

Abstract

In October 1997 the Swedish Parliament adopted a new road safety policy – Vision Zero. Vision Zero entails a fundamentally new division of responsibility for traffic safety between road users and the so called system designers such as road administrations, municipalities, and professional transport companies among others. In this study the implementation of a formal responsibility for system designers to prevent serious injuries in road traffic between 1997 and 2009 is evaluated. Two main research questions have guided this study namely: How has the legislative process of formalizing the responsibility of system designers progressed? and What important factors might explain the implementation outcome? The main sources of information for this study were official key documents. Based on a goal attainment model, an important conclusion is that the goal to legally formalize a responsibility has only been minimally realized and therefore this might be an example of a classic implementation failure. In order to explain and discuss this low level of achievement a process evaluation approach has also been used. Built on this process evaluation approach, it can be questioned if this is an example of implementation failure after all.

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Nyckelord: Nollvisionen, Implementering, Vägtrafiksäkerhet, Lagstiftning, Processutvärdering

Nollvisionen – Hur en policy innovation möter motstånd men kanske vinner till slut

Oktober 1997 antog den svenska riksdagen en ny trafiksäkerhetspolicy, Nollvisionen. Nollvisionen innebär bland annat de s.k. systemutformarna, det vill säga väghållare, fordonstillverkar, kommuner, transportföretag med flera har ett principiellt ansvar för att förebygga allvarliga trafikskador till följd av vägtrafikolyckor. I denna studie utvärderas processen under perioden 1997-2009 att omvandla detta ställningstagande om ansvar till ett formellt, juridiskt, ansvar. Två huvudsakliga forskningsfrågeställningar har varit vägledande nämligen; hur har lagstiftningsprocessen utvecklats och vilka faktorer kan förklara utfallet? Studien baseras i första hand från data hämtat ur centrala officiella dokument framtagna i policyprocessen. En viktig slutsats är att det formella juridiska ansvaret för systemutformarna att förebygga trafikskador har endast till en liten del införts i svensk lagstiftning. Det bristande införandet av ett formella juridiska ansvar kan därför betraktas som ett exempel på ett klassigt implementeringsmisslyckande. I studien diskuteras och analyseras också fyra olika faktorer som kan förklara utfallet nämligen; insatsens karaktär och komplexitet, intressekonflikter, andra offentliga insatser, processer och insatser som sker utanför den studerade policyprocessen. Utifrån en sådan processorienterad utvärdering kan slutsatsen att detta är ett implementeringsmisslyckande ifrågasättas. Att gå från ett principiellt ställningstagande till en formell reglering tycks vara en långsiktig process och det kan vara för tidigt att kategoriskt dra slutsatsen att detta är ett misslyckande. Dessutom en formell lagstiftning är inte det enda styrmedlet som statsmakterna har till sitt förfogande för att säkerställa en hög grad av ansvarstagande hos systemutformarna vilket det facto är det ultimata målet enligt Nollvisionen.

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Introduction

According to Vedung (1997: 3), evaluation can be defined as “careful retrospective assessment of the merit, worth, and value of administration, output, and outcome of government interventions, which is intended to play a role in future, practical action situations”. According to this definition, evaluations are retrospective assessments and, as well as focusing on data on output, outcomes and the general intervention impact, can also focus on a public process (so-called process evaluation).

On 9 October 1997, the Swedish parliament adopted Vision Zero as a new long-term goal and direction for road safety work (Swedish Government, 1997). According to this decision, the long-term goal of road safety is that no one should be killed or seriously injured as a result of traffic accidents in the road transport system (Vision Zero); also, the road transport system’s design and function should be adapted to the requirements of Vision Zero (Swedish Parliament, 1997).

In a previous study (Belin et al., 2011) the Vision Zero policy was reconstructed theoretically, and it was shown that it differs from more traditional road safety policy in several respects, but in particular in its perspective on responsibility for safety. Vision Zero entails a fundamentally new division of responsibility for traffic safety between road users and the so called “system designers”.

According to Fahlquist (2006), the decision entails, in the first place, that system designers have a new responsibility, in principle, for preventing serious injuries in road traffic due to accidents. This acts as a complement to the earlier explicitly stated safety liability of road users. A new policy, based on a different principle for the taking of responsibility, but in line with the needs pointed to by Larsson, Dekkear and colleagues (2010), has therefore been formulated.

After a policy has been formulated, interest shifts to implementation of that policy. According to Lane (1983), it is important to distinguish between intentions and what can be implemented in practice. Realizing policy intentions in a complex world is difficult, as experiences of evaluation and implementation research have shown (Sabatier and Mazmanian, 1979; Vedung, 1997). It has even been asserted that implementation research is the “misery research” of the social sciences (Rothstein, 2000).

