Punishment as Defiance: 
Deterrence and Perverse Effects in the Case of 
Expressive Crime

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Abstract

Expressive crime contrasts with instrumental crime in that delinquents do not seek 
material benefits. Law-breakers are motivated by the desire to “make a statement”, 
possibly against majority attitudes in the society. Fighting expressive crime is com- 
plicated by this fact in that increasing intervention may have counter-effects. In this 
paper, I present a model of expressive crime. Delinquents are motivated to perform 
the illegal action because it transmits a signal. If the punishment associated with the 
crime affects the value of this signal positively, an increase in punishment may serve 
as defiance, and not as deterrence. Accordingly, the number of law violations may 
increase if those defied outnumber the deterred. Throughout the analysis, I refer to

†leroch@politik.uni-mainz.de) I thankfully acknowledge CESifo’s financial sponsorship for participation at the Conference on Law and Economics 2011 and the helpful comments from its participants. I especially thank Carlos Bethencourt for his critical remarks and constructive suggestions on an earlier version of this paper, as well as the police departments of Frankfurt, Munich and Stuttgart for their valuable support.
the case of graffiti spraying in Germany. It has been argued that this case offers an example for an increase in law violations after an increase in available punishment. This claim is discussed with reference to available data. Implications for other forms of expressive crime are drawn.

1 Introduction

Expressive crime contrasts with instrumental crime in that norm violators do not seek material benefits, but rather aim to “make a statement”.¹ Such a statement may be regarded as signal transmitting information to others, usually members of other groups, but also to the members of a perpetrator’s peer-group. The delinquents may want to convey the message that foreigners are not welcome, that they will not accept Capitalism, that their favorite football club is supported by the toughest fans in the world, or many other things. Focussing exclusively on deterrence in the form of material costs to prevent norm violations may prove ineffective in these cases because means of deterrence can positively affect the value of the signal to be sent. If the value of this signal is sufficiently high in comparison to the material costs, classical forms of legal retribution then serve rather as defiance for norm-violators than as deterrence. Policies such as “zero tolerance” then induce counter-effects in the form of more and / or more intense criminal behavior.

It has been argued elsewhere that economists usually focus on deterrent effects of legislation (see e.g. Cameron 1988, Kirchgässner 2011, or Robinson and Darley 2004). Generally speaking, most studies pointing out this specificity of the economic perspective call into question the deterrent effect of many forms of legal codification, or at least of increases of available punishment. But only few point towards counter-effects. An exception is Opp (1989), who opposes two approaches to the analysis of punishment: the deterrent (economic) approach, and what he calls the labeling approach. According to this latter approach, punishment may promote crime by affecting “the values of certain other variables ... which in turn have a direct effect on deviant behaviour” (p. 421). Crucial for

¹See e.g. Cooter (1998) for an early work in the field of an economic analysis of expressive crime. Recent analysis of expressive behavior and the importance of signals offer insights to such apparently (at first sight) irrational behaviors as extreme forms of violence and the formation of gangs (Dnes and Garoupa 2010).
this crime-promoting effect are indirect effects of punishment, which change the (social) incentive structures for perpetrators. Opp finds support for the defiance of perpetrators in examples of legal and illegal political protest. But he also finds that we still “have to examine under what conditions punishment triggers off social processes, i.e. has indirect effects which in turn increase the extent of crime, reduce it or do not change it at all. Up till now advocates of the labeling approach have not advanced any satisfactory explanation in this respect” (422). The present study offers a model-theoretical description for the analysis of such social processes leading to an increase in the extent of crime.

Obviously, the specific motivation of delinquents, which usually differs from case to case, requires careful analysis. It may therefore prove useful to focus on a single form of crime which may be considered prototypical for expressive behavior to be able to clearly single out the relevant motivating factors in this specific case. I choose the painting of graffiti as such a specific case: Deliberately spraying paint on walls or other publicly visible sites in a more or less artistic fashion is in general taken to be predominantly expressive and to bear meaning. In the words of Cooter (1998: 606): “Something has meaning that conveys information by symbols. To illustrate, graffiti on a wall has meaning, whereas the marks on the wall from weathering have no meaning.” Further, there is no material interest whatsoever to perform the crime on behalf of the delinquents. To the contrary, they are willing to buy spray cans and other utensils to utter their statement, and also face positive expected costs deriving from prosecution.

