

## Fare dodging and the strong arm of the law

### An experimental evaluation of two different penalty schemes for fare evasion

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**Abstract** In this paper we discuss a controlled experiment on the enforcement of sanctioning for fare evasion in trains in the Netherlands. The experiment ran for 2 years, and the extent to which sanctions were effectively imposed was compared for non-chronic fare evaders in two regions. Travellers caught without a ticket who had not paid on the spot were divided into two conditions. In the (regular) control condition, the Dutch railways attempted to recover the cost of the unpaid ticket, plus a small penalty, followed by regular, civil law, debt collection procedures. In the experimental condition, the efforts by the Dutch railways were followed by penalty collection procedures by the Dutch Ministry of Justice's fine collection agency. The results under the experimental condition were worse than those under the standard procedure. Both conditions have (often lengthy) follow-up procedures entailing criminal prosecution, which are not reported upon here. We discuss the implications and the questions that these findings raise.

**Keywords** Civil law · Criminal law · Experiment · Fare evasion · Fine collection

### Introduction

Khalil Ibrahim is considered by some to be the intellectual leader of the Justice and Equality Movement (JEM), one of the two main rebel groups in Darfur, in Western Sudan. Mr. Ibrahim, who is a medical doctor and is called 'Dr.' by his co-rebels, holds a French passport. He now lives in France, and travels regularly, yet furtively via Chad, from there to Sudan, where his wife and seven children still live. Before settling in France, Dr. Khalil applied for asylum in the Netherlands, in 2001, and lived for a while in Terschelling, a small island in the north of the country. In an

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interview with the weekly *Elsevier* (23 September 2006), he relates how amazed he was at the ease with which he could travel for free by train in the Netherlands. He says: ‘Whenever I was caught without a ticket, I would show my asylum seeker’s pass, after which I’d receive a fine. But I never paid any of those fines’.

The Netherlands is a small and flat country. With distances short, freeways congested, and towns often old and not built for processing lots of motorized traffic, there is a fairly extensive public transport system in operation. A network of trains stretches all over the country, and includes fast rail connections with France and Germany. Smaller trains operate in some areas. Trams run within some cities; Rotterdam and Amsterdam have subways. Buses operate within towns and in-between towns and villages. As in many other countries, some of the passengers in the public transport system travel without a (valid) ticket.

In self-report surveys, fare dodging is often reported. For instance, among 1st and 3rd grade secondary school students in the western urbanized part of the Netherlands, around 50% report fare dodging at least once during the preceding school year (Weerman 2007), probably most often in trams. Similar results are found in other European countries with fairly extensive public transport systems (Bornewasser and Schulze 2003; Kivivuori and Savolainen 2003).

Fare evasion is a neglected though important topic of study for several reasons. Firstly, fare evasion implies loss of revenue for public transport operators. Secondly, many anti-social and criminal behaviours in the transport environment (verbal abuse, threats, intimidation and other disorderly behaviours, spitting, and physical assaults on staff) are often associated with attempts to enforce payment. Third, use of transport may be affected, as passengers become upset and intimidated by witnessing such confrontations. Fourth, those who evade paying for a ticket may be the same people who are responsible for other anti-social, disorderly and criminal behaviour in transit environments.

The manner in which fare evasion can be countered has been studied minimally in the criminological literature. While fare evasion is an offence in many countries, law enforcement is not the only manner with which one can tackle the problem. Operators have implemented physical barriers to prevent fare evasion or at least make it much harder or less attractive to carry out. The enforcement of penalties for fare evasion is important not only from a monetary perspective (in that the transporter may regain some of the losses) but also from the point of view of general deterrence.

This paper gives the results of a controlled trial in the Netherlands in which the efficacies of two penalty collection methods were compared. The methods were administered randomly. In the following sections, some background information will first be given on the Dutch public transport systems and the incidence of fare evasion. Next, we will outline relevant criminological theory pertaining to fare evasion and measures to counter or prevent it. We then describe the design of the experiment, in which the efficacy of an experimental penalty scheme was contrasted with the efficacy of the standard penalty scheme. The experimental penalty scheme was deemed to imply both a greater likelihood of the penalty’s being effectively imposed and a more severe penalty. After detailing the design of the experiment, we present the findings that show how—surprisingly—the new penalty system performed significantly worse than the standard one. We conclude by discussing

the implications for policy and research, and by offering a number of explanations for these unexpected findings.

### **Fare evasion in public transport in the Netherlands**

Until the 1960s, almost all trams and buses in the Netherlands had sales personnel on board who sold and checked tickets. In the course of the 1960s, these were replaced by machines, as that was deemed cheaper. Until then, tickets for trains were generally sold by personnel at the entrance of stations. In some stations it was necessary to have a 'platform' ticket to be allowed to enter the platform, although there was generally no physical obstacle to entry. As machines replaced staff, however, fare evasion increased, in buses, trams and trains. Vandalism and aggression is reported to have increased alongside (Van Anandel 1989), though this has not been studied in much detail.

