de Poel 2011; Duff 1998; Cane 2002, p. 31). Unfortunately, this temporal terminology is somewhat misleading. We can refer in retrospect ("historically") to the task responsibility of medieval physicians to treat patients during an epidemic in spite the grave risks to themselves (Huber and Wynia 2004). Then we have a backwards-looking perspective on a (previous) task responsibility. We can also consider

Table 1 A comparison of terminologies for responsibility-related concepts

Hart's terminology	*Our terminology*
Liability-responsibility	Blame responsibility
Role responsibility	Task responsibility
Capacity-responsibility	Capacity (to be responsible)
Causal responsibility	Agent causality

prospectively whether our actions and omissions will in the future give rise to blame responsibility (Hansson 2007). Then we have a forwards-looking perspective on (future) blame responsibilities. Strangely, the latter but not the former case is called "historical responsibility" in Cane's (2002, p. 31) terminology. The "blame" and "task" terminology does not run into these difficulties, and it will therefore be used here.

Blame and task responsibility are often closely connected to each other. One type of connection between them ensues when a failure to fulfill a task responsibility gives rise to a blame responsibility. If I have promised to water your garden while you are away, then I have a task responsibility to do so. If I fail to do it, then I am blame responsible for this failure. Another type of connection arises when a wrongful action gives rise both to blame responsibility and to a task responsibility to improve one's future behavior. If I disturbed my neighbor's sleep by playing music too loud in the night, then I am not only blame responsible for the disturbance but also task responsible for not repeating it in the future.

However, in more complex social situations, blame and task responsibility do not always follow each other that closely. For instance, suppose that a speeding motorist runs over a child crossing a road on its way to school. In the subsequent trial, the driver will be held (blame) responsible for the act. And of course the driver is (task) responsible for not driving dangerously again. But that is not enough. We also need to prevent the same type of accident from happening again, with other drivers. This is not something that the culpable driver can do. Instead, measures are needed in the traffic system. We may have reasons to introduce traffic lights, speed bumps, or perhaps a pedestrian underpass. The task responsibility for these measures falls to decision-makers such as public authorities. In cases like this, blame and task responsibility part company.

It has sometimes been assumed that the assignment of blame responsibility is some sort of zero-sum game, so that more responsibility for one party must always be linked to less responsibility for someone else. This has often taken the form of a principle of "proportionality," according to which "[a]n agent's moral responsibility for an outcome is proportionate to her actual causal contribution to the outcome" (Bernstein 2017). There are of course cases in which actions that make one agent more blame responsible also reduce the blame responsibility of some other agent(s). However, this does not hold in general. This can perhaps be most clearly seen from cases of overdetermination. If two persons simultaneously shoot a non-threatening victim, and each of them delivers a deadly shot, then this certainly does not mean that each of them is only half as blame responsible as if the other had not pulled the trigger (Bernstein 2017; Moore 1999, p. 10). Similarly, if two motorists drive into a four-way crossing at the same high speed, causing a crash that would also have occurred if only one of them had driven too fast, then neither of them is relieved of his blame responsibility by the other's wrongdoing. Thus, blame responsibility is not a zero-sum game.

A parallel argument applies to task responsibility. There are cases when task responsibilities can be transferred from one person to another. This typically

happens when people share a task. For instance, if Erol and Haluk take turns helping their old mother on alternate weeks, then as long as this arrangement lasts, each of them has arguably only half the task responsibility that he would have had if his brother did not help. However, there are other cases in which one person's responsibility does not decrease the responsibility of others. If government takes more responsibility for reducing traffic accidents, for instance by making roads safer, then this does not reduce the responsibility of individual drivers to drive safely. (Instead, it makes it easier for them to fulfill that responsibility.) Although both blame and task responsibility can sometimes be shared, neither of them is in general "like a pie that is to be divided between people that each will have a smaller or larger share" (Verweij and Dawson 2019, p. 100). Our responsibilities are influenced by what other people do and undertake, but often in much more complex ways than that.

Causality

Both task responsibility and blame responsibility are closely connected with causality. Task responsibilities are normally assigned to persons who are presumed to be able to fulfill the task in question successfully. People are held blame responsible for their actions and for outcomes that they have caused or at least causally contributed to (Shaver 1985; Cane 2002; Moore 2009; Mumford 2013; Bernstein 2017, p. 165). However, there are exceptions to this. The law has "pockets of strict liability," by which is meant liability that can be assigned even without any causal contribution (Moore 2009, p. 21n). In many legal systems, owners of a dangerous animal are held blame responsible for injuries inflicted by the animal, and companies are held responsible for defective products, regardless of fault or causality. In a somewhat analogous manner, government ministers and leaders of public companies and other large organizations are often held (morally) blame responsible for wrongdoings by employees.

In moral and legal philosophy, it is often assumed that causality is a well-defined and value-independent phenomenon that can serve as a suitable fact base for value-laden concepts such as responsibility. However, this is a gross oversimplification that does not take into account the complexities of our concept of causality.

The usual approach to causality, applied in moral philosophy as well as in everyday life, takes causality to be constituted of (binary) cause-effect relationships. Such relationships are useful for describing many of the events that we observe around us. For instance, Carina throws a ball at the window, and the window breaks. This is a relationship between two events, a cause and an effect. Her act of throwing the ball is the cause, and the breaking of the window is the effect. In a simple, causally determined world, everything that happened would be the outcome of such cause-effect relationships. But that is not the type of world we are living in. The actual workings of the physical universe deviate from that description in at least two important ways.

