



The corporate quest for zero accidents: A case study into the response to safety transgressions in the industrial sector



Simon F.M. Twaalfhoven^a, Willem J. Kortleven^{b,*}

^a Department of Management and Organisation, Vrije Universiteit Amsterdam, The Netherlands

^b Department of Political Science and Public Administration, Vrije Universiteit Amsterdam, The Netherlands

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ABSTRACT

Since the 1990s, the idea that accidents should be reduced to zero is gaining growing acclaim in the fields of road safety and occupational safety and health. As most of the literature on this so-called Zero Accident Vision (ZAV) deals exclusively with its application to road safety, which is a public sector responsibility, there is a need to learn more about the way it is implemented by private companies. This paper reports on a case study into the zero accident approach followed by steel company Tata Steel IJmuiden (the Netherlands). The study suggests that private sector advocates of the ZAV, unlike their public sector counterparts, tend to view safety aspirations and economic considerations as mutually reinforcing. However, it is shown that this harmony model does not entirely hold in practice. The findings also highlight another discrepancy. Characteristic of the ZAV is a systems-theoretic focus on identifying root causes of unsafe situations rather than on individual error and blame. Yet employee behavior appears to be a major target for Tata's safety policy and several managers insist on punishing unsafe behavior. Paradoxically, this punitive tendency seems partly stimulated by and at the same time could hinder the very ambition of eradicating all accidents.

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1. Introduction

It is almost commonplace, today, to say that western societies have become increasingly risk averse (cf. e.g. Burgess, 2011; Douglas and Wildavsky, 1982; Furedi, 2009; Scott, 2000). A specific expression of this development is the growing importance of the so-called Vision Zero or Zero Accident Vision (ZAV), which aspires to a world without severe and fatal accidents, or, in some versions, even without accidents at all. Since being introduced in the 1990s, the ZAV and similar philosophies have been adopted in several countries across different continents (Sherratt, 2014; Swuste et al., 2012; Young, 2014). The ZAV is best known as a (Scandinavian) road safety program, but is also being applied in the field of occupational safety and health (Zwetsloot et al., 2013). A growing number of companies are committing themselves to the pursuit of zero accidents and, in countries such as Finland, Germany and the Netherlands, share best practices in Zero Accident Networks

(Partnership for European Research in Occupational Safety and Health, 2014; Zwetsloot et al., 2013).

The rise of the ZAV has not gone unnoticed in the scientific literature. However, most of the available literature deals exclusively with the ZAV in road safety (e.g. Elvebakk and Steiro, 2009; Fahlquist, 2006; Johansson, 2009; Rosencrantz et al., 2007). Much less attention has been paid to the implementation of the ZAV as an occupational safety philosophy in the private sector. Recently, some empirical studies have been published about the ZAV in this rather unknown application area (e.g. Sherratt, 2014; Young, 2014), but there is a need for more research (cf. Zwetsloot et al., 2013).

Two questions are especially worthy of investigation. The first has to do with the ethical content of the ZAV and its alleged neglect of economic laws. In a discussion of the Scandinavian zero accident approach to road safety, Elvik (1999) criticizes the reasoning that the moral unacceptability of traffic fatalities forbids that cost be a barrier to reducing the number of traffic fatalities as far as possible. According to Elvik, the economic law of diminishing marginal returns implies that it would be more reasonable to stop spending extra money on road safety at some point, as this money could save more lives when spent in other ways, such as on health care. Since

* Corresponding author at: Department of Political Science and Public Administration, Vrije Universiteit Amsterdam, De Boelelaan 1081, 1081 HV Amsterdam, The Netherlands. Tel.: +31 20 5984314.

E-mail address: w.j.kortleven@vu.nl (W.J. Kortleven).

road safety is traditionally a public sector responsibility and hence not subject to free market considerations such as profit and returns, there is ground to hypothesize that the ZAV's disregard for economic rationality is typical for its application in the public sector and does not, or to a lesser extent, apply in the private sector. Our question is therefore: How does the ZAV in the private sector relate to economic considerations?

The second question concerns the tension between the zero accident approach and another way of responding to unsafe situations, that is, by punishing those who err or break the rules. The ZAV takes a system approach in which the primary responsibility lies with the designers of a system, not with the system users. Unsafe behavior is perceived as a symptom of underlying problems with the system, at least when not originating in bad intent or gross recklessness, and taking refuge in blaming individuals for such behavior is rejected (Langeland, 2009; Tingvall and Haworth, 1999; Young, 2014). However, blaming individuals for unsafe behavior is a response that has deep roots in western culture and still holds considerable appeal (Dekker, 2012; Dekker and Nyce, 2012). Dekker (2011) even argues that the tendency to criminalize human error, as he calls it, is on the rise. Furthermore, it could be argued that there is an association between a zero accident strategy and a zero tolerance policy (cf. Sherratt, 2014), which would mean that striving for zero accidents provides a sort of intuitive stimulus to blame unsafe behavior of individuals, notwithstanding the ZAV's explicit rejection of blaming individuals. This begs the empirical question of whether companies that apply the ZAV manage to resist the temptation to criminalize human error on the part of their employees.