In buses, fare evasion was tackled by (re)installing a virtually closed entry system: passengers in almost all buses must now enter via the front door, past the driver, who serves as ticket seller at stops, and with back exits often blocked for entry from outside. In many trams, random checks at stops were introduced. Such new measures were evaluated in a study by Van Anandel (1989). Even though the introduction of these measures was not assessed through a true experiment, and, simultaneously, a number of other measures were imposed to combat fare evasion, these new measures were judged to be effective, particularly in cities where fare evasion was widely prevalent, where the measures implied a radical new policy, and where controlling personnel could actually impose sanctions on fare evaders. The new measures could not be shown to have a measurable effect on feelings of safety, however. Within the past few years, the system of the 1960s has returned in some trams in Rotterdam and Amsterdam to reduce fare dodging, with a ticket seller at the back entrance of the tram, or a ticket controller present during the entire trip, who checks every passenger's ticket.

In trains, entry is still much more open. Travellers buy a ticket from one of a number of machines inside the station, or they may buy a ticket at a small additional charge from personnel. Entrance to the platform, and entry into the train, is still unrestricted, although at some larger stations in the evenings and, at times, randomly, passengers' tickets are checked at the bottom of the stairs that give access to the platform. In principle, an inspector checks the tickets of passengers. The Dutch railway transport company [Nederlandse Spoorwegen (NS)] strives for an inspection chance of 50% for trips lasting at least 30 minutes. For comparison, Leiden–Amsterdam, which is a usual commuting distance, takes about 35 minutes, and the Hague–Rotterdam takes a little over 15 minutes. On average, this target is met, though not in the evening, and not always in the urbanized western part of the country. Most inspectors are authorized detection personnel ('Bevoegd Opsporings Ambtenaar') and may charge an increased price for those travelling without a ticket, which is the standard ticket price for the trip plus a surcharge, or they may write an official report and impose a fine for fare evasion. Fare evasion is an offence in the Dutch criminal code ['Wet Personenvervoer' (Transport law) 2000, article 70].

It is estimated by NS that, in 2003, which is the relevant year to quote, given the study reported here, approximately 3% of trips made by travellers on the Dutch railways took place without a valid ticket. That constitutes a loss of income to the

company amounting to an estimated 3% to 4% of its gross annual income from transportation. In addition, it was estimated in 2003, from the so-called incident reports that inspectors detail after an incident on a train (which are collected and analysed by NS), that around 60% of all violence in Dutch trains is directly related to fare evasion (NVA/Leemans 2004). Such violence can range from verbal threats and abuse to actual hands-on violence. It may be directed at fellow travellers, but is often directed at personnel. Train inspectors reported to this author that groups of young travellers, rather than junkies or vagabonds, are particularly regarded as intimidating and threatening. Psychiatric patients or those presumed to behave in such a way are sometimes approached with care, as some inspectors have experienced that they can suddenly become very aggressive. In 2003, 80% of travellers felt safe in the station, and 40% felt safe there at night. Personnel give slightly lower ratings (NVA/Leemans 2004). Combatting fare evasion is, thus, also important to increase what is often called 'social safety' ('sociale veiligheid') in and around the trains (NVA/Leemans 2004).

In 2003 an estimated 5.4 million incidents of fare evasion took place in Dutch trains (NVA/Leemans 2004). In approximately 1.6 million of these incidents payment of the regular ticket price plus a surcharge was imposed, meaning that about 30% of estimated cases led to the imposition of a sanction. In 1 million cases, these ticketless travellers paid on the spot. In around 600,000 cases, the inspector wrote out and handed to the passenger a so-called *Uitstel van Betaling* [Delay of Payment form (UvB)]. A UvB is formally an official report, by which—when signed by an authorized inspector—prosecution can take place. However, if the customer pays within a certain legal period, prosecution is deferred. Two-thirds of these UvBs remained unpaid in 2003 (NVA/Leemans 2004). This means that out of 1.6 million discovered incidents of fare evasion, 1.2 million, or 75%, lead to some form of penalty, either payment on the spot, or later. This amounts to an effective penalty probability of 22% over all estimated incidents.

The NS (cf. Beke 2004) distinguishes fare evaders into—largely—three different groups, each not purchasing a ticket for different reasons. The first type comprise the *accidental fare evaders*, who, for example, have left their wallets at home, or have rushed into the train to catch it, forgetting to buy a ticket. The second type is composed of the *calculating dodgers*, who simply calculate their expected loss and reason that it is cheaper to be caught once in a while and pay the increased rate (or not pay), rather than buy a ticket every time. Both these first two types do not generally cause unrest or danger in trains. The first type in general pays the UvB, but, for the second type, this is often not the case. The third type is qualified as the *chronic fare evader*. Beke (2004) studied the 100 most frequent fare evaders within this latter group. In 2003, those 100 fare evaders received between 107 and 356 UvBs each. Ninety percent of this top 100 have a criminal record, 70% are drug and/or alcohol dependent. Those who are generally aggressive when caught tend to be homeless as well. It is this latter group that contributes most to feelings of danger in the stations and trains. It should be noted that 8% of all fare evaders are responsible for 50% of all UvBs; the distribution is thus heavily skewed, a phenomenon not unknown in other areas of criminological research.

Thus, there is heterogeneity in motives for fare evasion, in problem behaviour as a result of fare evasion and its discovery, and in the extent to what the various types of fare evaders can be made to pay in some kind of penalty.