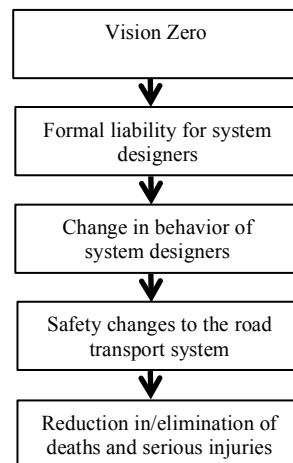
It has been fourteen years since the Swedish government and parliament expressed their ambition for system designers to have fundamental safety responsibility, and this study examines the outcome of the process involved in regulating system designers’ formal responsibility for safety in accordance with Vision Zero in the period between 1997-2009. The paper has two specific objectives. The first is to examine experiences of the implementation and outcome of the Vision Zero principle of system designers taking responsibility for safety. The second is to examine key factors that explain the outcome in relation to the first objective. The specific research questions addressed by the study are: a) How has the legislative process of formalizing the responsibility of system designers

progressed? b) What important factors might explain the implementation outcome?

Process evaluation and implementation theory

The process of implementing a specific policy instrument, in this case a regulation, generally operates in accordance with some kind of theory (Bemelmans-Videc et al., 1998, Vedung, 1997). Although the theory may be implicit or un-systematic, it provides general guidance for the formulation of the policy and clarifies how the policy is supposed to work (Chen, 1990). In this case, the theory underlying the policy can be described according to the following steps (see also Figure 1): Vision Zero stipulates a system design responsibility; this intention is transformed into a formal regulation; this regulation affects the behavior of system designers; and this behavior influences the road transport system's safety standard which finally reduces the number of fatalities and injuries due to road traffic crashes. In this study, the focus is on the first step of this implementation process, namely the process of transforming an intention into a formal regulation.

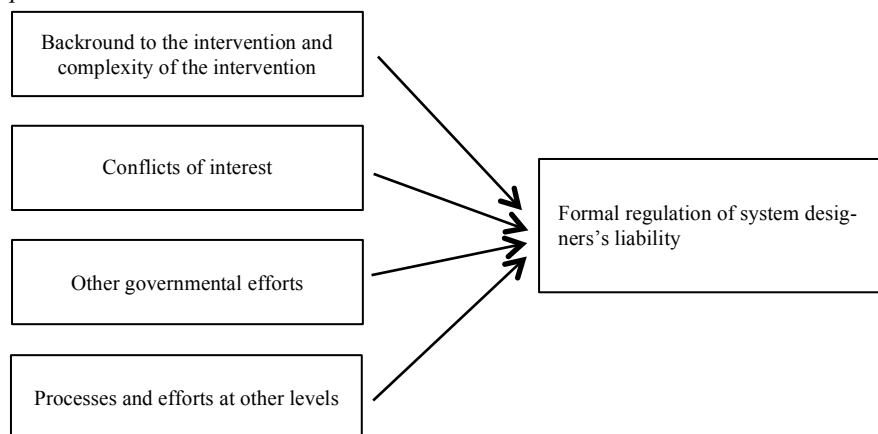
Figure 1. Policy theory: Vision Zero and the implementation of formal liability for safety in the road transport sector.



A process evaluation may also have an explanatory ambition, and therefore will include explanations of why an intervention has succeeded or failed. According to Vedung (1997), there are several main explanatory factors in a process evaluation for example; historical background to the intervention, intervention design, the implementation itself, addressee response, the interventions of government and government agencies, issue networks, and other environments. In this study, particular attention has been paid to four main explanatory

factors in relation to designers' responsibilities which are of interest during the step where intention is transformed into formal regulation: the background and complexity of the intervention, conflicts of interest, other government efforts, and processes and efforts at other levels (see Figure 2). The model is based on previous experiences of implementation and evaluation research (Wilson, 1980; Winter, 1898; Vedung, 1997).

Figure 2. A theory-based explanatory model of the outcome of the legislative process



Background and complexity of the intervention

The opportunities to effect a policy change are dependent on its context and complexity (Winter, 1989; Vedung, 1997). If, for example, the policy process surrounding the regulation of system designers' liability is characterized by political disunity, the chances of achieving such regulation are diminished. Also, if legislative work is complex by nature, the possibilities of producing legislation are smaller.

Conflicts of interest

According to Wilson (1980), successful reform in the legislative field requires support from a broad coalition. The drivers of the reform, in this case regarding the issue of legislating on responsibility in the road-safety arena, must have arguments in support of the need for legislation. The arguments may be good or bad, and change over time, but they must be convincing. According to Wilson, it is fruitful to analyze legislative measures on the basis of their perceived spread in terms of benefits and costs. The benefits and costs can be both monetary and non-monetary, and perceptions of their value and the likelihood that they will be realized can change. The distributions of both costs and benefits, and their magnitudes, are important in the political process, and create incentives for various stakeholders to act. Perceptions of the distributions of benefits and costs as fair or unfair provide a basis for opportunities to find convincing arguments in sup-

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port of a reform. When legislation is perceived to give general benefits at a cost to be born mainly by a few stakeholders, we enter the realm of entrepreneurial politics. This is a common situation in both environmental and road-safety politics, where a concrete example is provided by the adoption of the Auto Safety Act 1966 in the United States (Wilson, 1980).

Other government efforts

In this study we have restricted the safety responsibility of system designers to that which is encompassed by formal legal liability. The Swedish state, alone or jointly with others can, however, make other efforts to influence system designers' safety responsibilities (Bemelmans-Videc et al., 1998). According to Vedung (1997) such actions influence the application of other instruments of control.