This paper contributes to the empirical knowledge on the implementation of the ZAV in the private sector and to answering the two questions outlined above. It does so by presenting and analyzing the results of a case study into the zero accident approach followed by steel multinational Tata Steel on its site in IJmuiden, the Netherlands. The case study consists of semi-structured interviews with more than twenty managers from three different levels, a survey among employees below the level of middle management, and an analysis of relevant company documents.

In the remainder of this section we provide a further introduction into the responses to unsafe situations we just described: the Zero Accident Vision and what we will call, following Dekker (2011), the approach of criminalizing human error. After that, we describe the methodology of this study in more detail. In the next section, the results are presented. These results are discussed in the last section of the paper, which also contains conclusions.

1.1. Zero Accident Vision

As touched upon before, most of the thinking and writing about the ZAV thus far has taken place within the context of road safety. We briefly discuss the most relevant elements from this body of knowledge and compare these with what is known about the ZAV in the private sector. Furthermore, we take a look at the broader context of the ZAV.

Whitelegg and Haq (2006) characterize the ZAV as ethical in nature, since it refuses to accept lifelong suffering or human death as a result of traffic accidents. This refusal entails an unorthodox allocation of responsibility. Although the role of road users in avoiding traffic accidents is not denied, they are not, like in traditional approaches, deemed primarily or solely responsible for road safety. Instead, the responsibility for safety is skewed toward the designers and administrators of the system, because of their supposed capability to change the parameters of the system so as to

achieve the goal of 'zero'. User disobedience, negligence or failure to understand the rules do not reduce the responsibility of the system designers and administrators, but are considered indicators that show where system improvement is needed (Fahlquist, 2006). In Sweden, where the road safety version of the ZAV was first adopted, this distribution of responsibility has been laid down in the following rules:

1. The designers of the system are always ultimately responsible for the level of safety within the entire road transport system.
2. Road users are responsible for following the rules set by the system designers.
3. If road users fail to obey these rules for whatever reason, the system designers are required to take necessary further steps to prevent people from getting injured or killed (cited in Tingvall and Haworth, 1999, p. 2).

An important assumption of the zero accident approach to road safety is that human error cannot entirely be excluded. The road transport system therefore needs to be arranged such that the consequences of human error do not exceed the resilience of the human body (Langeland, 2009; Whitelegg and Haq, 2006). In other words, the road environment ought to be forgiving of mistakes by road users (Bax et al., 2010; Tingvall and Haworth, 1999).

Not everyone is convinced that the forgiveness of the system can be raised to the extent necessary to actually reach the goal of zero serious injuries and fatalities. Some authors have argued that the ZAV is no more than an image of a desired future, whose function lies in appealing to those individuals who have the ability to improve things (Elvebakk and Steiro, 2009; Langeland, 2009). However, scientists involved in the ZAV argue that it should not merely be perceived as a representation of a desired future, but as a scientific goal that is set to be achieved (Langeland, 2009; Rosencrantz et al., 2007).

The debate on the character and attainability of the road safety ZAV shows that referring to it in the singular is a bit artificial. As the authors writing about this approach and the countries that have adopted it do not always agree in their interpretations and elaborations, the road safety ZAV has in fact different versions. When we turn to the ZAV in the context of the private sector, it is even more difficult to give a clear description of its content. Thus far, efforts to define the corporate ZAV have been scarce and, due to its application in a large number of companies, its potential for varying interpretations exceeds that of the road safety ZAV.

Notwithstanding these difficulties, attempts to discover the common core of zero accident approaches in the private sector reveal obvious similarities with the ZAV in the road safety context. Like the road safety ZAV, the corporate ZAV is motivated by ethical considerations. Zwetsloot et al. (2013, p. 46) see a connection between the ZAV and the paradigm of Corporate Social Responsibility, and call accident free workplaces 'the only ethically sustainable safety goal'. Debate about whether the ZAV is to be seen as a concrete target or rather a strategy to raise commitment to safety is also apparent in the literature on the corporate ZAV (Sherratt, 2014; Swuste et al., 2012; Zwetsloot et al., 2013). Furthermore, there is correspondence between the zero accident approaches in both domains with respect to the shift in responsibility toward system designers and administrators. Different authors emphasize that pursuing the corporate ZAV requires leadership of the management of companies and paying attention to systemic causes of accidents rather than to individuals' actions (Young, 2014; Zwetsloot et al., 2013).

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