The Multiplicity of Causal Factors

The first of these deviations is that instead of a single cause, there are usually several causal factors contributing to an effect. For instance, suppose that Nadja won a game of chess against Boris. We can treat her victory as an effect. What was the cause of this effect? In fact, all of the following can – all at the same time – be reasonable answers to that question:

> It was because of her brilliant queen sacrifice in move 22.
>
> It was because she has carefully studied Rudolf Spielmann's book, *The Art of Sacrifice in Chess*.
>
> It was because Boris made a mistake in move 21 that opened up several winning strategies for her.
>
> It was because Boris had a migraine and did not play at his best.
>
> . . .

This is how it usually is. As was pointed out by John Stuart Mill ([1843] 1996, pp. 327–334), there are normally several causal factors that contribute to the production of an effect. But as he also pointed out, we seldom try do deal with them all on an equal basis. Instead, we tend to select only one of them and call it "the cause." It is not uncommon that different persons choose different causal factors as "the cause." In this case, it would be no surprise if Nadja sees her studies of Spielmann's book as "the cause" of her victory, whereas Boris considers his migraine to be the true cause. If the game is published in a chess magazine, readers can be expected to see either move 21 or move 22 as the cause of her victory.

Our choice of "the cause" among the causal factors that (jointly) lead up to an event depends on our perspective on that event and its antecedents. There is usually no single perspective that is more "right" than the others, and therefore there is no "right answer" to the question what "the cause" of an event is. This can also be seen from a classic example, namely, the cause of cholera. If you ask a bacteriologist what causes that disease, you will probably be told that it is caused by the bacterium *Vibrio cholerae*. If you ask an epidemiologist the same question, you will learn that it is caused by lack of proper sanitation (Rizzi and Pedersen 1992). They are of course both right. Their answers do not reveal a difference in opinion; they just put emphasis on different components in a complex causal process. The two answers can and arguably should coexist since they are useful in different contexts. A physician treating a patient with cholera has reasons to focus on the microbiological cause, whereas the cause mentioned by the epidemiologist should be at focus in preventive work. Attempts to make one of these two causal factors "the cause" for all purposes will render us less capable to solve urgent practical problems. ("Don't worry about sanitation. Cholera is caused by *Vibrio cholera*, nothing else.")

Cause selection is a rather complex process that does not seem to be governed by a single rule. It can be likened to the use of concentrated lighting on a theater stage. With a spotlight, all the light can be put on a small part of the stage. Often, there are several artistically reasonable ways to do this, representing different perspectives on the unfolding drama. Similarly, cause selection can be performed in many different ways.

> We sometimes single out one among all the causes of some event and call it "the" cause, as if there were no others. Or we single out a few as the "causes," calling the rest mere "causal factors" or "causal conditions." Or we speak of the "decisive" or "real" or "principal" cause. We may select the abnormal or extraordinary causes, or those under human control, or those we deem good or bad, or just those we want to talk about. I have nothing to say about these principles of invidious discrimination. (Lewis 1973, pp. 558–559)

The indeterminateness and lack of objective grounds for our choice of "the" cause among the causal factors has often been referred to as a "context sensitivity" of causal claims (Tarnovanu 2015, p. 68). However, it seems to be less a matter of the context than of perspectives and expectations, which may differ within one and the same context. The crucial conclusion we can draw from the multiplicity of causal factors is that our assignments of cause-effect relations depend not only on objective factors in the world but also on our perspectives and expectations.

The Insufficiency of Cause-Effect Relationships

As already indicated, the standard approach to causality, which is based on binary cause-effect relationships, also has another, even more serious problem. The problem is that cause-effect relationships only provide us with an incomplete picture of the world. Obviously, many of the interconnections that hold between different events at different points in time can be adequately accounted for with the cause-effect pattern. However, there are also important interconnections that do not fit into this pattern. In the context of natural science, this was pointed out by Bertrand Russell, who observed that "oddly enough, in advanced sciences such as gravitational astronomy, the word 'cause' never occurs" (Russell 1913, p. 1).

> In the motions of mutually gravitating bodies, there is nothing that can be called a cause, and nothing that can be called an effect; there is merely a formula. Certain differential equations can be found, which hold at every instant for every particle of the system, and which, given the configuration and velocities at one instant, or the configurations at two instants, render the configuration at any other earlier or later instant theoretically calculable. (Russell 1913, p. 14)

Notably, the differential equations that Russell referred to have a central role both in Newtonian mechanics and in the relativity theory that replaced it. In pre-Newtonian mechanics, cause-effect relations were sufficient. This is exemplified by the clockwork universe of René Descartes, in which nature operated in the same way as "the movements of a clock or other automaton follow from the arrangement of its

counter-weights and wheels" (Descartes [1632] 1987, p. 873). In Newtonian physics, in contrast, movements emerge from complex interactions between a large number of bodies, all of which influence each other simultaneously.

Modern physics relies even more on mechanisms not describable in terms of binary cause-effect relations than the physics that Russell referred to (Kuhn 1971; Hausman and Woodward 1999). Furthermore, social science has followed physics in adopting models in which the flow of events is determined by simultaneous mutual influences that cannot be adequately described in terms of the stepwise production of effects in a causal chain. This applies for instance to equilibria in economics. Similar complex interactions are also discussed in other areas of social science, such as political and organizational science, although usually not in terms of equation systems (Dent 2003). An account of complex social phenomena that is restricted to binary cause-effect relationships will lack much of the explanatory power of modern social science (Berger 1998, p. 324).