## Theoretical backdrop of the experiment

Most of the literature on fare evasion (see Smith and Clarke 2000) deals with measures to prevent fare evasion, such as physical access measures or increased surveillance. There is a much wider associated body of literature on crimes in the public system, such as vandalism, and crimes against fellow passengers or against staff. This literature is also of relevance to studies on fare evasion, as it is firstly presumed that it is generally the same persons who are responsible for these offences: those who assault staff or who rob fellow passengers also often travel without a ticket. Finder (1991, in Smith and Clarke 2000) reported how measures to combat fare evasion were associated with a decrease in more serious offences in the New York subway, as did a study in greater London (Cubic Transportation Systems 2005) in which the installation of gates was associated with a 14% fall in crime on the railway in south London in 1998. Secondly, as was reported for the Netherlands above and has been reported for other countries, the discovery of, or disputes over, fare evasion itself may lead to assaults on staff (*viz.* Smith and Clarke 2000). As such, fare dodging may elicit other offences.

Most of the literature on the combating of fare evasion focuses on either higher apprehension chances by more intensive supervision at entry, exit or ticket inspections, or on the installation of physical barriers, such as turnstiles. The theory behind physical barriers to entry without a valid ticket is situational crime prevention. While access is not impossible, it is definitely much harder, and more obstacles need to be overcome—physical in the case of a turnstile and psychological in the case of a closed entry system in a bus. Thus, the cost for fare dodging goes up, and a rational offender might, therefore, when the costs or the efforts outweigh the gains, refrain from fare evasion and simply buy a ticket. The expected loss of fare evasion can also start outweighing the gain when—assuming that apprehension leads to sanctioning—either the apprehension chance goes up or the loss itself goes up. Much less has been written on this deterrent effect of penalties for fare evasion. The studies reported on by Smith and Clarke (2000) pertain to the evaluation of the effectiveness of increased inspection and, thus, apprehension chances: in Anglo-Saxon countries, as well as in the Netherlands, increased inspection, either during travel or at entry or exit, has been generally associated with (strongly) decreased rates of fare evasion. Much less has been reported on the deterrent effect of stiffer penalties for fare evasion that would similarly increase the expected loss.

There is a fairly solid body of literature on deterrence (see e.g. Von Hirsch et al. 1999, Nagin 1998, and the much older, but still relevant, Blumstein et al. 1978 and Zimring and Hawkins 1973). Much of this literature focuses on general deterrence of incapacitating sanctions and the death penalty. Zimring and Hawkins (1973) also discuss deterrence findings with regard to what they name ‘folk crimes’, under which the fare dodging incidents studied here are perhaps best ranked. Quite a number of years ago, they recommended that more studies be conducted on the deterrent effect of sanctions for this type of offence; however, in doing so, they focus most strongly on offences such as thrill seeking traffic offences (mainly drunk driving, dangerous driving and speeding), which are only marginally comparable to the kind of economically profitable norm-transgressing behaviour we are discussing here.

A smaller part of the literature deals with the mechanisms by which certain policies have a deterrent effect. Von Hirsch et al. (1999) state—*inter alia*, but we

quote the relevant parts—that as offenders essentially weight the costs and benefits of offending behaviour, the costs can be increased in at least two ways: by increasing the certainty of punishment (in this case, the certainty of penance for fare evasion) and by increasing the severity of punishment (in this case, the costs of punishment for fare evasion). Although the expected loss of fare evasion can be calculated as the product of the apprehension chance multiplied by the penalty enforcement chance and the penalty, the various parts of the equation appear to play an asymmetric role: as Pratt et al. (2006) show in their meta-analysis, while almost all the evidence for deterrence is dubious, only the certainty of punishment and the negative effects of non-legal sanctions are ‘large enough to be considered substantively important.’ Such non-legal sanctions are negative by-products of sanctioning, such as losing one’s job, shame, or gaining the disapproval of one’s partner.

The evidence for the deterrent effect of penalty schemes on fare evasion is scattered and inconclusive. A study in greater London showed that, in areas in which a penalty fare applied, fare evasion was estimated to be 3%; in the area in which no such penalty system applied, fare evasion was estimated at 8%. This would point to a deterrent effect of penalties (Department for Transport 2005). On the other hand, a study in southwest London, where a penalty fare scheme was in operation, indicated that the penalty fare scheme was unpopular with passengers and was never established as an effective deterrent to fare evasion (Cubic Transportation Systems 2005).

This study attempts to contribute both to theory and policy. As a new penalty scheme will be compared with the standard scheme, the results from the study will provide evidence for operators and policy makers. Additionally, this study will test, in a classical experiment, whether any greater deterrent effect can be expected of a new penalty collection scheme that implies both a higher penalty probability and penalties that can be supposed to be regarded by the public as stiffer. We will now outline the experiment in detail.

## Experiment design

NS initiated a pilot scheme in April 2003, together with the Special Prosecutor for Traffic Offences and the Ministry of Justice fine collection agency, CJIB (‘Centraal Justitiele Incasso Bureau’), to investigate whether a different penalty scheme would lead to increased sanctioning rates among those receiving a UvB. The backdrop of this pilot scheme was that NS deemed penalty collection rates too low. Until then, of those fare evaders receiving an UvB, about 24% paid directly to NS and another 6% paid after two reminders, via NS’s own fine collection agency. Placing turnstiles had previously been considered, but, with an estimated cost of €750 million, this was considered too costly until other options had been investigated. The CJIB, the Ministry of Justice’s fine collection agency, had estimated that it would be able to increase the civil debt collection agency 6% rate to approximately 25%, downscaling its own fine collection rates for other offences.

