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First principles, second hand: Perceptions and interpretations of vision zero in Norway

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ABSTRACT

The article discusses the Norwegian version of the Swedish road safety concept Vision Zero, and how it has been interpreted and developed in its Norwegian context. Vision Zero has attracted considerable interest and support in many parts of the world, and it seems likely that the Vision Zero philosophy will continue to be a strong influence on international road safety work. It is not a given, however, that a vision will have the same kind of impact outside of the country and context where it was first developed. We briefly describe the official Norwegian documents of the vision, the main part of the article, however, is based on interviews with various actors in the Norwegian road safety system, in order to find how the vision is interpreted and perceived among those working with transport and road safety. Interviewees include politicians, representatives for the National Public Roads Administration, Council for Road Safety and Police, as well as NGOs. We find that the interpretative flexibility of the vision and relative lack of public debate have created a situation where actors focus on different aspects of the vision, and on different levels, from theoretical questions of ethics to specific practical questions of implementation. On the whole, it seems that the connection between the different levels of the vision are somewhat tenuous, and in this situation actors are relatively free to construct their own interpretation, rather than building one shared vision. While the modified Norwegian approach may very well prove effective, it nevertheless raises the question of what a "Vision Zero" approach means.

1. Introduction

Vision Zero – "the image of a future in which no-one will be killed or seriously injured [on the roads]" (*Safe Traffic, Vision Zero on the Move*) – was developed in Sweden to serve as an ethical foundation and a "basis for the work conducted on road safety" [ibid.].

The vision may be seen as a kind of paradigm shift in road safety work, in that it states that under this system, "safety may not be traded for mobility" (Tingvall and Haworth, 1999), and should be seen as a "basic human right" (Johansson, 2006). It is to be noted, however, that the vision was not to be interpreted as a *target*: it is not seen to be realistic that eventually no-one will be killed or seriously injured on the roads, but fatal accidents are not to be considered a normal side-effect of the system.

The vision was originally developed in the Swedish Road Administration, and was later embraced by the Minister of Communications (Lindberg, 2001), and ratified by the Swedish Parliament after a parliamentary debate in 1997 (Regeringens proposition, 1996/97: 137). In Norway, Vision Zero was introduced in the National Transport Plan in 2001 (Nasjonal Transportplan, 2002–2011. St. meld. nr. 46). The Norwegian version, however, cannot be understood as an exact copy of the Swedish one, as the Transport Plan made no reference to the Swedish vision, and its Norwegian counterpart was described in somewhat different, and arguably less specific, terms. So obviously, though very clearly related to the Swedish vision, the Norwegian Vision Zero is not necessarily to be supposed to be the "same thing".

The respective visions have now been part of the countries' transport safety policies for several years. This article will investigate how the Norwegian vision has fared, given its status as – in a sense – a copy-cat vision. It is a vision that has not been developed locally, but imported from a different country and context, and it has not had the same kind of political backing as the Swedish vision did, or the same history within the road administration and the political sphere.

There are, therefore, good reasons to believe that it will not be as well integrated into the relevant systems and organisations or have the same kind of support and momentum as is the case in Sweden. Then again, Norway has had the advantage of being able to look to the situation in Sweden, and copy measures and policies that seem to be successful, and avoid those that are unsuccessful,

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whether in the sense of not working according to intentions or in the sense of being overly controversial. Since the Vision Zero philosophy exerts strong influence on road safety thinking in many parts of the world (see for instance Peirce, 2007; Whitelegg and Haq, 2006; Wiles, 2007; Scottish Liberal Democrats Homepage), the Norwegian experiences should be of relevance also outside of the national context.

A vision, of course, can never be a completely clear-cut object, and its effects will be a function of how various actors in the road safety field interpret the vision and it contents, and what they perceive to be its actual and desired consequences. This article will briefly describe and contrast the official Swedish and Norwegian versions of Vision Zero, and also discuss how the Norwegian vision as set out in policy documents has developed over time. The main focus of the article, however, is to track developments in the Norwegian vision as it is interpreted, transformed, appropriated or rejected by various groups of actors. We argue that the vision has in practice fragmented into several different layers or even visions, and that different actors relate to the vision on different levels, of which only one appears to have practical implications. The Vision Zero that actually "works", then, can be seen as an impoverished version of the original. The more fundamental questions raised by the Vision Zero philosophy are rarely discussed, and whatever solution they may find, seems likely to be incremental, situated, and pragmatic.

2. Methodological approach

The article is based on interviews with a number of the most central actors working with road safety or related issues, from employees in the National Public Road Administration (NPRA), official actors such as representatives for the police and the Norwegian Council for Road Safety, to politicians and various NGOs, representing interests such as motorists, businesses, and the environment.

The NPRA, the Police (as represented by the National Police Directorate and the Central Mobile Police Service) and The National Council for Road Safety were included because they have traditionally been the central actors in road safety work in Norway, and would thus be seen as "natural" sources of information in any context relating to road safety. The other organisations were selected because they had recently taken part in the public debate of Vision Zero. The informants within NPRA were selected on the basis of their positions and functions, where we sought to achieve a mixture between people working on the strategic and the operational levels. We also made use of "snowballing", and asked interviewees to suggest further informants. Since the adoption of Vision Zero is intended to change the process of road construction, we conducted 20 in-depth interviews with personnel working in the NPRA (managers, project leaders for new road projects, planners and strategy formulators and traffic safety specialists) a total of 7 interviews with 10 representatives of major stakeholder organizations outside the NPRA (such as car-owner organizations, road safety association etc.) The informants were all in leading positions, and therefore authorized to speak on behalf of their respective organisations.