In summary, binary cause-effect relations are not sufficient to describe all the interconnections that there are among objects and events in the world. This makes it necessary to distinguish between two notions of causality. One of them is constituted by binary cause-effect relationships. We can call it *CE-causality*. The other, more general notion of causality refers to the combination of all the various types of interdependencies that obtain among objects and events in the world. We can specify it as consisting of all the connections between different events in the world by which what happens in some points in space-time restrict or partly determine what happens at other points in space-time. We can call this patterns-of-determination causality or *PoD-causality*. It is a feature of the world we are living in. CE-causality is one of the means by which we try to describe it. Newtonian and relativistic mechanics are other such means. Thus, CE-causality is a model of PoD-causality and in fact a rather crude and incomplete model. As always, it is important to distinguish between the real world and the models of it that we have created.

In this section we have made two important observations about CE-causality, which is our common notion of causality: (1) There is no objective ground for our selection of "the cause" of an event among a bundle of causal factors that contribute to it, and (2) binary cause-effect relations are insufficient to account for all the interconnections that prevail among objects and events. In combination, these two insights should be sufficient to caution us against the common assumption that responsibility can be founded on an objective fact base, consisting of cause-effect relationships. Additional reasons to be wary of that assumption will emerge from studying agent causality, the special type of causality that is particularly relevant for ascriptions of responsibility.

Agent Causality

One of the factors that affect our choice of "the cause" among causal factors is a tendency to focus on human actions whenever such actions have contributed to the effect. Therefore, agent causality has a certain priority in our account of causes.

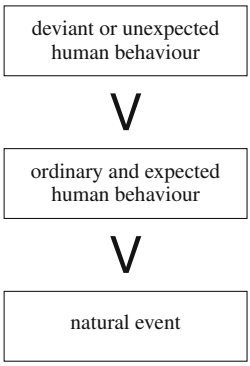

Fig. 1 General tendencies in our choice of "the cause" of an event, among the causal factors that contribute to it. Deviant and unexpected human behavior has the largest chance to be designated "the cause." Ordinary and expected human behavior comes second, followed by natural events

> Where there is only one human causal factor, no matter how small, that factor is potentially significant (and by human causal factor here I am referring to both human action and inaction). If it is also relatively close along the chain of causation that leads to the injury, we are very likely to assign causal responsibility to it. Indeed, even a very small human causal factor may bear causal and therefore moral responsibility if there is no other human causal factor to bear it. (Reiff 2015, p. 393)

Furthermore, if there is a choice among several causal factors exhibiting human actions, then we tend to give priority to actions that stand out as in some respect deviant or unexpected. This should be clear from the following example:

> Lora is driving on a country road in Kent, keeping to the left side of the road. Rose is driving in the opposite direction on the same road, but keeping to the right side. They meet at high speed in a curve and are both severely hurt.

Most of us would say, without doubt, that Rose caused the accident, since she drove on the right side of the road in left-hand traffic. But suppose that exactly the same course of events had taken place on a road in Hauts-de-France, on the other side of the Channel. Then we would have held Lora to have caused the accident, since she drove on the left side in right-hand traffic. Hence, we tend to consider deviant and unexpected behavior, rather than ordinary and "normal" conduct, as "the cause" of an event. These priorities are summarized in Fig. 1.

Causes with Moral Foundations

One of the ways in which human behavior can be deviant, or diverge from our expectations, is by departing from our moral norms. Perhaps surprisingly, moral aberrations often have a crucial role in determining our choice of "the cause" among a set of causal factors. There is a considerable amount of psychological research showing the role of norms in causality ascriptions (Willemsen and Kirfel 2019). For our present purposes, it is probably more useful to show this with the help of a couple of illustrative examples.

> Due to massive rainfalls, a segment of the river bank has been undermined, and anyone entering the area runs the risk of being drawn into the dangerous rapids.
>
> *Case 1*: Charles is well aware that a large part of the foundations of the river bank has been swept away. In spite of this, he recommends Andrew to go all the way down to the river to look for fish. The bank collapses, and Andrew drowns in the rapids.
>
> *Case 2*: Charles has no means of knowing that the river bank is damaged. He recommends Andrew to go all the way down to the river to look for fish. The bank collapses, and Andrew drowns in the rapids. (Hansson 2022)

In the first case, it seems reasonable to claim that Charles's ill-considered advice was "the cause" of Andrew's death. We would probably not hesitate to say that Charles "caused" the accident. In the second case, such a statement would appear much more problematic. Although Charles's advice is a causal factor in both cases (presumably, the accident would not have happened without it), we are much more hesitant to call it "the cause" of the accident in the second case. The crucial difference seems to be that we consider him morally culpable in the first but not in the second case.

> Despite her parents' advice to the contrary, Anne goes for a long walk on an unusually cold winter day, wearing only thin summer clothes and no coat or jacket. Three hours later she calls her parents from a hospital, where she is treated for severely frostbitten toes. "It's so unfair", she sobs. "Why should this happen to me of all the thousands of people who were out there in the streets?"
>
> "But dear Anne", says her mother. "I am sure they all had much warmer clothes than you. In this weather it is almost certain that you will have a cold injury if you dress like you did. No doubt, your way of dressing was the cause of your injury." (Hansson 2022)

What Anne's mother says makes sense and would be fairly uncontroversial. In this case, there are two obvious causal factors: the cold weather and Anne's decision to take a long walk in thin clothes. The first of these is a natural event, whereas the second is a consciously chosen human activity. As indicated above, we have a strong tendency to prefer human actions to natural events as "the cause" of something that happens.