Processes and efforts at other levels

Other policy processes in society may also influence opportunities for successful implementation. Efforts in other sectors of society and at other levels of decision-making (e.g. the European Union) have links, and are important, beyond their own direct purposes (Vedung and Klefbom, 2002).

Methods and materials

The implementation process in terms of legislation in Sweden can be described as linear and structured. It involves the following stages: a legislative matter is initiated; the government decides to appoint a commission of inquiry; the commission's report is referred to many different actors (stakeholders) in society. Based on the inquiry's proposals and respondents' views, a legislative referral is made, which is then reviewed by the Council on Legislation; on the basis of the views of the Council, a final government proposal is made, which is treated in a parliamentary committee before being put before parliament for decision. Finally, the government enters the legislation that has been decided upon into the Swedish Code of Statutes (Government Office of Sweden, 2011).

This implementation process leaves many traces, in the form of inquiry directives, referrals, proposals and bills, reports of interested parties, and draft statutory texts. In this study, we have followed this comprehensive process in depth in order to identify and analyse key documents dealing with the ambition of regulating the responsibility of system designers. We have chosen to limit the materials and period of analysis to the time from when the preparatory work for parliamentary decision on Vision Zero began, in October 1997, up to 2009, on the ground that 2010 was the year in which what was then the Swedish Road Administration was closed down. During that period the Road Administration was the state's primary representative for road safety. To identify key documents, the parliamentary database, at riksdagen.se, was scanned – using keywords such as Liability, Road Traffic, Vision Zero, and Traffic Safety. The search identified a number of documents that have a bearing on the legislative

process surrounding safety liability for system designers. On the basis of this material it has been possible to map and reconstruct the legislative process.

The target group that was the subject of legislation consists of system designers of the road transport system. System designer is a diffuse concept but, according to the government, it refers to any of “the public and private agencies responsible for the design and operation of various parts of the road transport system, such as roads, vehicles and transport services and, those responsible for various support systems for safe road traffic, such as regulations, education, information, surveillance, rescue, care and rehabilitation” (Swedish Government, 1997: 17).

State and municipal road-maintenance authorities, vehicle manufacturers, driving schools, transport companies and healthcare providers are among the other stakeholders who are definitely covered by the definition of system designer. In fact, there are not very many actors in society who are excluded by that definition apart from individual road users.

Reconstruction of the legislative process with regard to formal liability for safety

The policy of system designers' responsibility

The starting point of the legislative process was that the Swedish parliament, on 9 October 1997, decided upon the focus and the new long-term goal of safety in road traffic:

The goal is that no one should be killed or seriously injured as a result of accidents on the roads. Road transport system design and function should be adapted to the requirements of Vision Zero (Swedish Parliament, 1997).

In the document (Swedish Government, 1997) that describe Vision Zero and the new direction for road safety work in greater detail, it appears that the government was not satisfied with society's distribution of responsibilities to create safe road traffic. According to the government, Vision Zero entailed a new division of responsibilities for safety in the road transport system. The previously dominant principle, that almost the entire responsibility rested on the individual road user was reflected in the Traffic Ordinance, Chapter 2, § 1, was deeply unsatisfactory, and no similar explicit and far-reaching obligation to take action rested on the people who design different parts of the road transport system.

In order to avoid traffic accidents, a road user must observe the care and take the caution required by the circumstances (SFS 1998:1276: 7).

This one-sided distribution of responsibility was, according to the government, not constructive when the point of departure was, ultimately, that no one should be killed or seriously injured. Therefore, the government considered that the responsibility for road safety should be shared between traffic users and system designers, according to the principle that system designers should always

have ultimate responsibility for the road transport system's design, maintenance and use, and thereby be liable for the level of safety in the entire system.

Road users should, as previously indicated, be under an obligation to show respect, good judgment and responsibility in traffic and follow traffic rules. But, if users do not take their share of responsibility, e.g. because of a lack of knowledge, acceptance or ability, or if injuries arise or are likely to arise for other reasons, the government considered that system designers must take further measures to counteract people being killed or seriously injured. Thus, the government envisaged a chain of responsibility that both began and ended with the system designers.

The government was aware that this was a major change in perspective on the issue, and stated that there was a need to clarify and specify the liability of system designers. The government, therefore, even in its decision on Vision Zero, gave notification of the setting-up of a commission of inquiry. The government obtained the support of parliament, which shared the government's perspective on shared responsibility in principle, and also felt there was a need for system designers' liability to be examined and specified.

The process of implementation of a formal responsibility

In a decision on July 1 1999, the government appointed a special investigator to carry out a broad review of system designers' responsibility for safe road traffic. In April 2000 the inquiry presented its final report (Trafikansvarsutredningen, 2000). According to the inquiry, substantial shortcomings in legislation in the road-traffic arena were found. Despite a large number of laws and statutes, the inquiry considered that system designers' responsibility for the prevention of traffic injuries was in principle unregulated. This was particularly clear in comparison with other modes of transport and working life, where the responsibility for safety was much more developed. The Inquiry into Responsibility in Traffic proposed therefore that the parliament's decision on Vision Zero in principle and system designers' responsibility for safety on the roads should be regulated by law.