In contrast to e.g. Cooter (1998), I do not focus on some norm possibly existing in the community of graffiti-sprayers or society as such. Rather, I reduce the incentives of graffiti-sprayers to the value of having sent a signal. Technically speaking, the values of different signals are usually considered to increase with the costs of signaling. In the case of graffiti, the signal value from spraying is a function of the expected punishment associated with detection. If someone paints graffiti under the threat of high sanctions, this

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2 Cooter then demonstrates how the law, when considered to express social values, may change both social norms and individual values.

3 Of course the evaluation of this signal is derived via a norm. Spraying is of positive value to graffiti-sprayers only because they follow the norm that “spraying” is a good thing to do. But I take (possible) delinquents’ intrinsic attitudes to be unaffected by legal action. Therefore, the norm which attributes value to the action of “spraying” remains unchanged as well.
implies that he is a strict opponent of the current society - one of the prime motivations for sprayers, as I will argue below -, and hence his message makes a stronger statement. Therefore, his respect in the scene will increase as well.

In order to make causal connections for graffiti-sprayers as plastic and clear as possible, I will mainly focus on the scene in Germany when it comes to specific motivations. The case of Germany in general also offers the advantage of confronting us with a case close to a natural field experiment on the effects of an increase in punishment. In 2005, the national government of Germany redefined graffiti delicts as felony instead of as misdemeanor. With this redefinition came the possibility to heavily increase punishment in case of conviction, while other factors such as the amount of policing remained roughly constant.\(^4\) Last but not least, note that despite the specificity of the illustrative case, the scope of analysis is not limited to Germany because the graffiti scene defines itself internationally and is well-connected (Wunderlich 1999: 34).

Before proceeding, section 2 will introduce relevant definitions and the legal background to graffiti in Germany. A formal analysis follows in section 3. In section 4, tentative evidence from several German cities relating to graffiti are presented and discussed. Section 5 provides a concluding summary and policy implications.

### 2 Graffiti: Background

The term graffiti not only refers to the well-known sprayings on walls. It also covers painting with markers or felt pens, deliberately scratching plain surfaces (mostly windows), and “painting” with the use of acids (called “etching”). Most of these activities are illegal, although several cities and private persons provide areas where painting graffiti is authorized. There also exist forms of graffiti which per se are not strictly speaking illegal. These cover e.g. “reverse graffiti”, which is the cleaning of some parts of a dirty surface such that a picture appears, for instance on old and grey concrete walls. Throughout the following analysis I will refer to the illegal activity only.

In slight misuse of words (according to the rhetorical practice in the scene), I will use

\(^4\)In fact, this is a conservative statement. When considering other forms of policing, e.g. by private security firms, policing is likely to have increased.
the short hand “sprayer” or “writer” for a person painting graffiti, and the terms “tag”, “piece”, and “graffito” interchangeably for a single picture.\(^5\) Via their tags, sprayers or writers are identifiable, i.e. a piece can directly be assigned to a writer.\(^6\)

It is usually argued that a large share of graffiti-sprayers protest against a Capitalist form of social organization by spraying.\(^7\) By spraying, they send the message that they are dissatisfied with the current form of social organization and assure other graffiti-sprayers their sympathy and support. The idea is to protest against the fact that only people with a sufficient amount of money are able to shape the appearance of the public, physical environment. Nobody, they state, asked them for permission to construct buildings of a style they dislike. Nor did anybody ask them for permission to use a specific color to paint it. All these decisions were made by those who payed for the facility. In the case of public transportation graffiti-sprayers argue that their graffiti are rejected by public transportation officials because the uniform appearance of trains and stations has to be assured. Yet, the very same officials allow different advertisements on these trains and stations, making the officials’ argumentation inconsistent - at least in the eyes of the graffiti sprayers.