> Despite her parents' advice to the contrary, Anne goes for a long walk in the late summer evening, wearing an unusually skimpy dress. Three hours later she enters a police station, weeping incessantly, to report a rape.
>
> In the trial three month's later, the defendant's attorney says: "There were thousands of women out in the streets that evening. In all probability, Anne was the only one who wore such an unusually revealing dress. We have just heard my client telling us that this is what made him approach her – admittedly in a somewhat pushy manner – rather than someone else. Given what we know about young men in this city I am convinced that if he had not approached her in this manner, then someone else would have done so. It is therefore obvious that her dress was the dominant causal factor that led up to the interactions that we are here to clarify. I do not hesitate to say that her way of dressing was the cause of what happened." (Hansson 2022)

This example is in some respects similar to the previous one, but there is a crucial difference: the most obvious alternative to characterizing Anne's behavior as "the cause" is to assign that role to the actions of the rapist. The reason why we find the attorney's causal claim to be preposterous is that the rapist's actions are by all standards

incomparably more morally reprehensible than any choice of clothes that a person could make. Again, our moral appraisal determines our choice of "the cause" of what happens.

Let us now consider a couple of examples from road traffic.

> *Case 1*: A man steps out into a motorway where no pedestrian access is allowed. The driver of an approaching car tries but fails to stop, and the man is killed.
>
> *Case 2*: A man walks out into the street on a pedestrian crossing. The driver of an approaching car tries but fails to stop, and the man is killed.

Even if what happens physically is exactly the same in the two cases, we are much less willing in case 2 than in case 1 to describe the pedestrian's behavior as "the cause" of the accident. The reason for this is of course that he is morally less at fault in the latter case.

> A drunk driver loses control of the car, which hits and kills a woman walking on the pavement.

In this case, we would typically describe the drunk driving as "the cause" without even considering other causal factors. But there are at least two other causal factors at play. One of them is the pedestrian's choice of a place to walk. This accident would not have happened if she had been somewhere else at this moment. However, since her action is morally unassailable, it is a much less plausible candidate for "the cause" than that of the driver.

The other factor that we should consider in this case is a technical feature of the car, namely, that it was so constructed that an inebriated person could start and drive it (since it had no alcohol interlock). If we treat this as just a physical fact, then it cannot compete with the driver's behavior for the position as "the cause" of the accident. However, the car is not just a physical object but also a designed product, and decisions have been made on what safety features it should and should not be provided with. If we shift our perspective from this particular accident to the large number of accidents that involve drunk driving as an essential component, then these decisions might very well be a plausible choice for "the cause" (Cf. Grill and Fahlquist 2012).

All these examples contribute to making it clear that agent causality is strongly connected with moral assessments of actions. This was observed already by Ludwig Wittgenstein, who said: "Calling something 'the cause' is like pointing and saying: 'He's to blame!'" (Wittgenstein 1976, p. 410).

For good reasons, we want to separate our discussions and deliberations on facts as far as possible from our moral beliefs (Hansson 2018). This, however, does not seem to be fully achievable since, as we have seen in the above examples, moral concerns are often decisive for what we choose to call "the cause" of an event. This is a most undesirable conclusion, since it appears to entail that we are stuck in a kind of moral morass with no means to reach a stable factual ground. It does not seem possible to systematize our moral thoughts in a precise and well-ordered manner if our factual statements about human action are inextricably coalesced with our moral assessments. It should therefore be no surprise that many philosophers have

toned down the influence of moral appraisals on causal claims or maintained (unrealistically) that our everyday concept of causality can be purged of its moral contents. (See Reiff (2015) and Tarnovanu (2015) for unusually clear statements of the issue and good selections of references.)

But there is another way out, which becomes obvious once we have realized that CE-causality is only a model for describing factual connections in the world. The problems that we encountered in the above examples were all connected with attempts to identify "the cause" in an objective way. The failure of attempts to do so does not show that we have no means of separating factual and moral assertions from each other; it only shows that the highly simplified single-cause variant of CE-causality (which is usually presumed in moral discussions) does not provide us with means to make such a separation. The chances of achieving the separation will be much better if we replace the search for single causes by attempts to identify multiple causal factors or even, when necessary, turn to models of simultaneous interactions that go beyond what can be described in terms of binary cause-effect relations (Hansson 2010). This should come as much less of a surprise to accident analysts than to moral philosophers. Accident analysis has a long tradition of searching for multiple causal factors rather than a single cause. The focus is usually on causal factors whose elimination is predicted to be feasible and to reduce the risks of future accidents. Such causal factors are usually called "root causes" (Parry 1991; Rooney and Vanden Heuvel 2004; Boyd 2015). This is arguably a somewhat misleading terminology. "Target causes" would be a better term, since the "root causes" are selected to be targeted in subsequent safety work.

The Politics of Causality

The strong connection between causality and responsibility has important consequences for political discourse and action. If the public conceives an activity as the cause of something undesirable, then chances are high that they will hold those who perform that activity responsible and require changes in their behavior. This gives rise to a "politics of causality," i.e., attempts by different actors to influence public perceptions of causality.

The most common strategy in causality politics can be called *backgrounding*. It consists in attempts to move, in the public's perception, a causal factor as far into the presumably unalterable background as possible. Backgrounding is usually performed on behalf of social actors whose activities give rise to a causal factor for some socially undesirable outcome. They try to turn away the public's attention from their own contribution, often by pointing at some other causal factor for which someone else can be blamed. Organizations that contribute to health risks and other dangers are particularly active in backgrounding. Tobacco companies are a prime example. Most of their victims became addicted before reaching the age of majority. In order to disclaim responsibility for the massive lethal effects of their products, these companies claim that "the cause" that a person smokes is a free and voluntary choice by herself.