In addition, an interview was carried out with the then state secretary of the Ministry of Transportation, and the article also makes use of data from interviews with the Standing Committee on Transport and Communications in the Norwegian Parliament, since national road safety policy (as described in the National Plan for Transport) must always be ratified by Parliament.

The interviews were semi-structured, based on a standardized interview guide, and each interview lasted approximately one hour. This approach offers the informants the opportunity to express their views and explain issues in their own words (McCracken, 1988). For practical reasons, the leader of the Central Mobile Police service was interviewed over the phone. Transcripts of interviews were made available to the informants in so far as they were used in the report upon which this article is based (Elvebakk and Steiro, 2007), and several of the informants took this opportunity to modify or make clearer their positions.

All the interviews were carried out between September 2004 and April 2005. This period is of particular interest because while the vision had at that point been in place for some time, it was still in the process of finding its authoritative shape.

3. Vision zero: various versions

3.1. Vision zero in Sweden

The fact that national road safety policy is to be founded on Vision Zero need not imply very much at all. Most people, and most countries, might subscribe to a general vision of a virtually risk-free transport system, provided that "vision" was interpreted to mean something along the lines of "wish", or "hope". Several questions must be answered in order to tell what the visions really entail in practice. Among them; does this vision amount to a binding commitment at all? Who is committed to do something? And what are they committed to do? The Swedish road administration seeks to answer these questions through distinguishing between the vision as "attitude" and the vision as "strategies" (*Safe Traffic, Vision Zero on the Move*), where the former denotes the unacceptability in principle of allowing people to die in traffic, whereas the latter refers to the more technical aspects of the vision, the perceived practical implications of the vision.

The version of Vision Zero developed by the Swedish Road Administration sets out to place road safety work on a firm, scientific basis: the human body's tolerance to trauma. Given what we know about the human organism (and cars, safety systems, roads and physics), we should be able to construct a road system that simply prevents fatal accidents, where safety can be seen as a function of the system. Proponents of Vision Zero have presented statistics and charts (Andersson et al., 1997) that demonstrate how people will *normally*, given that appropriate safety equipment is used, survive a head on collision without permanent injury if the cars involved do not exceed a speed of 70 km/h, and the same would be true of a side impact if the speed does not exceed 50 km/h. Pedestrians will usually survive an encounter with a car if the car drives at a speed no higher than 30 km/h (Elvik and Amundsen, 2000). One of the architects behind the vision in the Swedish Road Administration, then Director of Traffic Safety Claes Tingvall, stated the requirements of the vision as being so strong that:

> "Whenever someone is killed or seriously injured, necessary steps must be taken to avoid a similar event." (Tingvall and Haworth, 1999).

If we never actually risk exposing people to the kind of impact that their bodies cannot withstand, the road system is finally safe, and fatalities need not occur, or only very infrequently, as is the case for accidents in many other sectors of society. Typically, the road system has been compared to air traffic and the railway, and to professional spheres such as hospitals and businesses, in order to illustrate that safety margins and requirements are unacceptably low in road traffic.

We might see this approach to road safety as erecting "first principles" for road safety work. We are given the relevant data, and the relations between data and outcome, so that the road system that is to be constructed might be seen as logically deducted from these principles. The road system follows from the vision, so to speak. In actual fact, however, things are more complicated, and roads are usually not constructed along the lines of mathematical arguments. Rather, their final design is the result of negotiating a myriad of frequently conflicting considerations.

Vision Zero in its official version, as passed by the Swedish Parliament likewise stated that the Swedish road system's form and function should be adapted to the requirements of Vision Zero, that is; the toleration levels of individuals. The responsibility for making this come about was to reside with road authorities, vehicle producers, and professional transport companies. It has been observed, however, that the version of Vision Zero passed by the Swedish Parliament played down the responsibility of the road constructors relative to the vision as promoted by the Road Administration (Lind, 2001).

On the website of the Swedish Road Administration, Vision Zero is also explicitly associated with increased use of certain specific safety measures; roundabouts, centre guardrails, lowered speed limits in residential areas, and safer ("forgiving") roadsides. Turnabouts, for instance, are frequently seen to embody the vision's principles, as it may in fact increase the *number* of accidents, but the accidents will typically be less severe. Similarly, centre guardrails and lowered speed limits arguably sacrifice some degree of mobility for the sake of safety.

3.2. The Norwegian vision

When first introduced in a Norwegian context, through the National Plan for Transport (2002–2011), Vision Zero was not described in much detail. In fact, it was not even called Vision Zero, but merely "a vision". The fact that the vision was introduced as part of the national transport plan rather than, as in Sweden, being debated and adopted by the Parliament as a separate entity, might perhaps indicate a lower level of political commitment. The main focus in the Transport Plan was the ambition itself; the long term road safety work would be based on a vision that there should be no accidents with fatalities or permanent injuries (The formulation "permanent" was deliberately chosen over the somewhat vaguer "serious"). It was emphasized that the consequence would be a stronger focus on the most serious accidents, and that measures must be applied where the effects in terms of reducing the number and severity of accidents will be greatest.[1]

The plan goes on to specify a host of different measures that will be applied in order to improve road safety, not explicitly connecting them to the fundamental vision, but the vision is nevertheless presented as a basis. The plan also pointed out the need for a better scientific foundation for road safety work – better statistics, and improved knowledge about the effects of the various safety measures.

In the latest Norwegian National Plan for Transport (2006–2015), Vision Zero (now under the same name as in Sweden, although the official English translation is "zero casualties objective") was still presented as the basis for safety work in the transport sector, and it was now described in somewhat more specific terms.

> "The zero casualties objective entails that means of transport and the transport system must be designed in such a way that they promote correct conduct on the roads while as far as possible preventing fatal consequences of incorrect actions. Road users must also be influenced to adopt safety-conscious behaviour."