Other motivations include the will to express an artistic desire as well as merely gaining recognition or attention of other graffitists by managing to “sign” objects such as trains or walls. In fact, “Taki 183”, who is said to have been one of the first graffitist and who placed his pseudonym on several locations in New York City in the 1960s, gained followers who began to consider him as famous because an increasing amount of people recognized and remembered the pseudonym (see NYT 1971). In order to get famous themselves, these followers began placing their “names” too. With the exception of vandalism, my argument remains valid for all these motivations.

Illegal graffiti are not only associated with externalities in the form of violations of aes-

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\(^5\)The term “tag” actually refers to the signature of a sprayer. These tags are usually part of the graffito, in some cases a sophisticated version of the tag is the complete graffito.

\(^6\)This statement is not undisputed. Sprayers at times copy from others, a practice called “biting”. Several sources argue that an unambiguous identification of the sprayer by the graffito is not possible (see Typeholics and Montana 2003). Nevertheless, in most parts of Germany, the assignment of other tags to a defendant being accused of having painted one specific piece is common legal practice.

\(^7\)The statements on what motivates sprayers are taken from Rheinberg and Maing (2003), Typeholics and Montana (2003) and Wunderlich (1999). Additional important motivations, which were mentioned by police officials, appear to be pure vandalism and the seeking of “thrill”.
thetic feelings, they also cause financial damage. Though accurate data are not available, estimates for Germany range from EUR 200 mil. per year (for 2002, see ProPK 2011) to EUR 500 mil. per year (for 2005, see Bundestag 2005). Additionally, graffiti is said to cause a feeling of insecurity. Recent experimental research also demonstrated that graffiti may implicitly increase the appearance of other forms of anti-social behavior (Keizer et al. 2008).

3 A Static Model of Graffiti

As outlined, sprayers can be said to primarily pursue their activity in order to send signals. Assume for the sake of simplicity that the signal sent is the overall number of tags a sprayer set in his neighborhood. However, not every sprayer is met with equal respect in the scene. A certain threshold of known pieces is required to begin to “make your name”. Therefore, initial graffiti of one sprayer do not yield as much “per piece” benefit in terms of prestige as do later works. Further, once a name is well respected, additional graffiti do not significantly contribute to the fame of their creator either, thus again leading to a decrease in their marginal contribution to fame.

A potential sprayer has to decide upon the number of graffiti or tags \( \tau \) he will spray. For the sake of convenience, assume there is some maximum number of tags one sprayer is able to place, and that \( \tau \) is normalized according to this maximum, such that \( \tau \in [0, 1] \). When being detected and convicted, which I for the sake of simplicity assume will happen with the probability \( \tau p \), the sprayer will face the costs of conviction \( c \), which are taken to be the same across individuals. These costs are a function of both the number of graffiti

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8I therefore exclude “positional good effects”. Some tags could be of more value concerning signaling than others due to their placement. For instance, managing to set your tag on the parliament would probably be of more signal value than setting it on a bridge in the middle of nowhere. I also exclude the qualitative difference in the pictures, which in reality are an important component for the individual fame of sprayers.

9The results obtained later rely on the existence of a concave part of the signaling curve. Hence, it could be argued that the initial convex part could be dropped. For the sake of intuition, it is nevertheless kept.

10I thus assume that conviction does not have an impact on, e.g., the legal activity of the sprayers like job opportunities. This assumption is, of course, debatable. I still stick to it as many sprayers are unemployed and face rather few job opportunities (Wunderlich 1999). Further, many illegal sprayers are younger than 21, the age of entrance into the scene partly being only 11 or 12 years. The police of Cologne, for instance, reports that in 2010 roughly 50% of caught sprayers are younger than 17, and roughly 15% are younger than
and the legal regime, \( r \).

Typically, pieces are documented even if the writer is not found immediately. If a sprayer is convicted for having sprayed a specific piece, this piece is compared with other documented pieces. In case sufficient similarities are found to other pieces, the most important one being the “tag” (i.e. the sprayer’s signature), sprayers will have to pay compensation for the removal of these other pieces as well and will also be punished harsher (see Typeholics and Montana 2003).\(^{11}\) If the sprayer goes undetected, he will enjoy the prestige of having placed a graffito, meaning that his utility will increase by having sent his signal \( s \), which in turn is assumed to be a function of both his overall number of tags and the legal regime, i.e. \( \tau \) and \( r \), respectively.