The Inquiry's proposal for a new law on traffic responsibility was never implemented, but the government decided to go ahead at least with the proposal to establish a road inspectorate. Accordingly, the government appointed a commission with the task of performing a detailed analysis of the preconditions for such reform. In June 2002, the Inquiry into a Road Traffic Inspectorate presented its findings and proposals (Vägtrafikinspektionsutredningen, 2002). According to the commission, the decision on Vision Zero entailed that the professionals who design and manage the road-transport system have a responsibility for safety, although not one regulated by law. According to the commission the government should take the initiative to clarify the legal safety liability of system designers.

In autumn 2004 the parliament forced the government, against its will, to appoint a commission of inquiry to investigate how a single, all-embracing traffic inspectorate could be organized. Thus, in October 2005, an investigation was embarked upon in order to explore how an intermodal traffic organization for

inspection operations related to the surveillance of safety and protection in all types of transport could be set up. The inquiry was also to examine the needs and preconditions for a modified or new body of regulations for the monitoring of system designers in road traffic, and also the safety gains that might be achieved by such regulation. If the need for legislation could be established, a proposal for how such legislation should be designed was to be made. In its report (*Trafikinspektionsutredningen, 2006*), the Inquiry into a Traffic Inspectorate affirmed that the distribution of responsibilities that parliament had announced in Vision Zero had not yet been realized. Responsibility still rested almost entirely on the individual road user.

The Inquiry made the assessment that, although it would be desirable, it was not possible in one go to impose a general liability on all those who might be embraced by the concept of system designer. Instead, the report advocated a gradual build-up of a system of responsibility, starting with the designation of an important and clearly demarcated circle of system designers. Then, it would be possible to continue to other system designers, and finally to those responsible for various support systems. The Inquiry therefore suggested, as a first step, that a general safety requirement be introduced into existing legislation on national road administration, i.e. for both the construction and operation of public roads. The safety requirement would mean that roads must be constructed and operated so that damage resulting from their utilization would be prevented, and that inspection to ensure that the roads met safety requirements would be exercised by the proposed inspectorate.

The reform process to establish a comprehensive traffic inspectorate proceeded and on 19 July 2007 the government decided to continue the reform process by preparing for and implementing the formation of a traffic-inspection organization. This also included the submission of proposals for what this agency would be responsible for in the event that traffic-safety liability for those who design the road transport system was implemented. The inquiry was particularly to illuminate what such liability would entail for the economic and physical planning process for road investments, and for state, municipal and private road administration. The inquiry should also recognize the need for, and propose the necessary, statutory amendments. The Inquiry into a Transport Agency (*Transportstyrelsutredningen, 2008*) also noted that, in the fields of rail and aviation, there was legislation that treated the responsibility of primary system designers and information together, but that this was lacking in the road-transport arena.

To increase the chances of effective and gradual attainment of the transport policy objective – particularly the sub-goal concerning safety in traffic – and to give Vision Zero a clearer position in the regulations, the Inquiry considered that such legislation was justified. Since it was outside the remit of the Inquiry, it was considered that there was no opportunity generally to investigate the issue of system designers' liability, but it was recommended that this should be done in another context. Accordingly, within the frame of the investigation, the issue was restricted to greater responsibility and accountability for road safety in road-traffic administration in line with the earlier Inquiry into a Traffic Inspectorate.

The Inquiry also considered that such responsibility should cover all roads and streets and thereby also the local municipalities. In accordance with the proposals of the Inquiry into a Traffic Agency, the government decided, on 1 January 2009, to establish a new authority in the transport sector, i.e. the Swedish Transport Agency (Swedish Government, 2008: 20). The Agency was formed by merging the activities of several authorities: the Railway Board, the Civil Aviation Authority, the Maritime Administration and parts of the County Administration Board and the Road Administration. This also meant the end of the Road Traffic Inspectorate as an organizational unit within the Swedish Road Administration. However, no regulation of system designers' liability for the safety of road traffic in line with the Inquiry's proposals was implemented.

Incorporation by the Swedish Parliament of EU Directive 2008/96/EC, from 19 November 2008, into road safety management – a process outside Sweden's state inquiry system

Partly in parallel with the Swedish process – of developing a law on liability in the road-traffic arena and the setting-up of a new all-embracing transport agency – the EU had been working on a directive concerning road safety management within the EU. The Directive covered only the common Trans European Network (TEN), but the member states had been exhorted to include other roads. The TEN road network represents a relatively small proportion of the total national road network in Sweden, about 20%, but 62% of traffic is on that network. On 19 November 2008, the EU Directive was adopted in the European Parliament, and the new Swedish authority, the Transport Agency, was in January 2009, commissioned to investigate how the Directive could be suitably implemented in Swedish law. The task included considering the draft liability legislation for road transport that the Inquiry into a Transport Agency had previously presented.

The Transport Agency proposed liability legislation that covered all road administrators, state, municipal or private. The respondents who commented on the scope of the proposed Act supported a majority proposal to expand its area of application beyond that stipulated in the Directive. The government was basically in favor of the respondents' desire to expand the Directive's area of application and took this as evidence that the prospects of achieving Vision Zero were good. However, the government considered that other aspects must be taken into account in adopting a stance on the scope of the Act.