This seems to imply a somewhat stronger emphasis on adapting the road system in such a way as to prevent accidents, and also to regard the road system as not merely facilitating, but also actively shaping the interaction of road users. It might also hint at the possibilities for using new technologies, such as ISA (intelligent speed adaptation) or surveillance technologies for controlling the behaviour of road users. The plan then goes on to describe some of the measures that will be used in order to construct such a system:

> "The Government will increase its efforts to build safety into new and existing road systems. This includes increased state allocations for more rapid expansion of heavily trafficated [sic] trunk roads to four lanes and increased use of central guardrails on two and three-lane roads."

The use of centre guardrails on two and three-lane roads was first developed by the Swedish Road Administration, and is a safety measure that has been associated with Vision Zero from the beginning. It is seen as a prime example of how safety can become "built into" the road system, without having to construct costly four-lane highways. The centre guard rail does not necessarily prevent accidents, but it does in most cases prevent serious consequences. In addition to the technical measures, the plan also asserted that measures must be taken in order to improve road user behaviour, and again emphasised the importance of *rational* management of the road system.

> "Control activity on the roads will be strengthened in order to monitor compliance with statutes and regulations concerning road traffic. The Norwegian Public Roads Administration will make increased use of risk analyses and systematic revisions throughout the road traffic system. Stricter safety requirements will be introduced for commercial transport, particularly heavy transport."

On an assignment from the Department of Transport, a *National Plan of Action for Road Safety* was elaborated by the Norwegian Public Roads Administration, the National Police Directorate, the Directorate for Health and Social Welfare, and the Norwegian Council for Road Safety in which the practical implementation of Vision Zero is explained in greater detail. It is this plan that is referred to as the "Vision Zero paper", and the contributing parties are committed to follow up its intentions. In this document, the vision is described as resting on three pillars; ethics, science and responsibility. The ethical content of the vision is stated in the form of an axiom: the high number of fatalities in traffic is unacceptable, as human beings are "unique and irreplaceable". The other two pillars, however, are somewhat more specific. The basis in "science" refers mainly to the tolerance thresholds discussed above:

> "Human physical and mental capabilities are known and shall form a basis for road system design. Knowledge of our limited ability to master traffic and our tolerance in an accident shall be premises for chosen solutions and measures. The road system shall encourage safe road user behaviour and protect against fatal consequences of normal erroneous actions." (Nasjonal Handlingsplan for Trafikksikkerhet på veg 2006–2009).

Here we can perhaps observe a slight shift in emphasis from the earlier policy documents, which have been underlining science and rationality, but also in the sense of providing good data and basing decisions on systematic analyses. Still, the emphasis on what is "known" points to an idea of "managing" the risk levels in the road system in a rational and consistent manner.

The "responsibility" pillar refers to an increased emphasis on the authorities' obligation to provide safe roads. While the road users are still responsible for their own behaviour, the authorities

> "..are responsible for offering a road system adapted for as safe behaviour as possible and protect against fatal consequences of unconscious erroneous actions."

The "as possible" clause is of course somewhat ambiguous; does it mean as safe as is technically possible, or as safe as possible given existing financial constraints? Since financial resources will

[1] In practice, this will usually mean that safety measures are concentrated on roads with heavy traffic, as these are typically where most accidents take place. This might also imply that roads in densely populated areas should be prioritized over the – in for the most part sparsely populated Norway – thousands of kilometres of provincial roads serving rural areas.

Table 1
Road safety efforts in the NPRA in the period 1998–2007 in millions 2008 Norwegian kroner.

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Infrastructural safety improvements	346	271	249	326	412	412	409	488	510	475
Operation and maintenance work motivated by safety concerns	0	0	0	0	50	50	55	83	175	193
Safety measures geared towards road users	112	112	112	112	131	125	158	154	137	140
National road safety campaigns	5	5	5	5	5	20	20	20	25	25
Total	463	388	366	443	598	607	642	745	847	833

always be limited, there is reason to believe that the second interpretation is the correct one. Also, the consequences against which the road users are to be protected must be the result of *unconscious* erroneous actions, which implies that a considerable proportion of accidents – fatal or otherwise – do not fall under the scope of this part of the vision.[2] Still, there seems to be a certain development in Norwegian policy, in that more significance is attached to the improvement of roads and the responsibility of the authorities seems to have come more into focus. Whether this responsibility is to consist primarily in rendering roads fool-proof or influencing and monitoring road users so as to improve their conduct is not completely clear, however.

If we were to sum up the official Norwegian approach to Vision Zero, we could list the following elements:

- an ethical stance,
- increased focus on the most serious accidents, or their consequences,
- increased focus on monitoring the risk level in the road system, and, related to this, on the responsibility of authorities,
- emphasis on rationality and science as the basis for road safety policy.

To this list we might add that the vision is also associated with some of the specific technical measures developed in Sweden, especially the use of centre guard rails on two and three-lane roads.

An important difference between Norway and Sweden in relation to their respective visions is that in Sweden, the vision is associated with extremely ambitious numerical targets; the first was to reduce the numbers of fatalities in traffic by 50% between 1997 and 2007.[3] In Norway, politicians have consistently refused to tie the vision to such targets (sometimes on the basis of the argument that any such target is inherently immoral, as it would express complacency with a – still – high number of fatalities in traffic), although several NGOs have been in favour of setting such targets, arguing that it would increase accountability (Elvebakk and Steiro, 2007).

Another notable point where the two visions part is to do with responsibility: in Sweden, the responsibility is to lie with the "system designers", not the authorities. In this group has been included a range of actors such as professional transport companies and vehicle producers (the former, of course, being easier to bring into the equation in Sweden, where the car industry has long concentrated on safety as a competitive advantage).