The opposite of backgrounding is *foregrounding*, the process of attracting attention to causal factors that were previously parts of the unheeded background. Foregrounding is a strategy often adopted by social critics who wish to put causal factors on the agenda that were previously treated as unalterable parts of the social structure. One important example is the changed attitude to workplace health and safety that was achieved in the late nineteenth century by trade unions and public health activists. Previously, dangerous working conditions were treated as unavoidable, and workplace accidents were blamed on the victims. It is now generally accepted that workplace accidents are caused by dangerous working conditions, which employers are responsible for eliminating. Currently, foregrounding is an important part of public health efforts aimed at risk factors such as smoking, malnutrition, and obesity. In these cases, foregrounding consists in looking beyond the choices of affected individuals and addressing the "background" conditions under which these so-called lifestyle choices are made.

To illustrate the politics of causality, let us consider one hypothetical and one actual example. The hypothetical example is as follows:

> A manufacturer of chain saws sells a model with a very strong motor. The user regulates the speed of the chain by pressing a handle. If the handle is pressed to the bottom, then the chain will move so fast that the user cannot control the saw, and there are grave risks both to the user her- or himself and to people in the vicinity. The saw has an instrument on which users can see if they press the handle too hard, and it is legally prohibited to pass certain marks on that instrument. But in spite of this, accidents are common, and hundreds of people die every year due to chainsaws being run at too high speeds. (Hansson 2022)

I have presented this example in various lectures and discussions and as yet never encountered a person who claimed that these accidents were caused by careless users of the saw. We seem all to agree that these accidents should be causally attributed to the dangerous construction of the saw. This causal attribution supports the standpoint that the manufacturer is responsible for the accidents and should therefore urgently provide the saws with a speed limiter that prevents them from being run at too high speeds.

Let us now turn to the actual example:

> A manufacturer of motor vehicles sells a model with a very strong motor. The user regulates the speed of the vehicle by pressing a pedal. If the pedal is pressed to the bottom, then the vehicle will move so fast that the user cannot control it, and there are grave risks both to the user her- or himself and to people in the vicinity. The vehicle has an instrument on which users can see if they press the pedal too hard, and it is legally prohibited to pass certain marks on that instrument. But in spite of this, accidents are common, and hundreds of thousands of people die every year due to motor vehicles being run at too high speeds.

In this case, we tend to consider the accidents to be caused by the users (drivers), and consequently, the consumers rather than the manufacturer are held responsible for the accidents. Therefore, as noted by Christer Hydén, "[t]he most obvious measure to treat non-compliance of speed rules – the vehicle speed limiter – is not on the agenda yet" (Hydén 2019, p. 4). Estimates based on experiments with speed limiting devices

indicate that obligatory speed limiters have the potential to reduce road fatalities by about 25–50% (ibid., p. 5). However, such a measure would not be uncontroversial. In 2019, an automobile manufacturer announced that it will block speeds above 180 km/h on all their new cars, except emergency vehicles. This is a high limit that will have no impact whatsoever on non-criminal driving, but nevertheless a motor journalist made a failed attempt to start a campaign against the decision (Nilsson 2020a, b).

Notably, there is no "objective" or mechanical difference between chain saws and motor vehicles that justifies the difference between our assignments of causality in the two cases. Instead, the contrast between our judgments in the two cases reflects our customs and conventions concerning two types of technological devices. It is the politics of causality, rather than the causal structures themselves, that differs between the two cases.

Responsibility in Road Traffic

In this final section, we are going to apply what we have found out in the previous sections about responsibility and causality to safety in road traffic.

The Traditional Approach

The approach to responsibility for road safety that prevailed throughout the twentieth century has been well described as follows:

> Historically, road accidents have been treated as isolated incidents caused by bad drivers and as an unfortunate side effect of increased mobility. Consequently, responsibility has been ascribed to individual road users whose behavior government responses have sought to influence through education, regulation, and control. (Hysing 2021)

This approach may have psychological advantages. According to Elaine Walster, it can be reassuring to categorize a serious accident as the victim's fault, since we can then "assure ourselves that we are a different kind of person from the victim, or that we would behave differently under similar circumstances, and we feel protected from catastrophe" (Walster 1966, p. 74). However that may be, this approach has a most serious disadvantage: its exclusive focus on mistakes by individual road users tends to block considerations of efficient measures that would reduce injuries and fatalities.

Well into the 1960s, it was generally accepted that traffic safety was all about *crash avoidance*. Governments, automobile manufacturers, insurance companies, and motorist organizations all agreed that it was the drivers' responsibility to avoid all collisions. The manufacturers' responsibility was limited to making this possible by delivering vehicles with adequate mechanisms for steering and braking that were reliable enough to make sure that the driver would not suddenly lose control.

Similarly, the responsibility of road managers was limited to providing a reasonably smooth road without undetectable obstacles. Even in cases when a crash could be linked to a mechanical failure, the blame was often put on the driver for lacking maintenance (Wetmore 2004, pp. 380–382).

In the 1960s, after considerable struggles, the crash avoidance approach was supplemented with requirements of *crashworthiness*. Since crashes were unavoidable – and rising in numbers – manufacturers were now held responsible for reducing the consequences of crashes. This led to the introduction of seat belts, crumple zones, and other life-saving technologies (Wetmore 2004, pp. 383–389). Today, after more than half a century of improvements in crashworthiness, cars are much safer than they once were.

However, the demands of crashworthiness did not lead to a shift in the ascription of responsibility for crashes and their consequences. True, the responsibilities of manufacturers were extended. They now had to deliver cars equipped not only with reliable mechanisms for steering and braking but also with equally dependable crashworthiness features such as seat belts. However, it seemed – and still seems – to be assumed that the vehicle manufacturer has satisfied all its responsibilities when it has delivered a vehicle that satisfies all the legal safety requirements. For what happens after delivery, road users are still held almost exclusively responsible, even if improved or additional safety features could have prevented deaths or injuries.