The government took note of what the Swedish Road Administration in its capacity as the largest road manager in Sweden, had pointed out in its consultation response, namely that the estimates of the costs were too vague to be able to adopt a stance on extension beyond the TEN road network. According to the government, an extension of the Directive's application might mean that all road authorities – state, municipal and private – would incur excessive costs. In addition, the government was generally reluctant further to increase the regulatory burden in society. An application of law to the extent suggested in the report would, in the government's view, not be in line with the ambition to reduce the

regulatory burden. Thus, the government considered that the uncertainty surrounding the proposal's impacts in the forms of increased costs and the risk that the proposal would lead to more unnecessary regulations and bureaucracy, spoke against the implementation of the Directive to a greater extent than the Directive actually required.

According to the government, however, this stance should not be taken to mean that road safety is valued less on roads and streets that are not part of the TEN road network. In the contrary, the government's road safety ambition, according to the government itself, was far-reaching and comprehensive. The government intended closely to monitor and evaluate the results of application of the law and to form a clearer idea of what the costs of enlargement would mean for road administrators.

Thus, a new Road Safety Act (SFS 2010:1362) was adopted which among other things, in § 9 concerning the TEN road network, stipulates the liabilities of the state road authorities:

The road administrator shall systematically and continuously take the measures necessary to prevent serious injuries as a consequence of use of the roads. Measures to tackle the immediate risk of such injuries shall be taken first.

An ordinance on environmental and safety requirements for government agencies' cars and car travel is decided upon by the government – state authorities are regulated in part

The concept of system designer also embraces any actor who procures vehicles to be used at work, and also anyone who procures transport services. The state authorities are not an insignificant consumer on the automotive and transportation markets, and to increase the proportion of environmentally sound and road-worthy vehicles, the government considered that the state should take precedence in the transition. Accordingly, the government decided upon a state ordinance (SFS 2009:1), which meant that, from 1 February 2009, state authorities could only buy cars and commission car travel that met high environmental and safety requirements. Among other things, cars that an agency purchases or leases should be fitted with alcohol interlocks to the greatest extent possible.

Summary analysis of the outcome

The process of reformulating the Vision Zero principle of safety liability for system designers has been a long journey and is probably not yet complete. Table 1 summarizes the most important steps in the process. If the ambition is formally to stipulate legal responsibility or liability for safety system designers, the result achieved has been meager. By the end of the period 1997-2009, the state road administration had obtained clearly articulated legal safety responsibility for the well-demarcated TEN road network, and also with regard to state agencies' choices of cars and car travel on the basis of environmental and safety requirements.

Table 1. The legislative process concerning the responsibility of system designers, 1997-2009.

Year	What?	Who?
1997	Launching of a new perspective on responsibility and liability.	Government/Parliament
2000	Inquiry proposing new legislation to regulate the safety liability of all system designers.	The Swedish Commission of Inquiry into Responsibility in Traffic, SOU 2000:43
2002	Prominence given to the need to regulate the liability of system designers.	The Swedish Commission of Inquiry into a Road Traffic Inspectorate, SOU 2002:65
2006	Proposal for initiating the steady build-up of a liability system, starting with an important and, at the same time, clearly demarcated circle of system designers. Thereafter, the opportunity to continue with other system designers, and finally with those with responsibility for various support systems. Proposal, therefore, by the Inquiry to introduce a general safety requirement for national road administration.	The Swedish Commission of Inquiry into a Traffic Inspectorate, SOU 2007:4
2008	Proposal for the regulation of all road administrators.	The Swedish Commission of Inquiry into a Transport Agency, SOU 2008:44
2009	Regulation of state road administrators' liability for safety on the trans-European road network (TEN).	EUDirective/Government/Parliament
2009	Regulation of government agencies' vehicles and road transport on the basis of environmental and safety requirements.	Government

Possible explanations for the meager outcome

It can be stated that, in relation to the ambition formally to regulate all system designers' safety responsibilities in the road-transport arena, there was a low level of delivery. The following section discusses various possible explanations for this state of affairs.

The background and complexity of the intervention

The opportunities to effect a policy change are dependent on its direction and size (Winter, 1989; Vedung, 1997). Regulating the safety liability of system designers is definitely both a substantial change relative to prevailing law and a major reform, which in principle covers everyone except the individual road user. At the same time, the change is ambiguous in the sense that it is difficult to get a clear idea of who are the system designers and what should be regulated. The difficulty in legally identifying system designers and who is to be regulated is something that attracted the attention of the various commissions of inquiry during 1997-2009. Therefore, various technical legal solutions have been proposed to reduce complexity and increase transparency in everything from the general frame laws to legislation that is confined to individual well-defined sys-

tem designers (e.g. road administrators). Stepwise legislative reform has been presented as a suitable strategy for action.

Vision Zero and its direction were decided upon with considerable political unanimity (Belin, Tillgren et al., 2010). Despite this, the fact cannot be ignored that the model of placing, in principle, almost the entire responsibility for safety on the individual road user, is strongly rooted in both national and international law. A good example is the Vienna Convention, which is administered by the United Nation Economic Commission for Europe (United Nations, 1977). The question, therefore, is whether the legislative process must also be anchored in international forums. At present, Sweden seems to oppose such a process. In the preparatory work on safety in the case of the TEN road network, Sweden opposed the introduction of the EU Directive on safety in road management (Transportstyrelseutredningen, 2008).