In short, then, some of the most pronounced differences between the Norwegian and Swedish visions are:

(a) The Swedish vision seems to reflect a stronger commitment on the side of authorities, both through the politically sanctioned setting of numerical targets, and through a clearer emphasis on the responsibility of system designers – among them the relevant authorities.
(b) The Norwegian version has consistently emphasised the continuing responsibility of road users, something that is also expressed by explicitly limiting the responsibility of road authorities to preventing consequences of *unconscious* road user errors.
(c) The Norwegian version has explicitly focused on a broader range of road safety measures than the Swedish one, which has been accused of a narrow focus on road improvement. The Norwegian vision also includes a number of traditional, so-called road-user centred measures, which are presented as part of the overarching road safety regime. This last point might indicate that the Norwegian version has focused primarily on the ambition of Vision Zero, rather than on the means usually associated with it in Sweden.

4. Actors and positions

The above, then, presents Vision Zero in its Norwegian contexts as far as official documents are concerned. It was our contention, however, that such as vision also has an existence outside of these, and that how it fared within the practical sphere of the organizations working with issues of road safety or transport in general would have an important impact on its future status and significance.[4] The organizations and individuals interviewed in this study were all professionally involved with questions relating to road traffic, although to different degrees, and from different perspectives. With the exception of the politicians and the employees in the Norwegian Public Roads Authority, they all belonged to various non-governmental organizations (NGOs).

For the purposes of this article, the NGOs have been divided into four broad groups. The first group, which we will refer to as "the pragmatic group", was made up of actors from the public sector, They were representatives of the National Public Roads Administration, the Police (as represented by the Police Directorate and the National Mobile Police Service, the special unit responsible

[2] Elvik (1999a) maintains that 50% of all fatal accidents could be avoided if road users respected current road traffic legislation. This does not preclude, however, that some of the breaches of traffic legislation are unintentional.

[3] The target was not met. The target number for 2007 was 270, whereas the actual number turned out to be at least 473 fatalities (Expressen, 02.01.2008).

[4] Another possible approach to the issue could have been to uncover the actual consequences of adopting Vision Zero in Norway. This, however, is more complicated than it might appear, as the Vision is supposed to serve as basis for all road safety work, but is only specifically associated with concrete measures in the documents discussed above. It is, therefore, impossible to determine which measures are in fact caused by the adoption of the Vision, and which would have been there anyway. One possible, more measurable, effect would have been a marked increase in national road safety budgets, following the adoption of Vision Zero. The existing figures (Elvik, 2007, 1999b) cannot be compared directly, but they nevertheless do not seem to indicate a trend towards increasing overall government investments in road safety in the relevant period. But, then again, one of the ambitions of Vision Zero has been to include road safety perspectives in all phases of road construction, which might conceivably mean that money spent on road construction is now used in such a way as to increase safety, without being reflected in the budgets.

for traffic law enforcement), and the Norwegian Council for Road Safety (Trygg Trafikk)[5] Their positions relative to the vision were extremely central, because they were in fact the actors responsible for turning the vision into reality.

The second group is "the infrastructure improvement cluster". This group consisted of the largest Norwegian motorists' organisation (NAF), the Confederation for Norwegian Enterprise (NHO), an organisation working for the interests of people injured in road traffic (*Landsforeningen for trafikkskadde*), and the organization *Opplysningsrådet for Veitrafikken* (The information council for road traffic). The latter is an umbrella organization for various actors in the transport sector, such as transport businesses, motorists' organisations, road constructers, petrol station chains, insurance companies etc., which on its website lists as its main objectives the improvement of road standards, and reduction of car taxes.

As can probably be gleaned from the above list, these organisations have somewhat different agendas, and their reasons for promoting road improvement differ accordingly. However, in the course of our interviews we found that they were broadly in agreement on the question of road safety and the interpretation of Vision Zero. Their basic conviction was that road safety should be promoted through the construction of new and better roads, preferably four-lane motorways, and with the use of such measures as centre guard rails.

A third group we labelled "the ideology group". These organizations, though different in many other respects, shared the premise that Vision Zero was ideologically flawed from its inception, and should not be used as a basis for road safety work. In other words, they would not accept the "first principles" as axioms. The starting point was wrong, and should be adjusted. This group consisted of two environmental organisations "Fremtiden i våre hender" (The Future in our Hands) and "Norges naturvernforbund" (Friends of the Earth Norway/Norwegian Society for the Conservation of Nature); the national cyclists' organisation; and The Norwegian Motorcycle Union.

The final group consisted of actors from the political sphere. Interviews were carried out with the then Secretary of the Department of Transport, and questions concerning Vision Zero were also asked members of the Standing Committee on Transport and Communications in the Norwegian Parliament, in the course of interviews with a somewhat broader scope.

This partition of the actors into groups does not mean that all members of each group were in total agreement, or made use of the same arguments, but they were sufficiently similar to justify grouping them together for purposes of analysis. Some of the differences within groups will be discussed in more detail below.

5. Interpreting the vision

When asked what they perceived to be the main content of Vision Zero, the four groups displayed markedly different emphases. Starting with the actors closest to the day-to-day realization of the Vision, we found that in the Norwegian Public Roads Administration, the interpretations were reasonably homogeneous; the vision entails a stronger focus on the most serious accidents, that is, the accidents that lead to fatalities and permanent injury.

> "The Vision – to put as much road safety in our plans as possible. What projects should be chosen and what to prioritize. This is an ongoing discussion."
> "Vision Zero is about placing more focus on the most serious accidents- no one killed or permanently injured. This used to be more arbitrary."

