



Research report

Celebrity suicide on the railway network: Can one case trigger international effects?



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ABSTRACT

Background: After the railway suicide of the German national goalkeeper Robert Enke in 2009, a significant increase of railway suicides was observed nationally. This study analyses whether this incident also triggered copycat effects in other European countries. Additionally, media coverage proxied by Google Trends and long-term changes taking into account general changes in suicide rates and kilometres driven by trains were examined.

Methods: The numbers of railway suicides before and after Enke's suicide were analysed for short and long-term periods (2 weeks and 2 years post-event) across five European countries. Incidence ratios and resulting percentage changes were computed.

Results: Similar to Germany, there were significant short and long-term effects for the combined data of the four other countries (increase of 93.9%; $p=0.004$ and 16.7%; $p=0.003$). There was no indication that long-term effects are a mere reflection of an overall increase in suicide frequencies or due to increased numbers of kilometres driven by trains. Analyses on country level revealed heterogeneous results.

Limitations: Due to incomplete data, analyses regarding age and gender were not performed. Media coverage was only proxied by a Google Trends analysis. The study includes a small sample of European countries.

Conclusions: Enke's suicide in 2009 was followed by increasing train suicide numbers in Europe. Although this incident may have reinforced an existing European trend of growing railway suicides, an international copycat effect and/or an increased overall awareness about this particular suicide method appears to be one likely explanation for the changes.

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1. Introduction

Suicide by collision with a train accounts for 1–12% of overall suicides internationally, with up to 94% of all attempts resulting in death (Krysinska and De Leo, 2008). According to the European Railway Agency (2014) they represent about 70% of all fatalities on European railways, and consequently are more impacting in terms

of lives lost than railway accidents. Overall, an upwards trend of railway suicide numbers was registered from 2006 (1878 cases) until 2012 (2997 cases) (ERA, 2014, data for the member states of the European Union). In 2013 a total of 2819 railway suicides were registered in the EU member states (Eurostat, 2014), representing an everyday average of nearly 8 cases. They have a significant human impact on families (Pitman et al., 2014), train drivers (Kim et al., 2013; Mehnert et al., 2012) and likely other groups such as passengers, train machinists and by-standers. Additionally, they have economic consequences (ERA, 2014).

Most suicides occur in the context of a psychiatric illness or disorder (Chesney et al., 2014; Yoshimasu et al., 2008). They might

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be partly avoided by better provision of mental health care and closer attention to vulnerable groups. A Dutch study reported that for train suicides, the proportion of patients with a psychiatric history is of 65% (van Houwelingen and Kerkhof, 2008). 53% of the people who died by train suicide received psychiatric care at the time of their death, and the most prevalent diagnoses being affective disorders and non-affective psychoses. Consequently, further research on aetiology, risk groups and treatment as well as the establishment of care models should be carried out with high priority.

One of the factors shown to have measurable influence on suicide rates is the availability of lethal means (for review see Sarchiapone et al. (2011) and Florentine and Crane (2010)). For railway suicides, a relationship to an increased availability of trains has been reported (van Houwelingen et al., 2013; Clarke, 1994). A recent review (Too et al., 2014), on the other hand, found weak and inconsistent evidence for associations of railway suicide numbers with railway environment parameters (availability of railways and trains, accessibility to railways and familiarity with trains) and population characteristics.

Another factor triggering an increased rate of suicides is imitation, leading to copycat suicides. In the case of a suicide of a prominent person (celebrity suicide), the occurrence of the “Werther effect” is likely. This term is related to Goethe's novel entitled “The sorrows of young Werther” and was introduced by Phillips (1974). It refers to an increase in suicides in the population triggered by (elaborate) media reporting on a suicide case. It has been reported for several suicide methods, including charcoal burning (e.g. Chen et al., 2012), jumping (e.g. Kim et al., 2013; Yip et al., 2006), hanging (e.g. Kim et al., 2013; Cheng et al., 2007; Tousignant et al., 2005) and railway suicides (e.g., Hegerl et al., 2013; Ladwig et al., 2012; Schmidtke and Häfner, 1988).