The experiment was neither designed nor expected to provide a comprehensive solution for all fare evasion in trains. NS implemented different schemes for different kinds of fare evaders. Simultaneously with the experiment reported upon here, it started an experiment to assess the efficacy of ‘*treinverboden*’ (a police measure in

which a person is forbidden to enter a train for a period of time) coupled with highly intensive supervision, to reduce fare evasion by a small group of known, chronic dodgers. Also, during the course of the experiment reported upon here, NS introduced a standard penalty of €35 for travel without a valid ticket. This penalty can be regarded as targeted more at the group of accidental fare evaders. The experiment reported upon here is thus geared to this latter group, and to the most obscure group of calculating dodgers, of whom some pay and some do not, who may cause trouble when they are caught dodging and thus generate feelings of danger among staff and passengers. The experiment should thus be seen as one of a packet of different measures to combat fare evasion, tailored to the respective subgroups of fare evaders.

While all measures ultimately aimed also to increase social safety, the dependent variable investigated here is whether a penalty has been paid by the fare evader. The experiment thus investigates to what extent the new, experimental penalty scheme and the old standard penalty scheme were effective in the sense that they would succeed in making fare evaders pay. An experimental design had been chosen to ensure maximum internal validity.

Standard procedure during the experiment upon discovery of fare evasion (control procedure)

At the time of the experiment, the standard policy when an incident of fare evasion was discovered was that fare evaders were asked to buy a ticket in the train from the ticket inspector, at an increased price.

*Stage 1* Those who cannot pay because they have no money on them are asked to identify themselves (name, address, postal code and proof of identity). The inspector checks that the postal code and address given exist and match. Those who give a non-existing address may be handed over to the railway police, but it is uncertain whether this actually happens a lot as the procedure is very cumbersome and may generate a lot of aggression, because the train may need to be stopped and is then delayed, which incurs the wrath of the other travellers and leads to further loss of revenue. Those who give an existing address are given a UvB. Stage 1 is thus concluded.

*Stage 2* NS then sends the fare evaders a bill at home, with a giro card to transfer the amount due to NS. Those who do not pay within 2 weeks are sent a reminder and are given the legally required payment period of 30 days to pay. Quite a number of cards are returned to NS at this stage because the person is unknown at that address. Inspectors reported to this author that, at times, they know that fare evaders do not supply their true identity; secondary school students are reported to often carry a fictive school agenda on them for the purpose of fare dodging, which lists an existing address with a fictitious name that they show to the inspector when they are caught without a ticket.

*Stage 3* Next, the remaining bills are sent to a debt collection agency that re-sends the bills with an added amount for 'debt collection costs'. The bills of fare evaders

who have amassed more than three UvBs are not sent all at once: first, two UvBs are sent, and, if these are paid, any further bills are also sent on. Those who do not pay are reminded again. Usually, debt collection agencies in the Netherlands ('Incassobureau') threaten people with a bailiff who may come and, if necessary, seize a person's goods by force to cover the cost of the bill. However, on the back of the NS debt collection agency's letter it says that a bailiff will not be called in; it is unknown how well these letters are read, if at all. The debts of those who also do not pay at this stage are returned to the NS as irrecoverable.

*Stage 4* NS collects these irrecoverable UvBs. Those fare evaders who amass five or more irrecoverable debts within one year may be collected into one single court file and sent on to the prosecutor's office for prosecution. In the past, files that were sent on to the prosecutor's office contained, on average, nine UvBs. Before doing so, NS checks the address and has the UvBs signed by the inspector, in which case they obtain the formal status of an official report. If it turns out that the name and address do not match, the Railway Police may conduct an additional investigation to find out the person's true identity. If that fails, the file is closed. If the address data are correct or have been found out, NS hands over the file to the prosecutor's office.

By stage 4, there is no more money to collect for NS, but the prosecutor's office can, in principle, prosecute the defaulters and fine them or impose other sanctions, or even bring the case to court, in which case detention may be imposed. Such cases, however, do not overly excite prosecutors, especially given their qualitatively and quantitatively increasing workload. In addition, in the past, many cases that were prosecuted failed, because prosecution took place in the region in which the offender lived, rather than in the region where the offence was committed, which gave rise to many procedural complications. Next, the perpetrators are reported often to be people with very little in terms of bank accounts or employment and for whom possibly the only sanction that can be envisaged is incarceration. Given the (in the past) overstretched detention facilities in the Netherlands, prosecution and sanctioning for these offences has been incidental at most. However, many files never reached the stage where they could be sent on for prosecution, because they simply never met the target of five UvBs in a year. Thus, in practice, many fare evaders could travel without a ticket safely and without any bother, if they took care not to amass more than five UvBs within a year, and they could, in practice, also often do so safely even if they exceeded the five yearly UvBs.

See Fig. 1.

#### New procedure during experiment (experimental condition)

Stage 1 is identical in the experimental and control condition.