This focus gives the work the Road Administration a specific new direction, and constitutes a practical reframing of their efforts. For instance, a new methodology has been developed so that the entire Norwegian road network has been characterized in terms of number of serious accidents that will statistically take place on each kilometre of the road (Ragnøy et al., 2002). Using this computer-based tool, the road administration has been able to identify roads – or stretches of road – where serious accidents are statistically overrepresented, and to consider what measures that can be taken in order to prevent these accidents from taking place in the future. The "top" 10% of dangerous road have been given special priority, and measures are taken to improve these specific high-risk road stretches.

Thus, the employees of the National Road Administration overall seemed to entertain a shared understanding of the contents of the vision. This interpretation might not encompass all aspects of the vision as described in official documents (it does not, for instance, reflect the emphasis on rational risk management and evidence-based decisions, nor does it touch on the question of responsibility, though that might perhaps be implied), but it was an interpretation that could be transformed into practical tasks, and give road safety work in the organization a new and specific direction. As such, the adoption of the vision was generally perceived to have improved their road safety work, and also to have given the safety personnel within the organisation a boost.[6] The focus on building safety into the roads meant that safety work could be integrated into the construction work in a more seamless manner. This is reinforced by a new law requiring road safety audits of all new roads. Since changes or adjustments late in projects tend to be very expensive, this is a strong incentive to integrate road safety expertise in earlier phases of projects. Arguably then, the reorientation was also reflected on the organizational level. There was, however, little mention of the vision's "pillars", though a couple of the informants associated the shift from number to severity of accidents with an ethical stance.

The Norwegian Council for Road Safety, however, expressed a somewhat more guarded attitude towards some aspects of the vision. Traditionally, their work has been focused on changing attitudes and influencing conduct related to traffic and road safety, with a special emphasis on training and educating children and teenagers. On this background, they had conceived Vision Zero in its Swedish variety as a possible threat to their traditional approach, fearing that too many resources would be allocated to technical safety measures and that this might lead to negligence of the kind of work they were doing. They had observed the vision's progress in Sweden, where they found that it had precipitated a

[5] The Norwegian Council for Road Safety (Trygg Trafikk) is an independent organization financed over the budgets of the National Road Administration. Therefore, it is perhaps debatable whether it belongs to the public sector. However, for the purposes of this article we have the fact that National Public Roads Administration, the police, the Norwegian Council for Road Safety and the Social- and Health Directorate are responsible for carrying out the transport plan, we believe it is appropriate to place them in this group.

[6] This impression seems to be supported by the NPRAs road safety budgets from the periods before and after the introduction of Vision Zero. The numbers in Table 1 are based on NPRA statistics. Changes in reporting systems render direct comparisons between years problematic, but the numbers probably nevertheless demonstrate a trend, and Table 1 shows a steady, if not dramatic, increase in resources allocated to road safety work within the organisation. Note that these statistics seems to suggest that unlike what has allegedly been the case in Sweden, the introduction of Vision Zero in Norway is actually followed by increased investments in "softer" road safety work within the NPRA. In addition to the measures listed in the table, the NPRA has also worked towards heightening road safety competence within the organisation: 60 % of the total the NPRA work force of 5000 have conducted a PC-based road safety course over the last few years, and the organisation also, among other things, offers a university level safety management course to their employees, which has so far been passed by 500 people.

major redistribution of resources from road user-centred efforts (such as training and traffic safety campaigns) to technical measures.[7]

> "What we saw in Sweden, among other things, was that traffic education and attitude building work was not prioritized. The principle was that the road system should be forgiving since road users always will make mistakes. The Norwegian Council for Road Safety was very concerned that the focus should not be restricted to technical measures on the roads."
> Norwegian Council for Road Safety

However, they found that the form that the vision had taken in Norway was more acceptable to them than they had initially feared, and that it had been a benign influence on the Road Administration, even though the relevance to their own work was considered rather limited.

The representatives for the police held a fundamentally positive view of Vision Zero, emphasizing the vision's role as a "pedagogical" tool, rather than as a realistic goal. The transition to the new platform was not considered to be a paradigm shift, but rather a rephrasing of the enduring goal of reducing the number of fatalities in road traffic. It had, however, led to a somewhat clearer direction for road safety work. The Police also strongly emphasised that whatever the vision might say about responsibilities in road traffic, the basic tenet must always be that the individual car user is obliged to always adapt to local conditions, as stated in Norwegian traffic legislation.

> "Changing weather and surface conditions cannot be controlled by the road administrators, and therefore there must be no doubt that the responsibility to adapt to local conditions is with the road user – otherwise, we're in trouble. The Road Traffic Act § 3: "A driver shall show consideration and be alert and cautious so that he does not cause damage and risk…" is the central rule. If everyone followed this scrupulously we wouldn't need anything else. You should also have roads that encourage road safety, but the responsibility lies with the road user."
> Ministry of Justice and the Police

The actors from the pragmatic group, then, held somewhat differing notions of what Vision Zero should be. While in the Road Administration it was given a straightforward and practical reading, the Council for Road Safety had initially considered it a competing paradigm for understanding risk in traffic, where the focus had moved from the people in the system to the infrastructure. This approach, they felt, had been mitigated as the vision took its form in Norway, and it was now felt to be generally acceptable, and a very useful tool within the NRA. The police, on the other hand, did not read it as an alternative, but as continuance of previous policies, and a sharpening of the focus. Vision Zero was perhaps a rephrasing rather than a reshaping of previous policies.