The background to legislation and its complexity may therefore have had an inhibiting effect on the opportunity formally to regulate the safety responsibility of system designers.

Conflicts of interest

Let us link to Wilson’s (1980) interest configuration theory. Perceptions of the costs and benefits of legislating on system designers’ responsibility or liability can be distributed or concentrated. When both costs and benefits are distributed, we have a majority position; that is, many in society are expected to gain, and many others are expected to be involved in making the necessary payments. Vision Zero’s principle of a general system designers’ liability seems to fit well with such a definition (see Figure 3). Such a situation requires a broad political consensus that it is reasonable and legitimate to regulate all conceivable system designers’ safety responsibilities for the benefit of all road users. During the legislative process, however, it seemed that the concept of system designer was narrowed down more and more, so that it related, in the first instance, just to the state, the municipalities, and individual road administrators. In such a case, we have moved to a position where the benefits are distributed to all road users, while the costs are concentrated among road administrators (see Figure 3).

Figure 3. Wilson’s configuration of interests as applied to the liability of system designers according to Vision Zero

		Costs	
		Concentrated	Distributed
Benefits	Concentrated		
	Distributed	Road administration liability	General system designer, according to Vision Zero

The political situation has thus moved from a majoritarian one to an entrepreneurial one. Given the incentives to resist by those who are perceived to bear the high costs and the low level of organization of all the ill-defined winners, along with the many opportunities offered by the political system for the declaration of opposition, it would, according to Wilson (1980), take almost a miracle for the reform to be achieved. That is, dispersed benefits and concentrated costs cannot find their way through the political system. According to Wilson, in such a context, there is a need for skilled entrepreneurs, who can mobilize latent public support, e.g. by revealing scandals or capitalizing on a crisis, to expose the opponents of legislation to public scrutiny. The presence of such external circumstances, or of such occasions, is particularly important when the ones to be regulated are already very well branded.

During 1998, before the formal legislative process began, there was definitely one such entrepreneurial occasion. The actor who then acted as a kind of road safety entrepreneur was Brittmarie Utterström, then the chief executive of the voluntary organization, the National Society for Road Safety (NTF). Utterström directed hard criticism at the Swedish Road Administration for an accident in which two men lost their lives, and the NTF considered that the Road Administration had been guilty of causing another's death (Tidningars Telegrambyrå (TT), 1998). The NTF was well supported by the media, especially by the *Expressen* journalist, Håkan Matson, who wrote a number of highly critical articles, throughout 1998 and 1999, about the Road Administration and the government's record in the road safety arena (Matson, 981228, 990215, 990625, 990219, 990221, 990317). In response to this pressure, the government adopted an eleven-point program for road safety (Swedish Government, 1999), which, inter alia, involved the setting-up of an inquiry with the task of clarifying road administrators' responsibility for safe road traffic. This later became the Inquiry into Responsibility in Traffic (Trafikansvarsutredningen, 2000), the first investigation referred to in this study. Ironically enough, the government also announced in the program that it had the intention of having NTF's road safety work and the association's use of government funding evaluated. This can be interpreted to mean that it was not entirely happy with the criticism that the NTF had directed at the Road Administration and the government, and gave a signal that it is not good to "bite the hand that feeds you".

In 2003, the Road Traffic Inspectorate was established as an independent operating unit within the Road Administration. In this way, it appears that public interest in safety in road traffic had, to some extent, been institutionalized. The Road Traffic Inspectorate had no formal legal foundation for its operations, but according to its instructions (SFS 2007:960), their tasks included analyzing traffic conditions and, through dialogue with authorities, municipalities and other stakeholders, acting so as to adopt a systematic approach to the prevention of road-traffic accidents in which anyone was killed or seriously injured. Indicative of the Inspectorate's priorities were the road safety targets – the short-term interim target for 2007, and the long-term Vision Zero. The Road Traffic Inspectorate seems to have had a very critical attitude towards both the policy and many of

the system designers for their lack of commitment to safety. Among other things, the Road Traffic Inspectorate criticized its own parent agency, the Swedish Road Administration, for its lack of a safety culture (Gildenlöv, 2006; Nordebo, 2007). The operations of the Road Traffic Inspectorate ceased with the formation of the Transport Agency in 2009.

Based on Wilson's model, it can be concluded that legislation regulating the safety liability of system designers is far from being achieved, since there does not seem to be any interest, even on the part of road-safety entrepreneurs or institutionalized promoters of safety. On the other hand, EU law seems to offer a more successful route. At EU level, road administrators do not seem to be an equally well-defined group, and there does not seem to be any strongly organized common European road-administration interest that would be able to challenge costly investments. The costs are therefore dispersed, as too are the benefits.