Individual preferences over the value of the signal are assumed to be dependent on the sprayer’s type. I.e., sprayers are assumed to take different account of the signal value in their utility function. Expected utility functions may then be specified as

\[
    u = (1 - \tau p) s(\tau, r) \theta - \tau pc(\tau, r),
\]

where \( \theta > 0 \) identifies sprayer types. Sprayers’ valuations of the signal they send by spraying vary in proportion to \( \theta \), so that the preferences of the set of sprayers are described by the distribution of \( \theta \). The parameter \( \theta \) follows a density function \( f(\theta) d\theta \), which is defined on the interval \([\theta_L, \theta_H]\), subscripts \( L \) and \( H \) representing “Low” and “High” evaluation of the signal, respectively. Assuming \( c \) to be linear in \( \tau \), we may then graphically illustrate this case as in figure 1.

By inspection of figure 1 we observe that basically the sprayers are distributed between the two extrema of preferences. Whereas type-\( L \)-sprayers only place relatively little value on the signal, type-\( H \)-sprayers evaluate the signal very highly.

Sprayers maximize their utilities by choosing the number of tags. Formally, the following first order condition will have to be satisfied, which constitutes an implicit function of the optimal number of tags, \( \tau^* \).\(^{12}\)

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\(^{11}\) Note that there are some regional differences in Germany in the legal practice of comparing graffiti.

\(^{12}\) Obviously, in order for sprayers to spray it is also required that the participation constraint is fulfilled.
Figure 1: Signal values and costs

\[(1 - \tau_p)s_r\theta - ps\theta - pc - \tau pc_r = 0. \tag{2}\]

Note that the optimal number of tags is dependent on the type of the individual sprayer. Given a specific legal regime, the higher the sprayer’s type, the more tags he will place in optimum. Figure 2 illustrates this point.

A change in punishment, which I label a change in the legal regime \(r\), now changes the signal value within the group. Placing tags in a regime of severe punishment yields a large degree of respect in the scene, and the degree to which this respect is represented in individual preferences is dependent on the type of the sprayer, \(\theta\). Since I focus on illegal spraying activity, it seems reasonable to assume that an increase in punishment will be associated with an increase in the value of the signal for all relevant sprayers. For low levels of \(\theta\), the additional evaluation will increase by a relatively small amount as compared to high levels of \(\theta\). Graphically speaking, the signal curve tilts upward around the origin. (The corresponding cost curve obviously tilts as well.)

By applying the Implicit Function Theorem to (2), we find that a change in the legal regime has the following effect on the optimal number of tags, \(\tau^*\), by type \(\theta\), where \(SOC\) represents the second order condition of utility maximization with respect to choices of \(\tau\):

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The overall benefits from spraying the optimal number of tags need to exceed their costs.
Figure 2: Optimal number of tags per type

\[ \frac{d\tau^*}{dr} = -\frac{(1 - \tau_p) s_{\tau_i} \theta - ps_r \theta - pc_r - \tau pc_{rr}}{SOC}. \]

Under the given assumptions, this term will be positive for an interior solution if the following inequality holds:

\[ \frac{p}{(1 - \tau_p)} > \frac{s_{\tau_i} \theta}{s_r \theta - c_r - \tau c_{rr}}. \]

(3)

(4)

Obviously, inequality (4) will hold if the change to a stricter regime will lead to a sufficiently large increase in the marginal signal value of tags.

Figure 3 illustrates this argument graphically for sprayers of type \( i \). Under a lenient regime, \( r_1 \), these types will spray \( \tau_{1i}^* \) tags. A change to a harsher regime \( r_2 \) will increase the value of the signals sprayers send by setting tags, and the signal curve tilts upwards. I call this increase in signal value *defiance effect*. Would the regime change leave marginal costs unaffected, writers would choose to set \( \tau ~ > \tau_{1i}^* \) tags. If marginal costs would be affected by the regime change, the optimal number of tags would be reduced as compared to \( \tau ~ \). Put differently, a *deterrence effect* from the regime change would occur. Which of the two effects dominates obviously depends on their relative size.