*Stage 2* In the experimental condition, stage 2 is almost identical to its control counterpart. At the start of the experiment, the legal minimum for civil debt collection was 28 days and the debt collection phase was the same in both conditions for stage 2. However, during the experiment, the legal minimum was changed in terms of duration and spacing of reminders, so this procedure was extended by 2 days, from 28 days to



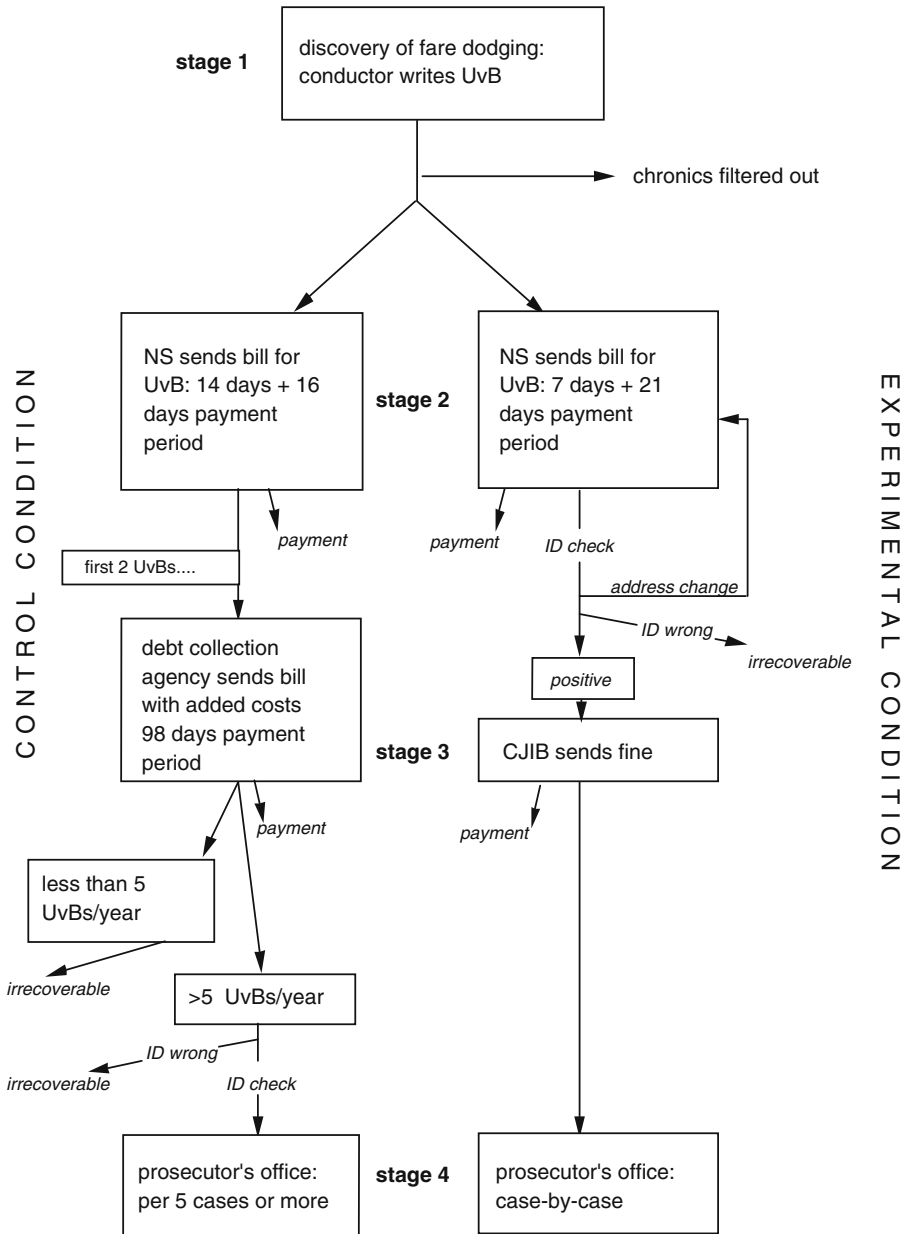


Fig. 1 Schematic representation of control and experimental conditions

30 days, in the control condition. Towards the end of the experiment, there were thus slight differences in the sense that, in the experimental condition, a reminder was sent after 7 days, with a new payment period of 21 days, while, in the control condition, a reminder was sent after 14 days, with a second payment period of 16 days. This makes

a difference of 2 days a month, a difference that was effectuated midway through the project.

Having arrived at the end of stage 2 in the experimental condition, NS checks all UvBs to see whether the name and address on the UvB match; in contrast to the check conducted by the inspector (who only checks whether the fare evader has given an *existing* address), NS checks whether this person actually lives at the given address. There are three possible outcomes: (1) the person is registered at the given address, in which case the UvB is sent on to the CJIB, the Ministry of Justice's fine collection agency, for stage 3; (2) the person is registered at a different address, in which case the UvB is sent back to stage 2 and the entire stage 2 is re-run for this person; (3) the person does not live at the given address and no address for that person can be found elsewhere in the Netherlands, in which case the UvB is irrecoverable and set aside; see Fig. 1, where the experimental condition has been outlined on the right-hand side. UvBs that are sent on to the CJIB undergo a number of further checks, and those that meet the CJIB's technical demands are entered into the CJIB's database.

*Stage 3* From the start of stage 3 in the experimental condition, CJIB attempts to recover the penalty. Fare evaders are sent a letter in which they are asked to pay and are threatened with prosecution and a criminal record if they do not. If CJIB fails to collect the money, the UvBs are sent back to NS. NS then gets the inspector to sign the UvBs, in which case they obtain the formal status of an official report, on which prosecution can be started.