An interesting example of this can be found in an article from 1978 by two British psychologists (Howarth and Repetto-Wright 1978). They reported a pattern that they had found in official documents about accidents involving child pedestrians: Such accidents were usually considered to be caused by the child's behavior. In police reports, the most common explanation of these accidents was that the child "ran heedlessly into the road." Courts tended to conclude that "in the circumstances there was nothing the driver could do," and consequently the driver was acquitted and considered blameless (ibid., p. 10). The same approach was implicitly taken by road safety experts, who advocated training of children as the most important countermeasure against these accidents.

However, the two authors had made observations of children crossing roads and found that the description of their behavior as "heedless" was far from accurate. Children were typically highly aware of the traffic, and often afraid of crossing roads, but they sometimes made mistakes such as misjudging the speed of a vehicle or not noticing a vehicle because of their close attention to another vehicle. In the moments before an accident, the situation was "surprisingly symmetrical. The child can see the danger but makes the wrong judgement: the driver can see the child but misjudges what the child will do. In these circumstances," the authors said, "it is rather odd and indeed discreditable to absolve the driver from responsibility for his misjudgement but to blame the child" (ibid., p. 10). Noting "how difficult it is to change the behaviour of children on the roads" (ibid., p. 11), they proposed that drivers "must be regarded as at least equally responsible for these accidents, and we must now ask what could be achieved by altering their behaviour" (ibid., p. 12). It was necessary to "*redefine* the responsibility of drivers for pedestrian accidents," for

the simple reason that drivers "have the greatest power to reduce these accidents" (ibid., p. 13).

This shift of responsibility from children to adults was clearly a step forward, but interestingly, the two authors explicitly dismissed proposals to reform the traffic system in order to protect children against accidents. They noted that there were people who wanted to place "our chief reliance on engineering measures to keep pedestrians and vehicles apart," either by constructing "controlled crossings, bridges or underpasses" or by adult accompaniment or the provision of school buses. They considered all these proposals to be unrealistically costly, but they also rejected them on more principled grounds. These proposals were, as they saw it, based on the assumption that "neither pedestrian nor driver are [sic] at fault," a standpoint that they equated with the view that "no-one is to blame." They expressed relief that "[f]ortunately most people in this country are not willing to take up such an extreme ideological point of view" (ibid., p. 11). Remarkably, they did not mention lowered speed limits in this context. (However, in a later article, the main author mentioned that driver education should include the advice to slow down when one sees a child wishing to cross the road; Howarth 1985, p. 176.)

The focus on the road user's individual responsibility is still remarkably strong in the traffic safety literature. That literature is still replete with claims that the vast majority of traffic accidents, typically around 90%, are caused by human failures (Algora-Buenafé et al. 2017, p. 240; Santosa et al. 2017; Harantová et al. 2019). This claim is also prevalent in the (remarkably small) ethical literature on traffic safety. For instance, Meshi Ori writes:

> It is well established in traffic safety literature that human factors are the predominant causes of traffic crashes. Obviously there are physical, and probably social and cultural aspects that count as contributing factors to the causes of traffic crashes, but those are marginal and depend on the way the driver/rider is influenced by them. (Ori 2014, p. 356)

However, as we saw above, no one can establish what the "predominant causes" of traffic accidents are, for the simple reason that the designation of some causal factors as "causes" or as "predominant" cannot be done in an objective way. In accident investigations performed under the assumption that vehicles complying with the legal regulations are beyond criticism, human failures will be the predominant causal factors. If we instead assume that human mistakes are inevitable, and investigate how the technology reacts to such mistakes, then the causal analysis will have a different outcome.

In addition, the ethical literature on traffic safety contains standpoints that go even further than the technical traffic safety literature in assigning responsibility to individual road users. In his often-quoted 2004 paper on traffic accidents, Douglas Husak observes that "personal vehicles cause tremendous amounts of harm" and adds that "much of this harm is caused culpably" (Husak 2004, p. 351). Without even considering other options, he assigns this culpability entirely to individual drivers and proceeds to discuss "*moral* questions about the use of personal motor vehicles." In doing this, he goes beyond "the trivial observation that many motor vehicle accidents

result from speeding, alcohol impairment, or some other kind of unlawful mode of operation" (ibid., p. 351). In his view, even careful and law-abiding driving involves so large risks for other persons that driving "for frivolous purposes" is immoral (ibid., p. 362). This would include "traveling across town to patronize a new bar or restaurant," going "from one outlet to another" to find a cheaper product, as well as all forms of "purely recreational" driving. He also finds it culpable that "[m]any persons elect to live [at] great distances from their place of employment" so that they have to travel longer than necessary to work (ibid., p. 361).

Husak himself recognizes the crucial weakness of assigning, as he does, causality and responsibility for traffic accidents exclusively to the individual road users.

> I have no illusions that the general public will be receptive to my proposals. Pleas to curb driving are likely to be met with ridicule and hostility. (Husak 2004, p. 370)

He is not alone in this insight. The limitations to what can be achieved by attempts to change road users' behavior were a major factor leading to a new approach that aims for radical improvement of the traffic system.

Vision Zero

This new approach received its first official formulation in 1997 when the Swedish Parliament adopted Vision Zero as the overarching framework for road traffic safety in the country (Rosencrantz et al. 2007; Belin et al. 2012). The basic assumption of Vision Zero is that "from an ethical standpoint, it is not acceptable that any people die or are seriously injured when utilizing the road transportation system" (Government Bill, 1996/1997:137, p. 15). All serious accidents are considered to be unacceptable, and efforts to reduce the number of fatalities and serious injuries must continue assiduously as long as accidents still occur. This cannot be achieved with the traditional approach that assigns almost the whole burden of responsibility to drivers and other road users. Therefore, Vision Zero makes the designers and implementers of the transport system responsible for eliminating human deaths and injuries. In the terminology introduced above, the movement for Vision Zero is an unusually clear example of a movement for the foregrounding of previously backgrounded causal factors.