Summing up, one might observe that out of these three organizations, only the NPRA seemed to find that the vision involved something like a transformation of their traditional modes of working. For the others, there were minor adjustments, but the main implications seem to be a function of the new direction taken in the Road Administration; that the vision, or rather the planning work it had inspired, opened up for improved collaboration between the public bodies responsible for road safety. The thing they all have in common, however, is their focus on the specific implications that the vision could have on their own tasks, and how it could be integrated with existing practices and attitudes. They all displayed very limited interest in the ideological underpinnings of the visions, or matters of principles, beyond rejecting them in so far as they were at odds with their traditional methods and outlooks, and thus possibly limited its scope when compared to the Swedish vision.

The non-governmental organisations were – unlike the actors discussed above – not part of the group that has given the vision its Norwegian shape. Several of them did not work with road safety on a daily basis, but related to questions of road safety only insofar as they impinged on their respective fields. Therefore, they were frequently less aware of the form the vision had taken in Norway, or how it influenced decisions and policies. Perhaps as a consequence of this, both the "ideology group" and the "road improvement group" tended to a much greater extent to focus on the ambition of the vision, the "zero" of Vision Zero. This would take the form, for instance of commenting that it was "unrealistic", or, on the other side, that it should be a *target*, not a vision. We might see this as an emphasis on the "ethics" side of the vision.

> "Clearly, this is something that will never been achieved – realistically speaking there will probably never be zero fatalities in traffic. But it is called a "vision", not "target zero", so as a guiding star it is a positive thing".

5.1. The information council for road traffic

Another feature that distinguished the NGOs' interpretations from those of the public agencies was that the NGOs showed a greater interest in the question of responsibility allocation. This, however, took different forms in the two groups. The road improvement group wanted authorities to acknowledge their responsibility for accidents, preferably in legal terms.[8] In their view, road users had for too long been given the sole responsibility and blame for accidents, whereas the infrastructure had not been questioned. They frequently saw the fate of the vision to be linked to this question, as it would, from their perspective, lose much of its poignancy if such a tangible shift in responsibilities did not occur.

The organisations in the ideology group, on the other hand, tended to take the opposite view. Representing groups that were all – although for very different reason – somewhat sceptical towards treating car-users as default road users, they were eager to draw attention to the other actors in the transport system, and their needs. From this kind of perspective, using a car is usually – if not always – a personal choice, and thus a risk freely taken.[9] Making this choice involves rejecting other alternatives, and as other modes of transport are in many respects preferable from the point of view of society (for reasons of environmental effects, land use, and public health), promoting car use through making it more advantageous (safer) for the user is a value-laden decision, not an unequivocal good. It involves, in other words, offsetting the balance between modes of transport, and a balance that was, they would argue, already heavily skewed in favour of the car.

> "Vision Zero is the expression of a flawed starting point; "the use of cars *should* be safe" – and thus car use is taken for granted. Instead, one should start out from the fact that it is dangerous to move around in high speed inside two tons of steel. Starting with such an assumption can be risky. If you look at rail transport, this is a safer mode of transportation, and also more environmentally friendly and therefore a *better* form of transportation. From the point of view of social economics, it is important to ask whether roads are the right form of transportation."

[7] A similar claim is presented by one of the interviewees in Whitelegg and Haq (2006).

[8] This has been discussed in Sweden, but for the time being, turning the responsibilities of system designers into legal liability does not seem to be a realistic option (Fahlquist, 2006).

[9] The Swedish Government, on the other hand, based its arguments for Vision Zero on the assumption that car use is not freely chosen, but a 'mandatory' activity in modern societies (Johansson, 2006).

5.2. Future in our hands (FIVH)

The Norwegian Motorcycle Union also regarded the desire to render the road system "fool-proof" with a certain suspicion, if for somewhat different reasons. The organization opposed the underlying ideology – they considered the idea of a risk-free road system to be at odds with their ideal of personal freedom. They saw the road system as a sphere of voluntary risk-taking, and also perhaps as a space of *play*. The motorcycle is not primarily seen as a means of transport, but as a lifestyle choice, and as a source of pleasure. This attitude is perhaps somewhat more acceptable from motorcyclists than from car-users, as motorcyclists do not as a rule expose other road users to a very high-risk. On the other hand, the Norwegian Motorcycle Union realized that it was in their interest to cooperate with the Norwegian Road Administration, in order to take part in shaping the Norwegian vision, and had actively taken steps to prevent developments that they found undesirable. For instance, the Swedish Road Administration generally makes use of steel wire guard rails. Whereas these wires are safe for car-users and cheaper and easier to construct than concrete guardrails, they are suspected of posing higher risk for motorcyclists. The Motor Cycle Union had therefore argued strongly against them, and the Norwegian Road Administration ultimately limited their use.

The question of freedom was, however, not as central for the other organisations in the ideology group. They were frequently pointing out that the freedom of the car-users severely limits the freedom of the non-users (Some of these limitations are discussed in Sheller and Urry, 2003), and should therefore not be accepted as an unproblematic virtue. Therefore, they tended to support measures that limited the freedom of car-users, such as surveillance and even behaviour-modifying technologies like ISA. Part of the justification for this position was that the current form of the vision seemed to be based on the requirements of car-users.[10] Increased focus on pedestrians and cyclists could have led to a different set of priorities, while retaining the overall goal. Norwegian research (Elvik and Amundsen, 2000) claim that approximately 40% of all fatal accidents could be avoided if road users adapted to current speed limits, implying that speed enforcement strategies could be an important element of a Vision Zero regime.

The sceptical attitudes of these organizations can partly be traced to the vision as such, understood as the ambition, but also partly to the way this vision had been interpreted in practice – the focus on preventing the most serious injuries in the present transport system, rather than trying to make alternative (and frequently safer) transport forms more viable or convenient. There is nothing in the ethical requirements as such to preclude a more or less forced transition to other transport modes. Also local contingencies or traditions could explain the way Vision Zero is being practiced in Norway; the Norwegian Cyclists' complained that the Road Administration did not possess the competence necessary for facilitating cycling, or improving bicycle safety. The Road Administration had traditionally focussed on constructing roads primarily for cars, and their work with alternative users of the road system was seen as deficient. The cyclists complained that the only consequence that Vision Zero had had for them, was that there was now more talk of making bicycle helmets mandatory.