*Stage 4* NS sends each signed UvB back to CJIB, who sends it on to the prosecutor's office. The difference in the final stage 4 in the control condition is that here UvBs are sent on a case-by-case basis. Prosecution—agreed beforehand with the Special Prosecutor for Traffic Offences—for these experimental cases is then started on the basis of one single incident. Also, before the start of the experiment, an explicit policy had been formulated by the Special Prosecutor for Traffic Offences that prosecutors would actually prosecute and not dismiss cases routinely for policy reasons, which happens regularly for lesser delinquent acts in the Netherlands (where prosecutors have fairly wide discretionary powers and may decide not to prosecute for 'expediency' or policy reasons).

Thus, in summary, stage 1 is identical for experimental and control conditions. Stage 2 differs in that it gives a 2-day longer payment period in the experimental condition. Stage 3 differs in that NS sends on to its debt collection agency a favourable selection of persons with UvBs, namely only those who have amassed two or fewer. On the other hand, a difference that favours CJIB is that only those who have been established to be existing persons living at the given addresses enter the experimental stage 3. In stage 3 the experimental fare evaders are actually threatened with prosecution if they do not pay; control fare evaders are asked to pay. In stage 4 those who have not yet paid are prosecuted. For the control persons this can happen only when they have collected more than five UvBs (and, in practice, happens on average when their file contains nine UvBs); for the experimental fare evaders this happens on a case-by-case basis. Thus, in the experimental condition, the certainty of punishment is increased. Also, the severity of punishment (prosecution) can be considered to be increased in comparison with that in the control condition.

## Design of controlled trial

The experiment included fare evaders from two regions ('arrondissement') that each fall administratively under one prosecution department in the Netherlands: Dordrecht and Amsterdam. These regions were chosen for the following reasons. Amsterdam, the capital, is notorious for fare dodging. The designers had then wanted to increase generalizability by adding a second region that included a smaller town. The Prosecution department in Dordrecht agreed. The so-called notorious chronic fare evaders were excluded from the experiment, as attempts to collect penalties had proven to be fairly unsuccessful. They were believed to be relatively 'undeterrable' by the sanctions imposed in the experiment, and different measures would be needed to tackle fare evasion and anti-social behaviour in this group. A chronic fare evader was defined as a person who had amassed ten or more UvBs during the preceding year.

A steering committee was formed, headed by the Special Prosecutor for Traffic Offences, which included representatives from the prosecution departments, a representative from the CJIB, from NS, as well as, in an advisory role, this author. The committee met every 6 months. All costs were born by the collaborating institutions. Day-to-day monitoring was carried out by NS.

All fare evaders from Dordrecht and Amsterdam first went through stage 1. Those who had not paid by then were randomly divided into two groups at the start of stage 2: a control group (the standard approach, as sketched above), and an experimental group (the new approach). Randomization was carried out by NS, who assigned respondents alternately to one or the other condition. Those respondents who had previously had a UvB assigned to one condition were assigned to that same condition with any subsequent UvBs. Control and experimental fare evaders from the two regions were dealt with by the same NS agency in stage 2 and by the same CJIB fine collection in stage 3.

## Data collection

The project ran for 2 years, in the sense that fare evaders from Amsterdam and Dordrecht were entered into the experimental or control conditions from April 2003 until April 2005, after which no new fare evaders were included in the experiment. Data were collected in 3-monthly intervals while the project was ongoing. NS supplied data on the control respondents, based on data from the debt collection agency. CJIB supplied information on the experimental condition. NS compiled these into overviews. After April 2005, data collection went on to investigate the extent to which penalties were effectively imposed. Stage 3 data were analysed in July 2006. For stage 4, on which we do not report here, data collection will extend to 2008, when all cases must be assumed to have been dealt with. Stage 3, by itself, constitutes an experiment that assesses the efficacy of two different penalty schemes.

During the course of the experiment, this author conducted two group interviews with a group of ticket inspectors who either worked on the train routes that were relevant to the experiment or had a lot of experience as ticket inspectors. Also, the author herself worked as a ticket inspector for one stretch during the rush hour (from Amsterdam to Brussels) on a train route in which a lot of fare evasion is known to take place. These additional data collection efforts served to obtain more in-depth

background information, as well as to gauge whether inspectors might note that fare evaders responded differently because of the new penalty scheme. No evidence for the latter was found.

## Results

The experimental condition took some time to function as designed, mainly because the bureaucracy at CJIB needed tailoring and oiling. Also, throughout the experiment, CJIB processed cases more slowly. By the last month of measurement, about 11% of all UvBs had been entered into the standard procedure, and some 9% per month had been entered into the experimental procedure. At some point, it was decided that a number of randomly selected UvBs be additionally entered into the experimental procedure, to ensure that there were approximately equal numbers in both conditions.

We carried out a chi-square test to investigate whether the percentages dispositioned by the various procedures at stage 3 were similar or different. It turned out that there was a significant difference in these percentages ( $P < 0.001$ ): the NS debt collection agency collected 1,335 out of a total of 12,318 UvBs (10.84%;  $z = -6.79$ ), against the CJIB's collecting 890 out of 12,421 UvBs (7.17%) ( $z = 6.82$ ). The standard procedure at stage 3 of the chain performed significantly better. See Table 1.