Extending this argument to all types of sprayers, it follows that under the new regime...
some sprayers of low type, i.e. relatively low values of $\theta$, may face higher costs than benefits and thus they are indeed deterred. Those remaining, however, could show a higher spraying activity, depending on the relative increase in marginal benefits and marginal costs. This effect may offset the deterrence effect if relatively few people drop out or the overall number of tags by low activity sprayers ($\theta_i$ types below a “critical sprayer”) is relatively low compared to the others. The critical sprayer will be the one who places the same number of tags under the new regime as under the old. Formally,

$$\frac{\partial \tau^*}{\partial r} = \frac{- (1 - \tau p) s_{\tau r} \theta - ps_r \theta - pc_r - \tau pc_{\tau r}}{SOC} = 0.$$  (5)

Equation (5) constitutes an implicit function of $\tau^*$. From the Implicit Function Theorem, it follows that the optimal number of tags will remain unaffected by a regime change if:

$$-pc_r - \tau pc_{\tau r} - p \theta s_r + (1 - \tau p) \theta s_{\tau r} = 0.$$  (6)

The critical sprayer can thus be formally represented by the type $\theta_{crit}$, for which it holds that:
Figure 4: Effect of a regime change

\[ \theta_{crit} = \frac{pcr + \tau pcr_r}{(1 - \tau p)s_{rr} - ps_r}. \] (7)

Figure 4 illustrates. Possible effects of a change in legal regime from a relatively lenient regime \( r_1 \) (illustrated in grey) to a stricter regime \( r_2 \) (illustrated in black) are depicted for three types of sprayers, namely low-type, high-type, and critical-type. The arrows should indicate the changes occurring due to the shift in regime. Whereas the low-type sprayers will be completely deterred by the new legal regime and not spray at all under \( r_2 \), the defiance effect for high-type sprayers will outweigh the deterrence effect in the case illustrated. They will increase their spraying activity. As indicated in the formal analysis above, the critical sprayers will not alter their spraying activity. For them, the defiance effect equals the deterrence effect.

Whether or not the overall number of tags in the society will increase or decrease by the regime change now depends on two components. First, it depends on the number of sprayers actively being deterred relative to those who are defied. Second, it depends on the
size of the defiance effect, i.e. on how many more tags defied sprayers will place, relative to the number of tags deterred sprayers placed previously. Formally, the overall optimal number of tags under a given regime, aggregated over all types \(\theta\), can be described by a function \(\Omega(\theta, \tau^*, r)\). The lowest sprayer type, \(\theta_L\), will, given a regime \(r_1\), spray an amount of \(\tau^*_L\) number of tags, the highest sprayer type \(\theta_H\) will spray \(\tau^*_H\) tags. Aggregating over all sprayer types, the overall number of tags under regime \(r_1\) are then:

\[
\int_{\theta_L}^{\theta_H} \int_{\tau^*_L}^{\tau^*_H} \Omega(\theta, \tau^*, r) \, d\theta d\tau^*
\]

(8)

Each sprayer type will react individually to a regime change to \(r_2\). The change in the number of tags then simply is:

\[
\int_{\theta_{Crit}}^{\theta_H} \left( \int_{\tau_{Crit}}^{\tau^*_H} \Omega(\theta, \tau^*, r) \, d\tau^* \right) \, d\theta - \int_{\theta_L}^{\theta_{Crit}} \int_{\tau_{Crit}}^{\tau^*_L} \Omega(\theta, \tau^*, r) \, d\theta d\tau^* - \int_{\theta_{Crit}}^{\theta_H} \int_{\tau_{Crit}}^{\tau^*_L} \Omega(\theta, \tau^*, r) \, d\theta d\tau^*
\]

(9)

The first term in brackets of (9) represents the difference in the number of tags by those sprayers who keep placing tags, i.e. those of type \(\theta_i \in (\theta_{Crit}, \theta_H]\). These will increase their activity. The second term illustrates the number of tags which will not be placed due to deterrence. Sprayers of types \(\theta_i \in [\theta_L, \theta_{Crit})\) do not evaluate the signals high enough to compensate for the higher expected costs of being detected and will therefore “exit the market”. Their individual (previous) optimal amount of tags, \([\tau^*_L, \tau^*_H]\), will thus fall away.