The Vision Zero approach to responsibility is new, and in a sense revolutionary, in traffic safety. However, it is certainly not without forerunners in other areas of safety. In a sense, it can be seen as the implementation in traffic safety of a general outlook that has long been taken for self-evident in workplace safety. In stark contrast to the traditional focus on individual fault and culpability in traffic safety, workplace safety has a strong and well-established focus on technological and organizational causal factors that can be eliminated or curtailed in order to reduce the prevalence of injuries. Since these factors are almost invariably in the employer's control, it follows from this approach that the employer, rather than the employees, has the primary responsibility for safety on the workplace.

An interesting comparison can be made between the approaches to two types of traffic accidents, namely, road traffic accidents and accidents with forklift trucks on workplaces. As we have just noted, the road traffic literature still standardly looks for "the cause" of accidents and categorizes most accidents as caused by road users. In contrast, at least since the 1970s, the literature on forklift truck safety has refrained from looking for culprits and instead investigated the various types of forklift accidents with the purpose of "[p]rescribing the remedy (design improvement) to minimize the hazard and lower the risk" (MacCollum 1978, p. 145; cf. Stout-Wiegand 1987; Larsson and Rechnitzer 1994). One of the effects of Vision Zero is that the view of causality and responsibility that has since long been applied to forklifts, as well as to other dangerous machines on workplaces, is now increasingly applied to motor vehicles on public roads.

Self-Driving Cars

Self-driving cars have been discussed and to some extent developed at least since the 1950s, but it is only in the twenty-first century that they have become a realistic possibility. One of the several ethical issues that their potential introduction gives rise to is that of responsibility, in particular blame responsibility. Self-driving cars are predicted to be involved in fewer accidents than conventional cars, but there will still be accidents. Who should be held responsible for such accidents?

There are four reasonably plausible answers to this question. Blame responsibility for accidents can be assigned to:

- The car itself, or more precisely to the *artificial intelligence* built into it
- The *users* who travel in the cars
- *No one* at all, just like no one is held responsible for the occurrence of natural disasters
- *Other persons* than the users

Let us consider each of these options in turn. Concerning the first, it is important to distinguish between the question whether the artificial intelligence in self-driving cars can be held responsible for accidents and the much more general question whether any artificial intelligence can at all be held responsible in the same way as we hold human beings responsible for their doings (Nyholm 2018a, pp. 1209–1210). The answer to the latter question seems to depend crucially on what types of artificial intelligence humans will encounter in the future. We can think of hypothetical future intelligences that will exhibit beliefs and desires and communicate with humans about moral issues in much the same way that we humans communicate with each other. It is fairly plausible that we, or future humans, would be disposed to assign blame (and task) responsibilities to such artificial agents, if and when we encounter them. However, this is not the type of artificial intelligence that will be installed in self-driving cars. Instead, these vehicles will be provided with software that is constructed to execute the orders given by humans and to do so in accordance

with guidelines and restrictions devised by their human designers. Therefore, it seems highly unlikely that we will treat them as agents that can be culpable or held responsible (Brey 2013; Purves et al. 2015; Coeckelbergh 2016; Nyholm 2018b).

Our second option is to hold the users of self-driving cars blame responsible for whatever damage the car is deemed to cause. Concerning this option, it is important to distinguish between semi-automated and fully automated vehicles. A semi-automated vehicle still has a "driver," who is passively but constantly following the driving and prepared to intervene immediately whenever necessary. With this arrangement, it does not appear unreasonable to assign blame responsibility to a (standby) driver who did not take over and solve a situation that the system could not solve. A fully automated vehicle does not require a standby driver. Such a car can navigate on the roads without any human driver or passenger or when everyone onboard is asleep. It is difficult to see how blame responsibility for an accident could be assigned to the occupants of a vehicle under such circumstances.

The third option is to refrain from assigning blame responsibility for an accident to anyone at all. This is how we often react to natural events. We do not assign blame responsibility to anyone for the occurrence of hurricanes or tsunamis (although we often assign blame to people who have failed to prepare properly for such events). However, this is not how we react to machines or other technological devices that are causal factors in an accident. As noted above, we have a strong tendency to focus on causal factors that involve human actions, whenever there are any such factors. For example, automated train systems have been introduced in many parts of the world, mostly in metro networks and airport transit systems (Wang et al. 2016). Automated trains are subject to extensive safety management. Accidents are certainly not treated in the same way as unevadable natural disasters. Instead, they are treated in the same way as accidents in other, less automated technological systems, namely, as avoidable failings for which human beings are responsible (Seng et al. 2009). There is no reason to believe that accidents in automated systems on roads will be treated differently.

This leaves us with the fourth option, namely, to assign blame responsibility for accidents to some other persons than the users of the automatic vehicles. There are strong reasons to assume that this is what is going to happen. The obvious candidates for undertaking responsibility are the system designers and system owners, i.e., those who are responsible for the construction of the vehicles and the construction, maintenance, and management of the roads and the communication systems that these vehicles will operate with. This is how we assign responsibilities for other automated systems, such as the automated trains just mentioned. Importantly, this is also how the first serious accidents involving self-driving cars have been dealt with. In media and in public discussions, the responsibility of the car manufacturers has been taken for granted. There are also clear signs that the automobile industry is planning to assume that responsibility (Atiyeh 2015; Nyholm 2018b).