How do we explain these unexpected results? Firstly, can the results be explained by flaws in the experiment? As can be inferred from the description above, the experimental and control condition are not exactly comparable. Apart from the minor difference in payment periods that are highly unlikely to have led to a different selection entering stage 3 for the experimental and control group, NS favours its own collection agency, in the sense that it first offers the agency two UvBs from dodgers with more than two UvBs. When these have been recovered, any remaining UvBs are also sent on. In that sense NS's own debt collection agency receives a more favourable proportion of UvBs than CJIB does. However, as chronic fare evaders were excluded from the experiment, the distortion will have been notable only for those who turned into chronic offenders during the experiment. On the other hand, next to this selection mechanism in the control condition, a selection mechanism operates in the experimental condition as NS checks fare evaders' identity before sending UvBs on to the CJIB. This means that the CJIB receives only those fare evaders whose identification has been secured. Although NS again creams off a very small number of these (namely those fare evaders who moved house right between the writing of the UvB and the sending of the bill by NS), all in all, CJIB also receives a cleaned, and favourable, selection of UvBs. This selection is probably

**Table 1** Comparison of penalty schemes ( $\chi^2 = 101.91$ ,  $df = 1$ ,  $P < 0.0001$ )

Condition	Penalty Imposed	Penalty not Imposed	Total
NS (control)	1,335	10,983	12,318
CJIB (experimental)	890	11,531	12,421

a more favourable selection than NS offers to its debt collection agency: CJIB is, thus, in all likelihood, favoured.

There was little possibility to synchronize these mechanisms. The standard NS procedure was the NS procedure and had to be kept intact as such. The name and address check before sending on UvBs to the CJIB is a standard legal procedure and, as such, had to be conducted, and, given the nature of the experimental condition and the ideas behind it, it would have been impossible to instal a similar mechanism as in the control condition. The reiterative procedure—where NS re-sent the bills once it was discovered that someone had moved—had to be followed in the experimental condition, because otherwise people admonished by the CJIB could always claim that the bills had never reached them, and claims would fall flat. In addition to the inevitability of these differences, we have no reason to believe—as the differences seem to favour each condition, though in a different way—that these differences are such that they make it impossible to draw conclusions from the experiment or that it is likely that the conclusions be reversed.

Randomization was secured, as assignment was systematic, and there is no periodicity in UvBs that are sent to NS such that a systematic distortion could be suspected. There is, unfortunately, no way to test for comparability in possibly relevant characteristics such as gender, ethnicity, or previous criminal record, as NS knows nothing about the (non-chronic) fare evaders it registers, except for their names and addresses.

One explanation for the unexpected results may be that the criminal justice system has more inertia than the standard NS debt collection system. Perhaps it took longer in getting procedures to work and processing the workload, whereas the debt collection agency was working along standard, well-known procedures. However, these starting troubles took only a few months and had most to do with getting UvBs delivered to the CJIB. In addition, there was a long period before the data were analysed, which gave CJIB ample time to process cases.

Lastly, an explanation might be that an additional number of cases were added to the experimental procedure to even out the numbers. Again, however, a long period was taken for CJIB to process those cases, so that cannot explain the unexpected results.

## Conclusion and discussion

We conclude that, contrary to expectation, the experimental criminal law approach performs significantly worse than the standard approach in making fare evaders pay. In this group of fare evaders, penalties are more effectively imposed by the regular, essentially civil law, approach than by the supposedly much more deterrent strong arm of the criminal law. As such, we can also not expect any marginally better (special or general) deterrent effect of the experimental approach or a positive effect on public safety.

Our second conclusion is, therefore, that the standard approach is thus to be preferred. This is not only because more people pay up quicker in this condition, but also because, with this approach, NS gets at least some of its money back, and the experimental approach must be assumed only to cost society. This is, by itself, not a

valid argument for preferring one approach over the other, as prosecuting crime is probably generally more costly than the damage done, narrowly considered. Hidden costs (i.e. because there is no general deterrence) may, in addition, be higher. Also, in this experiment, it might finally turn out to be the case that, after stage 4 of the experiment has run its course, and we compare not only stage 3 results but include stage 4 results (with more than five UvBs per prosecution in the standard approach and a case-by-case, no policy dismissals, certain prosecution in the experimental approach), the experimental approach performs similarly to, or even outperforms, the standard approach. We believe that, even if that turned out to be the case, our conclusion still holds, as not much effect can be expected from interventions on behaviour that are meted out after such a long time.

This experiment should be viewed as one of a set of measures to tackle fare evasion. It is understandable why this experiment chose to exclude chronic fare evaders. The chronic dodger does not travel without a ticket because it is cheaper, but simply because such a person has no money at all or lives in the train. As was also shown by the Beke study (2004), many of the chronic evaders already have a criminal record, so that criminal prosecution could not reasonably be expected to have a marginal deterrent effect. The pilot study briefly described above, which was geared towards fare evasion and social danger generated by this group, gave positive results. Of the small group of 27 chronic fare dodgers targeted (NS 2005, unpublished internal memorandum), only four continued to travel on the train without a ticket; it must be said, though, that there was also some evidence for displacement. In the meantime, the new €35 penalty for travelling without a valid ticket was also evaluated (Hoefnagels 2006, unpublished internal memorandum). Around the time of the introduction of this measure, there was a level decrease in the number of fines handed out in the train and paid on the spot. There was, however, no such association with the number of UvBs. Thus it appears that the €35 penalty may have had a deterrent effect on the accidental dodgers, but that those who were used to having UvBs written out against them, mainly the calculating dodgers, were less affected.