Intuitively, the number of tags will decrease if relatively many people are deterred and/or the increase in signal value from the regime change is not very high. The first of these conditions relates to both the increase in punishment and the homogeneity of the group to be deterred. If the group is very homogenous, a regime change can either deter a very large fraction of this group, or a very small fraction (depending on the size of the regime change). The second condition relates to the intentions of the delinquents. If they openly oppose a given regime, and this regime becomes stricter, the signal value increases due to the increase in costs of signaling.
This effect is the core difference between expressive and instrumental crime. Whereas expressive crime is primarily motivated by the sending of signals, instrumental crime is primarily motivated by material interests. Hence, the possibility of a perverse effect, i.e. an increase in criminal activity due to an increase in punishment, is to be expected in cases of expressive crime.

4 **Evidence from Germany**

In Germany, the legal code under which graffiti incidents are dealt with changed in the year 2005. The basic idea of this legal reform was to deter sprayers and facilitate the reporting of graffiti. Both aspects have increased the expected costs of spraying graffiti. In the following two subsections, I will first outline the legal amendment in greater detail before I will turn to the data referring to graffiti.

4.1 **Legal Background**

Before the year 2005, unauthorized spraying of graffiti was punishable in Germany as property damage only if the surface it was sprayed on was damaged, either by the act of spraying itself, or in the process of removing the paint. A detected offender would be liable for compensation for the costs of removing the paint, but he had to fear no further prosecution as the offense was categorized as misdemeanor. Thus, the only true deterrent effect arose from civil law and the threat to have to pay compensation for the damage.\(^{13}\)

In 2005, the German government amended the criminal code, which made it possible to convict detected sprayers for property damage if they unauthorizedly changed the appearance of a foreign object in a non-negligible and non-momentarily manner.\(^{14}\)

\(^{13}\)In some cases it is reported that the claimed damages tremendously exceeded the true costs. Wunderlich (1999) reports of one case in which a caught writer was presented a claim of DM 10,602 (roughly USD 7,700) for removal of his tags he had placed at a bus stop and a fuse box. After his lawyer asked for the bill, this amount was reduced to DM 362 (roughly USD 260). Such behavior could possibly be regarded as the effort of frequent victims of spraying to deter offenders or become compensated for other (graffiti) damages as well.

\(^{14}\)For the sake of precision, the amendment affected §§303,304 of the StGB (the German criminal code), which covers property damage.
the offense could be judged as felony instead of a mere misdemeanor. Thus, the expected costs from spraying originating in civil law were accompanied by costs from penal law. This amendment was partly motivated by the desire to fight graffiti by increasing the direct deterrent effect of the law. Another reason was to facilitate attestation of damage. Before the amendment, an expert assessment of the damage had to be provided. After the amendment, the mere claim of the victim that damage was done was sufficient for prosecution. Again, this effect increased the expected disutility from spraying and thus theoretically should lead to a reduction of the crime.

4.2 Data on Graffiti

The data presented in the following are provided from local police departments in Frankfurt, Munich, and Stuttgart, as well as from published parliamentary records from Berlin and Hamburg. Thus, the data cover five out of Germany’s six biggest cities, which began installing task forces against graffiti in the early 1990s. However, a proper data basis on graffiti was not implemented until 2008. Before 2008, data were collected by each police department on a local basis and not prepared for publication on a standardized basis throughout Germany. In 2008 the statistical procedures for recording changed due to new aggregation policies.\textsuperscript{15} These were induced by the Federal Criminal Police Office’s beginning to report and publish graffiti incidents separately from other forms of property damage.\textsuperscript{16}

As a first rough picture of developments, the number of cases reported in the cities indicated is illustrated in figure 5 below. For Berlin the data only represent a share of overall incidents. This is due to the fact that parliamentary data covering the years previous to 2005 only cover incidents falling in the domain of a local task force, which is officially

\textsuperscript{15}These new policies were named as reason for the police departments of Berlin and Hamburg to refuse to provide data, because numbers on cases recorded previous to 2008 would not be comparable to those after 2008.