Other government efforts

Informative efforts

In this study, we have delimited our discussion of system designers' safety responsibility to a kind of formal legal liability, but the fact is that the Swedish government itself, or jointly with others, has made a host of other interventions, during the period under investigation, to affect the safety responsibility of system designers. Many of these efforts should basically be regarded as involving a kind of informative guidance. Informative instruments include attempts to exert influence by convincing, reasoning, pleading, persuading or educating (Vedung, 1995). In the case of information, public agencies' relations with the ones they control, in this case the system designers, are solely ones of knowledge transfer and persuasion. An example of a type of informative effort is the use of evaluation as a benchmarking tool (Hertting and Vedung, 2009). One concrete example is when the Swedish government, alongside other actors, sought to influence the automotive industry through the European New Car Assessment Program (<http://www.euroncap.com/home.aspx>). The ongoing practical work consists basically of crash tests, and the vehicles must meet specific criteria to achieve a certain score, which is then compiled into an outcome in the form of an awarded number of stars (1–5). The cars are rated on how well they protect adults, children and pedestrians, and also on their safety devices (such as electronic stability control, cruise control, etc.). Based on these criteria, they then obtain an overall grade, also expressed in 1–5 stars.

Another example is a kind of network management (Hertting and Vedung, 2009), namely the OLA method, which is a Swedish acronym for objective facts, solutions and action plans (Swedish Transport Administration, 2010). OLA is an approach in which different system designers get together to contribute to solutions to shared traffic-safety problems.

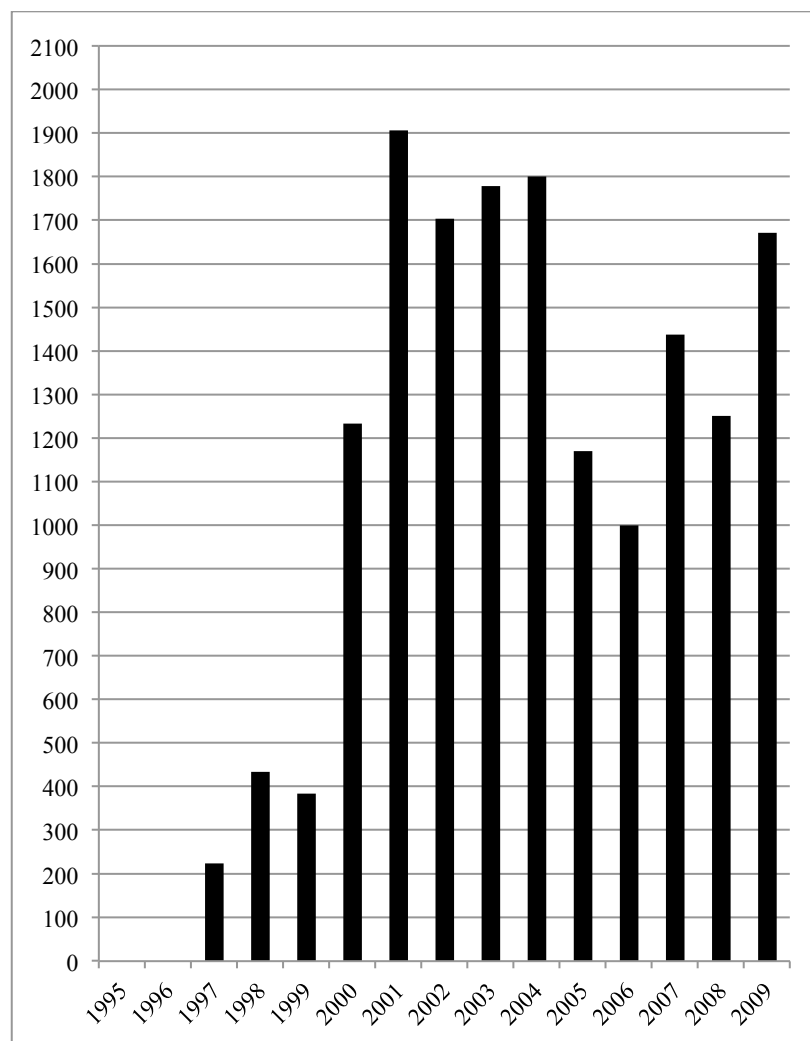
On the basis of facts, they discuss proposals for conceivable solutions to one or more problems. Through this approach, everyone is given the opportunity to show what measures they want and can take, and thereby contribute to improved

road safety. The approach is used at national, regional and local level. For examples of problems where this method has been applied, see (Trafikverket, 2012).

We have identified twelve different government initiatives during the study period, which aimed – through networking, evaluations or different types of information activities – to influence the safety liability of system designers.

Financial efforts

Figure 4. Targeted traffic-safety investments in the national road network in Sweden (MSEK)



During the period under study, the government also utilized different types of economic resources (Bemelmans-Videc et al., 1998) more directly to influence system designers' responsibilities. Among other things, additional resources were put into extending the system of automated traffic safety cameras, into government grants to municipalities for road safety efforts (Lindberg et al., 2007) and, by far the largest effort, into targeted safety measures on the national road network (Swedish Road Administration, 2010). Figure 4 clearly shows an increase in the provision of financial resources for targeted road-safety measures on the national road network.

It is beyond the scope of this study to investigate the various means of control and their effectiveness with regard to the opportunity to influence system designers and their safety responsibilities. However, it is clear that if instruments other than regulation are effective, the motive for formal regulation of safety liability will be weaker and thus there may be no need to build a costly bureaucracy.