Thus, we are faced with a group of fare evaders on whom new measures appear to have little effect, and who appear unperturbed by increased threats. The new penalty collection procedure through the CJIB entailed increased *certainty* of punishment (and this was announced as such to the fare evader) as well as increased *severity* of penalties (it had been assumed that precisely because of the threat of prosecution—the ‘strong arm of the law’—and a criminal record, essentially a non-legal sanction, people would pay). From the literature on deterrence we would thus have expected that fare dodgers faced with more certain and stiffer penalties would pay sooner than those threatened with no penalty at all. Surprisingly, they paid even less often.

This leads us to our third conclusion, namely that there exists a group of fare dodgers who know how to evade—in the experimental ‘criminal law’ as well as in the standard ‘civil law’ approach—sanctioning. Preliminary inspection of stage 4 data from the prosecutor’s offices is illustrative in this respect. These data show that a very large proportion of prosecuted cases remained ‘pending’ and without disposition for a long time. This can be explained by the fact that, in the Netherlands, luckily, criminal justice procedures have many safeguards built into them. For instance, for the defendants to be prosecuted, they must sign their writs

(‘dagvaarding’) in person, by signing for receipt either at the door or at the post office. Those who also dodge reception of this writ, for example by never opening the door or never reacting to any summons, can extend their procedures for more than a year. Of course, there are several measures of increasing intrusiveness, such as the police finally picking someone up, but all such procedures take a fairly long time. As of July 2005, 88% of fare evasion cases that had been registered with the prosecution department 1 year previously had not been dispositioned yet.

It should be noted that these elusive fare evaders do not include the chronic dodgers. This raises the question of what kind of citizens the fare dodgers studied here are. The majority of them do not budge for NS claiming its money, or for the threat of prosecution, and those for whom the threat of prosecution is made real manage to evade that deftly, at least for a while. These fare evaders slip like a piece of soap through the fingers of the machinery that attempts to catch them. Thus, it is interesting, not only for this particular experiment, but also for the study of deterrence and the effectiveness of sanctioning and sanctioning policies in general, to find out who these people are, and why they do not respond to the threat of sanctions.

Several hypotheses spring to mind. Firstly, the systems studied here are designed by officials who assume that fare evaders understand that they are threatened, as well as what they are threatened with. This is not necessarily the case. It may simply be that the fare evaders studied here do not, to a large extent, *understand* the implications of the penalties they are threatened with. It may be that the civil debt collection agency’s letters are, in a sense, easier to understand, as it is a more straightforward procedure. This might offer the beginning of an explanation as to why the results under the experimental condition were worse than those under the standard civil law condition. Secondly, it may also quite flatly be the case that these fare evaders do not read official letters and, on principle, do not open the door. They are unperturbed by any (official) request. They do not respond, and do not *know* what happens. This does not explain, however, why the experimental approach came off worse than the standard civil law one.

A surprising finding is that the fare dodgers studied here, who were caught and did not pay on the spot, did give their true name and address. If they were not intent on paying anyway, why did they not simply give a false name and escape all further fuss? Apparently, these fare evaders are not *bothered* about giving their true identity. However, the fare evaders who have made themselves known subsequently hold still and do not respond. A third explanation is, therefore, that the fare evader studied here is a so-called bald chicken (in Dutch the saying goes: ‘You can’t pluck feathers from a bald chicken’). A bald chicken has nothing and, as such, also has not much to lose. CJIB had estimated that they could make 25% pay; however, the regular group of transgressors with whom CJIB deals are traffic offenders (mainly for traffic offences that are dealt with administratively by CJIB), and this segment of the Dutch population has at least some property (and thus also something to lose), in the form of a car. It would thus be very interesting to know how many of the fare evaders studied here are employed, and how many have a criminal record. As stated several times above, the group of chronic evaders, hobo’s and junkies had been filtered out.

On the other hand, and this is our fourth hypothesis, it might be that the group studied here is not at all marginalized but simply clever and *well informed* about the

mazes in the system, or has become experienced, as Dr. Khalil had, in that no harm will come to them if they simply keep quiet and ‘duck’. The group of fare dodgers escaping penance would then better be qualified as ‘artful dodgers’. However, this last hypothesis cannot explain why the experimental condition gave worse results.

Further research is needed on these fare evaders, to understand better who they are and why they do not respond to the threat of sanctions. This is relevant not only for this particular study and for designing policy measures for fare evasion, but also theoretically. This experiment and the concurrent studies on other types of fare dodgers have shown that some groups of offenders react as predicted by theory: accidental dodgers respond when faced with stiffer penalties, and, although the study was small, it does appear as if even chronic fare evaders react to increased surveillance and tailored intervention. However, if there is a group of offenders that are unaffected by increased certainty of punishment (as well as increased severity of punishment), we need to understand the reasons for this, so that we can understand why our theories do not apply to this group.

In the meantime, various other developments took place. The Policy Unit of the Prosecutor’s Office decided, during the course of the experiment, that it would, in future, not prosecute fare dodgers, except for notorious ones or those who refused to provide identification (how this would be effectuated in practice is hard to see, as that would, at times, entail stopping the train, waiting until the Railway Police arrive to arrest someone, etc.) This means that prosecutorial policies have, in a sense, overtaken the experiment from the right-hand side, and that the findings from this experiment are of academic relevance only.

Developments at NS have also taken their course. In 2008 electronic entry gates will be installed on almost all platforms, at almost all stations, making for an effectively closed entry system that makes fare evasion technically much more difficult. Experience with such systems abroad show, however, that fare evasion can never be totally prevented and that a small and persistent group of fare dodgers and turnstile jumpers will remain.

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