In conclusion, we have strong reasons to expect that the blame responsibility for accidents implicating self-driving cars will be assigned to designers and owners of the automated traffic system. But that is only part of the answer to our question. Our

future traffic systems will have many designers and owners. If two self-driving cars of different brands collide, then responsibilities may have to distributed among two automobile companies, the organization responsible for maintenance of the road, the organization(s) running the electronic communication system(s) that guided and coordinated the two vehicles, and various subcontractors of these companies and organizations. The automobile industry has a history of protracted blame games (Noggle and Palmer 2005), and neither legal battles nor public relations campaigns over these responsibilities should come as a surprise. Instead of the philosophically fascinating, but probably unrealistic, issue whether we can assign responsibility to the self-driving cars themselves, we may have to deal with more mundane conflicts between companies trying to avoid financial and reputational losses.

Institutional and Professional Responsibility

Much of the discussion above boils down to the unavoidable conclusion that in order to improve traffic safety, it is not sufficient to remind road users of their responsibilities. First and foremost, we have to assign important task responsibilities to those who have the resources and the power to bring about such improvements, namely, the system designers. This will not always be easy. Road traffic has no single responsible authority corresponding to the employer on a workplace. Instead, it has a large and rather heterogeneous collection of system designers.

> Who then are the system designers? In the Swedish VZ policy, the concept embraces all actors—public and private—who, in their professional capacity, influence the design and function of the road system. . . Three groups of designers were singled out as particularly important: road administrators (state, municipalities, and private), the automotive industry, and actors procuring or providing transport services (taxi, bus, and freight). Other identified system designers are actors responsible for various support systems, such as the police (monitoring and enforcement), driving schools (education), and emergency services, health care, and rehabilitation professionals. (Hysing 2021)

As yet, the responsibility of system designers is largely informal. Those working in the public sector are of course required to implement the government's policy, but the involvement of the automotive industry and other private sector companies and organizations is voluntary. Furthermore, there is no liability associated with these responsibilities. This can be compared to the employer's responsibility for workplace safety, which is in most jurisdictions fairly far-reaching and subject to legal sanctions. As discussed in Abebe et al. (2022), the lack of legal liability for system designers has been the object of some criticism, but it is not clear whether the introduction of such liability would lead to improvements in safety.

Importantly, the system designers' responsibility is a matter of both institutional and professional responsibility. The institutional responsibility is carried out by government agencies and private companies. The professional responsibility is carried out by the traffic safety experts who work in these institutions.

The notion of specific professional responsibilities goes back at least to the Greek physician Hippocrates (c. 460–c. 370 BCE), whose oath for physicians made it clear that a physician, when acting as a professional, has special duties and responsibilities that differ from those of citizens in general. In the Hippocratic tradition, the physician had to act for the benefit of the ill, keep silent about what he learnt about patients and their families, and treat all patients alike irrespective of whether they were men or women, rich or poor, free or slaves. If needed he should offer his service for free to the poor (Jouanna 1999, pp. 112–126; Askitopoulou and Vgontzas 2018). These are still parts of the ethics of the medical profession. However, there is also an important difference: Whereas the Hippocratic physician acted alone, physicians in the modern world work together with others. Instead of the single physician visiting patients in their homes, healthcare is now mainly performed in teams consisting of physicians and other healthcare personnel with different specializations (Heubel 2015).

What makes medical ethics *professional* is that it puts focus on certain values for which members of the profession have a special responsibility. For instance, according to the Hippocratic oath, the physician should always be of service to the ill. Therefore, he could not undertake to kill or hurt a person with a poison or suggest to others how to do so (Jouanna 1999, pp. 128–131). Interestingly, this was recognized by Plato, who considered it a more serious crime for a physician than for a layperson to poison a person. (Plato, *Laws*, Chap. 11, p. 933d.) Still today, all major organizations in the medical profession disallow their members to contribute in any way to capital punishment (Anon 2005; Litton 2013). In this context, the American Medical Association has made it very clear that professional ethics is distinct from personal moral judgments:

> An individual's opinion on capital punishment is the personal moral decision of the individual. A physician, as a member of a profession dedicated to preserving life when there is hope of doing so, should not be a participant in an execution. (American Medical Association 2019)

Much later than physicians, other professions have developed professional identities, responsibilities, and ethical principles of their own. Lawyers, accountants, and engineers are among the most prominent examples. For instance, since the late nineteenth century, the engineering profession has developed ethical codes and delineated specific responsibilities that follow with the profession of an engineer. The value that has most often been associated with engineering professionalism is that of safety. Just as the ethical codes of physicians prevent them from undertaking to poison or otherwise hurt a person (even if it is legal to do so), the ethical codes of engineers prevent them from accepting assignments to make unsafe or dangerous constructions. Importantly, the ethical requirement not to compromise on safety is considered to override contractual obligations towards employers and customers.

Road safety has not yet been established as a profession like those of medicine and engineering, but the professionals whose work determines the risks we all run as road users can easily be identified. Although the overarching responsibilities for

traffic safety has to be assigned to the organizations that make and maintain roads and vehicles, the practical day-to-day implementation of these responsibilities will require the direct engagement of those who actually do the work. It is difficult to see how patient safety could be achieved in a hospital solely through directives from the top, without authorizing competent professionals to independently promote safety in their daily work. Road safety may not be very different from patient safety in this respect.

Cross-References

- ▶ Arguments Against Vision Zero: A Literature Review
- ▶ ISO 39001 Road Traffic Safety Management System, Performance Recording, and Reporting
- ▶ Saving Lives Beyond 2020: The Next Steps
- ▶ Vision Zero in Sweden: Streaming Through Problems, Politics, and Policies
- ▶ Vision Zero: How It All Started

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