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Studies into train suicide

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Chapter 1

Introduction

Train suicides belong to the most violent and lethal forms of self-destructive behaviour. They take place in the public space, involve other people and cause considerable delays to transport services. These characteristics set train suicides apart from other suicides.

Although the earliest official recordings of train suicides date back as far as 1852 (Clarke M, 1994), the interest in the study of train suicide as a distinct phenomenon is of more recent date. Besides some earlier forensic reporting, it is only 60 years ago that the first systematic study on this subject appeared. Swiss physician Franz Baur wrote a dissertation describing 62 train suicides in 1920-1950 (Baur, 1951). He noticed that the majority of the cases had had mental health problems. Almost all suicides occurred at night at places where one can wait for trains without being disturbed or seen by train drivers. Some twenty years later Guggenheim and Weisman pioneered with a study on underground train suicides (Guggenheim and Weisman, 1972), which was followed by a substantial body of international research on underground train studies, and since 1985 more studies on overground train suicides in different countries have been published (Symonds, 1985; Lindekilde and Wang, 1985).

A high prevalence of diagnosed mental illness and a history of mental healthcare appeared to be a consistent finding among underground and overground train suicide studies (Mishara, 2007; Ratnayake et al, 2007; Krysinska and De Leo, 2008; Ladwig et al, 2009). As the type of psychopathology reported varied considerably, the question remained whether certain types of psychopathology had a special link with this suicide method. Also, the questions of whether train suicides are characterised by an overrepresentation of psychopathology or whether those who die by this suicide method have a different mental healthcare usage compared to other suicides had not been sufficiently studied.

Some studies demonstrated that persons who committed train suicide lived or resided at short distances from the suicide location (Mishara, 1999; Abbott et al, 2003). This residential link would explain the existence of observed high-risk locations near psychiatric hospitals in some countries (Emmerson and Cantor, 1993; Erazo et al, 2004). At the same time this implies that high-risk locations may not be exclusively linked to psychiatric hospitals.

An important question is whether train suicides are related to the tendency for suicide in a nation or rather are autonomous events. Only two studies have addressed this issue. One cross-sectional study on underground train suicides found no association with general population suicide rates (Lester, 1995a). Another, longitudinal study on overground train suicides, covering a 10-year period, found a negative association (Baumert et al, 2005). This scarce and equivocal evidence seemed insufficient to draw solid conclusions from, however. A study by Clarke convincingly demonstrated the contributory role to suicide frequency of the availability of the railway system in terms of railway track length (Clarke M, 1994). It should be mentioned, though, that this observation was made in the era of railway expansion. Later studies have questioned the relevance of railway density (Symonds, 1985; Baumert et al, 2005). Railway system availability can be divided into two components: a. railway density and

b. the number of trains actually passing. The effect of the latter on train suicide incidence has hardly been explored and deserves further attention.

The timing of train suicidal behaviour is an interesting study subject as different factors can be expected to play a role with various implications for train suicide prevention, such as a tendency to hide in the dark, as described by Baur, clock-time related factors like train traffic intensity or duty shifts in psychiatric hospitals, and environmental factors like seasonality (Maes et al, 1993). It seems important to distinguish underground and overground train suicides, as the majority of underground train suicides happen in artificially lit stations, whereas the majority of overground train suicides happen outside, on open tracks. While underground train suicides seem to be restricted to daytime hours, overground train suicides may manifest a different pattern. Schmidtke, who used 3-hr intervals, found a shift in male overground train suicides from an early evening peak in winter towards later hours in summer, demonstrating a possible influence of the light-dark cycle on train suicidal behaviour (Schmidtke and Ober, 1991). This finding needed to be replicated with a powerful dataset allowing for a finer resolution of time units in order to study time patterns better.

In the early nineties of the previous century no comprehensive body of knowledge regarding train suicide existed in the Netherlands. Anecdotal reports fuelled a general awareness of train suicide as being a nasty but somehow inevitable problem occurring on the tracks near psychiatric hospitals. It was uncertain whether the observations reported from other countries were also representative of the Netherlands. In this period the Netherlands Railways started to develop a growing interest to mitigate this problem and improve aftercare for train personnel affected. Thus, with the help of the Netherlands Railways, it became possible to set up a large national database of suicidal behaviour resulting in train-person collisions. This database, which includes incidents of jumping or lying in front of a moving train or crashing a motor vehicle against a moving train, formed the backbone of the majority of the studies of this thesis. The size of the database and its relative completeness regarding demographic and location characteristics of each incident of suicidal behaviour made it possible to precisely depict the magnitude of the problem in the Netherlands and make it more tangible in our society. Moreover, the database allowed addressing the above-mentioned research questions for which databases used in previous research had been insufficient.

The main research questions investigated in this thesis and the chapters corresponding to these questions are:

- What is the frequency of train suicides in the Netherlands in 1950-2007? (Chapter 2)
- Are trends in train suicide related to trends in national suicide figures? (Chapter 2)
- Is there a relationship between train suicide and railway parameters? (Chapters 2, 6 and 7)
- What is the distribution pattern of train suicides over the railway network? (Chapter 2)
- What is the psychopathology involved? (Chapter 3)
- Is there a relationship between psychopathology and certain suicide methods? (Chapter 4)
- Are there seasonal and 24-hour patterns in train suicides? (Chapter 5)

In Chapter 8 the main findings of the studies will be discussed and recommendations for prevention and further research will be formulated.