What the ideology group shared, then, was that they questioned the underlying principles of Vision Zero; they refused to buy into the first principles as a reasonable starting point, and rejected the very definition of the problem, if not necessarily in terms of the overall ambition. Interestingly, this might also indicate that they would not necessarily oppose the majority of the actual consequences of the vision, as described by the Public Roads Administration.

The informants from the political sphere did not, of course, work with road safety in anything like a hands-on fashion, although their professional focus was on transportation. Most of them were in favour of the vision in principle, as an ethical stance. However, most of them also referred to it as "unrealistic" or utopian. Their main focus, then, seemed to be on the "zero", as an ethical absolute, but absolute as an abstract ideal rather than as a specific attainable goal. Or, as it was expressed by a member of the Standing Committee on Transport and Communications;

> "As a vision, it is something of an obligation, but everyone knows that Vision Zero cannot be taken seriously".

In most cases, this also meant they did not see very strong connections between the vision and the ongoing work to improve road safety, in any other manner than as a reminder to strengthen the effort. They did not seem to associate the vision with changes in orientation, focus, methodology or strategies. None of the politicians mentioned the shift in focus from number of accidents to severity of accidents, for instance, or human toleration of physical trauma as a construction guideline. Instead, they talked about a general effort to improve road safety, along traditional lines:

> "The measures we are talking about here are on different levels; for instance constructing guard rails, speed controls, alcohol and drug controls, on all levels".

For the politicians, then, Vision Zero seemed to work primarily on the level of ethics and of rhetoric. The vision was an expression of a moral commitment, but, from their perspective, this did not translate directly into practical measures. One might even go as far as to saying that for the politicians, the most important aspect of Vision Zero seemed to be its name.

6. Discussion

As we have seen, the various actors interviewed in this study displayed different perspectives on and positions relative to Vision Zero. Most of the informants within the National Road Administration and the NGOs, however, agreed that the vision should have been the subject of more public discussion and debate. The result of this lack of discussion is that the actors have selected to relate to different aspects of the vision, and while they all raise legitimate concerns, given the vision's formulation and history, these concerns tend to connect to a limited part of the vision, and to connect on different levels of meaning and specificity. The politicians focus on the ethical aspects, without much concern for the day-to-day practices of doing road safety work. On the other extreme the pragmatic group of public road safety enforcers are almost exclusively concerned with how the vision impinges on their own practices, and might even be said to have reduced the scope of the vision in order to integrate their established practices and perspectives. In between, the various NGOs share an interest in the overarching questions of what the vision is supposed to mean: on the more practical level; does it really imply that nobody is to die in road traffic? And are the authorities in fact taking more responsibility, and if so, how is that supposed to be manifested in practice? More fundamentally, there is also the question of whether Vision Zero is indeed ethically right, or at least *better*, as presupposed in official documents.

[10] This is related to the focus on reducing *present* numbers of casualties. In the Norwegian road system, 149 car users were killed in 2005 (when the interviews were conducted), as opposed to only 30 pedestrians and 7 cyclists. But then again, one might argue that these numbers merely reflect the distribution of road users over transport modes, and that this distribution is partly a function of present form of the road system.

In the original formulation of Vision Zero there was no mention of how its realization might conflict with other concerns.[11] These questions, however, were repeatedly raised by the NGOs interviewed in this study, partly, obviously because they do not know how they are resolved in practice. The principles, or, in the Norwegian case, "pillars", of Vision Zero calls forth an image of a perfectly coherent system, where actions or measures are more or less directly deducted from the overarching system. In actual fact, however, as the interviews with the "pragmatic group" make clear, what we actually observe are situated responses informed by past organizational experiences.

While in the early days of Vision Zero, the Norwegian authorities seemed to understand the vision as an ideological stance that could be embraced by the entire population, and thus lead to safety improvements through its very existence, the present situation seems to indicate that the vision is no longer a national or popular project. Rather, it is a kind of technical guidance for the relevant authorities (especially the National Public Roads Administration), and as such not very interesting outside of the professional environments where it is to be realised. The vision seems to have gone through a process of narrowing, purification and technification, where non-technical actors are increasingly located on the outside of the vision, and issues that are seen as irrelevant for the pragmatic group are played down, or are allowed to co-exist with it in the form of free-floating values and statements. The lines connecting the various levels of the vision seem to be missing or undercommunicated, and certainly discussed to a very limited degree.

In the interpretations of the vision, it also seems as though what is primarily missing is the reasoning to connect the vision's various layers. The only concrete change explicitly connected to the vision in official documents is that next to continuing efforts to reduce the number of accidents, there will also be a "strong focus on measures that may reduce the most serious accidents" (*Trafikksikkerhet på Veg, 2002–2011*). On the other hand, as already mentioned, there have been very limited efforts made toward creating a dialogue in the greater society concerning the content and consequences of Vision Zero. In the absence of such a dialogue, Vision Zero seems to disintegrate into statements, strategies attitudes and practices that function on different levels. This does not mean that the vision could not have very beneficial effects on Norwegian road safety work[12], but the effects are likely to be confined to a limited group of people, and their perspectives and concerns are likely – for better or for worse – to be the only ones that are taken into consideration.