In terms of the latter, Schmidtke and Häfner (1988) documented a Werther effect for railway suicides after the TV broadcast of a fictional serial demonstrating the railway suicide of a male adolescent. Suicide rates increased temporarily after the broadcast of each of the six episodes. A pronounced increase of railway suicides following the (real) case of Robert Enke was shown in more recent publications (137% increase for the two weeks after the incidence (Hegerl et al., 2013) and 81% increase if analysed for a four-week period (Ladwig et al., 2012)). This internationally known football goalkeeper of the German national team died due to suicide in his home country on November 10, 2009. Although both studies did not include analyses of actual media reports, it can be assumed that the increase of railway suicides in Germany immediately after this event due to the extensive and long-lasting media reporting about Enke's suicide can be assumed (for review see Niederkrotenthaler et al. (2012)). This is especially true as it has been shown that most print press releases related to the case have violated available media guidelines (Teismann et al., 2013). For Germany, Schaefer and Quiring (2014) found that guideline non-compliant reporting of celebrity suicide, which has been observed in six cases, including the one of Enke, is associated with increases in overall suicides and suicides with similar methods.

Hegerl et al. (2013) also investigated long-term effects of Enke's suicide and found that the number of railway suicidal acts in the two-year-period following Enke's suicide increased by 18.8% compared to the two-year-period before this event. The median number of railway suicidal acts per day increased from 2.3 to 2.7 in Germany ($p < 0.001$). This effect remained significant after the exclusion of short-term effects of Enke's suicide from the statistic calculations, demonstrating the impact this particular case of celebrity suicide had on the subsequent suicide numbers.

An international effect might be presumed as Robert Enke was known beyond German borders. Active as a professional football player since 1995, he temporarily worked in teams in Portugal, Spain and Turkey, prior to his position in the German national

league. In 2008 and 2009 he was part of the German national football team (Reng, 2011). Thus, his suicide received media attention not only in his home country, but internationally. If this might have triggered similar copycat effects in terms of increased numbers of railway suicides after his suicide in other European countries is investigated by this study.

Unfortunately we were unable to directly investigate the relationship of media reporting to changed railway suicide numbers after Enke's suicide, because it was not possible to retrospectively obtain related international and comparable data about media reports with the given resources. However, as media reporting is known to influence public opinion (Vu et al., 2014; McCombs and Shaw, 1972), the latter might serve as a proxy marker towards media coverage. In research, public opinion is traditionally assessed by analysing opinion polls. In recent years, Google Trends (formerly Google Insights for Search) has been used increasingly to the same end. This is one of the services offered by the US-American Google Incorporation, which holds the worldwide most used internet search engine.² Google Trends provides data on the relative frequency of search terms entered into the Google search website, comparing the number of searches done for a specific term with the total number of searches in Google. While Google Trends' potential for assessing issue salience was on the one hand acknowledged in scientific studies (Scheitle, 2011), its liability in research was also questioned, when systematically compared to pollster trend data (Mellon, 2013). Nevertheless it is increasingly used with health care research representing one common field of interest (Nuti et al., 2014). In recent years studies include the subject of suicidal behaviour, such as one from Gunn III and Lester (2013) demonstrating a positive association between search volume for suicide related terms and suicide rates of the 50 federal states of the USA. In the present paper, Google Trends data were retrieved and used in an exploratory way. This was done with the assumption that searches in Google also reflect media attention to a specific event, such as the suicide of Robert Enke. As a significant influence of media attention to an issue on search interest has been shown (Liang and Scammon, 2013; Weeks et al., 2012), it is likely that the volume of internet searches, and consequently Google Trends data, might serve as a proxy marker to media coverage about an event. Consequently, they were included as such in this study.

To summarise, the main aim of this study was to analyse whether or not the celebrity suicide of Robert Enke had an influence on suicidal behaviour in the sense of a Werther effect not only in Germany but also in other European countries. The following question was addressed on a first level of interest:

1. Are there short-term effects of the suicide case of Robert Enke and subsequent media coverage on the number of railway suicides in the four European study countries other than Germany?

Additionally, the following questions were addressed:

2. Did long-term effects occur in the study countries other than Germany?
3. Are increased railway suicide numbers associated with changes in kilometres driven by trains in the study countries?
4. Are potential long-term changes of railway suicide numbers following Enke's suicide different from the overall changes of suicide numbers, and does this impression remain after changes in train kilometres are taken into account?
5. Is there a relationship between an increase in railway suicides and Google Trends data for defined search terms related to the case?

² Alexa Top Sites By Category-Search Engine Ranking. Retrieved December 15, 2014: http://www.alexa.com/topsites/category/Computers/Internet/Searching/Search_Engines

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