Processes and efforts at other levels

Given the ambition to regulate the responsibilities of system designers, there are at least two external processes that have affected the outcome positively. The first was when the process of regulating government agencies' vehicles and transport services from an environmental perspective was also linked to safety. The second was the regulation of road administrators' safety responsibility through an EU directive. This is a good example of how the EU's legislative process has had a direct impact on road administration in Sweden and on its liability for safety on the TEN road network. Other processes in society can have both an inhibitory and a promoting impact on a specific implementation process. In these two cases, however, the processes had a promoting effect on the opportunity formally to regulate the responsibility for safety of system designers in some respects.

Discussion

Based on a goal attainment model (Vedung 1997), and given that the policy in question is designed to implement a formal responsibility for system designers in accordance with Vision Zero, the conclusion of the study is that this has only been achieved to a small extent. However, the evaluation approach, as applied to public policies, only addresses the question of whether implementation, during a studied time period 1997-2009, is successful or not. We need to develop deeper knowledge, e.g. by answering questions concerning how and why a process evaluation approach (Vedung 1997) was useful in this study. Based on this approach it is obvious, at least in this case, that implementing the transformation of a political intention into formal legislation is a long process, and – to a great extent – the stakeholders who are involved in the process of formulating the basic policy are also the ones involved in the implementation of the formal legislation. There are three aspects worthy of in-depth discussion, namely conflicts of

interest, the need for a sound theory, and the need for a mix of implementing factors.

First, it seems that, at the implementation phase, actors are more concerned with what they in particular may lose rather than what all in general may gain (Winter 1989). Therefore, in order to study implementation, it is important to consider conflicts of interest. At the policy-formulation phase, there is considerable consensus between different stakeholders over the general direction to take when intentions are in the course of becoming reality, there are all the practical problems that have to be solved as various underlying conflicts come up to the surface, and need urgently to be handled. At this phase of implementation, consensus can rapidly be transformed into conflict, between different goals or stakeholders, even within one the same organization; there is a great risk that a vague public interest has to be subordinated to well-articulated economic interests. In a society where decision-making processes are characterized by small incremental changes (Lindblom, 1959), it is an ambition at an almost heroic level to control all system designers and their safety responsibilities. One way to at least move forwards is to achieve step-wise change, thereby reducing the magnitude of effort and complexity in implementing new legislation. Apparently, this was the strategy advocated at the latter stages of the legislative process in Sweden. However, while the clarity of the legislation may increase, in terms of both who are the subjects of regulation and what is expected of them, in an unregulated situation, strong counter-forces can build up, which ultimately make it impossible to effect regulation in the short-term. This seems to have been the case with road administrators' safety responsibilities. Without the external influence of the EU, it is doubtful whether any legislation for at least the partial regulation of road administrators would ever have been implemented.

Second, successful implementation is more likely if a policy is based on a valid causal theory about the problematic behavior to be regulated by the policy and the relationship between the policy instrument and that behavior (Pressman and Wildavsky, 1984; Winter, 1989; Hill & Hupe, 2002). In the policy-instruments literature in general, and in this study specifically, there is an underpinning idea stipulating that formal regulation is ultimately the most effective and appropriate method to influence system designers' behavior (Bemelmans-Videc et al., 1998). However, as this study has shown, during the studied time period, many other government interventions were implemented in order to influence that behavior. There was no reason why the government should also implement formal responsibility if these interventions were effective and based on a valid causal theory. The possibility cannot be ruled out that this is a major reason why the government has not decided to implement formal legislation. In other words, the decisions-makers are working in line with another causal theory.

Finally, the idea of system designers having responsibility for safety has definitely taken root in Sweden, and the large number of other interventions made by holders of power to influence the designers may also indicate that Swedish society is undergoing a kind of a learning process. Such learning can take a long

time, but, at least in theory, it may fundamentally affect deep value patterns (Sabatier and Jenkins-Smith, 1993). In this perspective, the question is whether any eventual formal regulation will finally become more the confirmation of an already internalized norm. At the same time, changes can take place quickly. The body of thinking surrounding the safety responsibility of system designers has already been developed, and in a problematic societal situation in which system designers' safety liability is questioned and/or sudden political changes take place – items that can be linked together by a few clever strategists – the regulation of designers' responsibilities might proceed at a furious pace (Kingdon, 2003).

Conclusion

Vision Zero adopts a fundamentally new approach to the allocation of responsibilities for the prevention of traffic injuries in Sweden by including system designers and not just concentrating on road users. Having examined in depth the process and outcome of regulating system designers formal responsibility for safety, this study concludes that the goal of system designers' liability, in accordance with Vision Zero, has been only minimally realized. This low level of achievement appears to be attributable to four principal explanatory factors; operational background and complexity, conflicts of interest, other government efforts, and processes and efforts at other levels. The conclusion lends support to the general hypothesis that politically expressed intentions often are difficult to realize in practice. With help from the EU and the prominence of environmental issues, safety responsibilities have become regulated in part, but there remains a lot to be done if the ambition is to achieve comprehensive formal safety liability for all system designers. Therefore this might be an example of a classic implementation failure. However, based on the process evaluation approach the conclusion that this is an implementation failure become more blurry and it might be too early to make this kind of statement. Besides, formal legislation is only one policy instrument among others and a formal legislation might not even be the most appropriate way to secure a higher degree of responsibility from the system designers which is the ultimate goal according to Vision Zero.

Disclaimer

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