Rosencrantz et al. (2007) argue that (the Swedish) Vision Zero is rational as an action-guiding goal, and that part of its rationality consists in its ability to inspire those working with the vision. Thus the vision's value is seen also as to reside in its effect on the individuals working with it. In the light of this, we might suggest that in Norway, Vision Zero inspires various, only partly overlapping and sometimes conflicting rationalities. Within the road administration, for instance, it seems to work perfectly well based on such criteria, but until there is a shared interpretation in place, this is not likely to be the overall effect, as conflicting interpretations might lead to conflicting actions, or, at the very least, to weakened collaborative efforts.

Does this lack of one shared understanding of Vision Zero, and the modifications and alteration relative to the original mean that its introduction in Norway is a failure? This is not necessarily the case. Even if the changes it produces are local, and to some degree contingent on individuals, traditions and circumstances, this does not mean that its overall effects are not positive. Several studies in the science and technology studies tradition, among them Akrich (1992) and de Laet and Mol (2000), find that transfer of knowledge and technologies is never as straightforward as imagined, and that local conditions and contingencies are likely to transform the object as well as related practices. Transfer always involves translation and transformation. Similarly, Singleton (1998) shows that incoherence and inconsistencies do not necessarily undermine a project, but may indeed be part of what holds it together. These writers conclude that the criteria deeming such a transfer a success should not be that the original content has been retained, or that there are no contradiction to be found, but that the information, technology or practice works in its new setting. And, as we have found, most of the informants agreed that the adoption of the vision had led to notable improvement and enthusiasm for road safety work within the road administration, and that it had led to improved co-operation between the various public actors within the field. This might not be quite such as an ambitious result as the vision's name suggests, but it might still be an important achievement.

7. Conclusions

Given that many different interpretations of Vision Zero co-exist in Norwegian society, it is unlikely that the vision has served as a basis for co-ordinated action that involves all relevant actors, as was originally part of the idea behind the vision as presented by the Ministry of Communications in 2001. (Road Safety in Norway. Strategy 2002–2011). For such a Vision Zero to become reality, more people and groups would probably need to be actively involved in its process of implementation. Otherwise conflicting interpretations are likely to persist, and the fact that rational opposition does not seem to be taken into account may even lead to resistance to change (Burke, 2002). The fact that the term means different things to different people also reveals a communication problem, even within the relatively small group working with transport in Norwegian society.

The absence of a public discourse around Vision Zero means that so far, it has been open for different stakeholders' interpretations. This study can therefore be seen to confirm Langeland's (2002) finding that Vision Zero can be viewed from many different sides and brings with it a plethora of different associations. We might sum this up in saying that the vision possesses considerable interpretative flexibility (Bijker, 1987). Given that the relevant authorities have made limited efforts towards constructing a shared vision, this might be interpreted as a *desired* flexibility.[13]

As several of the members in the "ideology group" pointed out, it would have been perfectly possible to choose a different vision, which included aspects such as general public health and longevity, environmental concerns, and so on. Instead, the existing vision does in a sense choose to close the system of (car-based) transport in its present form, and leave other interests and concerns on the outside. However, we might observe that the example of the Nor-

[11] A similar observation in the Swedish context is made by H.E. Petterson as reported by Whitelegg and Haq (2006).

[12] In 2001, when Vision Zero was introduced, 274 people were killed on Norwegian roads. In 2007, the number was 234. This means that Norway has actually seen a more pronounced relative reduction of fatalities after 2001 than Sweden has after 1997. (If compared to the years before 2001, the reduction is larger, as the average annual number of fatalities between 1996 and 2000 was 311 (Statistics Norway).) As many of the road safety measures associated with Vision Zero are intended to work in the longer term, however, and many other factors influence fatality numbers in road traffic, these differences cannot be read as indications that one approach is superior to the other.

[13] Several of the informants also suggested that the relative official paucity when it came to the vision could be an intentional strategy, as knowledge about such a vision might tempt individual road users to act irresponsibly.

wegian Motorcycle Union illustrates that there is room for influencing and changing the practical strategies of the Public Roads Administration, when the actors engage in a prolonged dialogue. There is no indication, however, that a similar approach would work on the level of ideological opposition or when it came to questions that point beyond the fundamental framework already in place. In this sense, the NGOs may be right in simply discarding the vision as an ideological position, and concentrate their efforts on concrete ongoing work and discussions instead.

In the period after this study was carried out, a new proposal[14] for National Plan for Transport for the period 2010–1019 has been made public. In this document, the National Road Administration suggests to set a target number of fatalities and serious injuries in road traffic that implies a reduction by a third by 2020. Vision Zero is also more explicitly linked to certain specific strategies, such as gearing measures towards accident types that are associated with severe outcomes, and focussing on high-risk groups and safety-enhancing information technologies. Simultaneously, however, the vision appears to have become slightly watered down, as it is admitted that "in practice" safety is measured against other concerns, an admission that probably implies that the Norwegian Public Roads Administration would no longer subscribe to the tenet that safety should never be traded for mobility.[15] This new document seems to indicate, then, that the public roads administration has, as this article, concluded that Vision Zero is not likely to be able to function as a complete and all-encompassing framework for road safety work that transforms the model from top to bottom. However, as the more concrete strategies developed bear witness to, this does not necessarily render the vision entirely impotent.

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[14] The proposal is drafted by the public agencies in charge of the various transport sectors (air, railway, sea, road), and is then subject to a hearing, where interested parties are invited to comment on the proposal. The final version is written by the Department of Communication, and then passed by parliament, where it may also undergo modifications. The existing proposal is therefore unlikely to be identical to the final version, but it may still serve as an illustration of the processes going on among the relevant authorities.

[15] In one sense, such a move may also make the vision more coherent. Elvik (1999) has argued that, if taken seriously, Vision Zero may lead to increased mortality in society, due to the amount of resources allocated to road safety measures rather than other sectors in society.