\textsuperscript{16}To clarify, the local police departments now report their data to the State Offices of Criminal Investigations, which then report the data to the Federal Office. Both State and Federal Offices publish statistics related to various forms of criminal behavior, since 2008, as stated, reporting data on graffiti separately. Further, the assignment of incidents to regions changed in 2008. Before 2008 graffiti found on extra-regional trains was reported by the Federal Police. Thus, such incidents of graffiti did not appear in the statistics of the city where it was placed on the train.
operating as a unit of the State Office of Criminal Investigations. Data for the remaining incidents, which are dealt with by the local police, are available only from 2005 onwards. For these years, the number of incidents reported by the task force make up roughly 10% of those reported by the local police. It appears noteworthy that in all cities a decreasing trend is observed in the years 2000 to 2005, and an increasing trend for the years 2005 to 2009. Comparing numbers for the years 2009 with those of 2005, the increases appear quite dramatic: Hamburg recorded 106% more graffiti, Berlin 127%, Frankfurt 258%, Munich 73%, and Stuttgart 154%.

Yet, the number of recorded cases can obviously not be directly taken as proof that the underlying true number of graffiti has seen a similar trend. These data rely on the reporting behavior of citizens, and thus depend on unobservable variables (see e.g. Cameron 1988 on this issue). Because the legal amendment facilitated attestation of damage, it is most likely that the share of victims of graffiti indeed claiming damage has increased. In the following I will assume this to be the case.

As one could reasonably expect, the increase in reported cases lead to a decline in clearance rates. Figure 6 below represents the developments of clearance rates in the three cities for which data are available. Comparing the years 2009 and 2005, Berlin saw a decline of 18% in clearance rates, Hamburg a decline of 21%, and Stuttgart of 19%.

17Note that the numbers for Berlin refer to those of the local police, i.e. not to those of the State Office as the numbers above do.
As the number of recorded cases increased, the cases per suspect also increased, as Figure 7 below shows, again only for those cities where data are available. Since the legal amendment, 47% more cases were recorded per suspect in Berlin, 53% more in Stuttgart, and 2% less in Munich. Similarly, the number of cleared cases per suspect increased by 20% in Berlin and 24% in Stuttgart.

4.3 Anecdotal Evidence

All trends in the data outlined above need not correspond to an overall increase in the number of graffiti. A change in reporting behavior may likely have increased the number
of cases recorded. As this number increased, the share of these cases which were cleared may have been reduced. Inasmuch as it is practice in Germany to assign graffiti to sprayers even if they are not directly caught on the scene, the number of cleared cases per subject may have likely increased. Thus, the data cannot be taken as proof for the correctness of predictions outlined in the theoretical model.

Anecdotal evidence, however, may provide a slightly qualified picture. There is evidence that indeed the signal value of spraying appears to have increased. Several sprayers openly claimed that the “thrill of spraying” increased as well as that the “reputation from spraying” would rise under the new regime and that this lead to an escalation of their spraying activity (NDR 2010). Even if such assertions may be cheap talk, the sprayers’ pointing out of an increase in reputation seems noteworthy in light of the argumentation presented above.

A rise in reputation may have also occurred due to a rather long public debate surrounding the legal amendment which assured the sprayers some attention. The desire to deter sprayers was one of the prime topics in this debate. Hence, not only did the value of the signal rise by increasing the expected costs attached to the possible change in regime. It probably further rose because the public debate proved that the “outside aim” of sprayers, to inflict (psychological) costs on the “money dominated society”, was achieved.

The hypothesis that a change in enforcement may attract sprayers also finds support from evidence found in Munich. 18 Here, the officials of the public transportation system implemented a policy prohibiting sprayed cars to operate. The aim of this policy was to prevent sprayers from sending their signals; sprayed cars were kept in the depot until the paint was removed. Further, depots were more heavily surveilled. A subgroup of spanish sprayers now focused on the cars in depots. For them it was sufficient to take a picture of their tags and place it in their blackbooks - a personal photo-documentation sprayers build up of their own graffiti - or in the world wide web. Apparently, this group of sprayers was previously not especially conspicuous, implying that the change in regime made spraying more attractive for them.

These anecdotes imply that it is realistic to assume that a share of sprayers were not

18The information provided here was communicated in a personal email-exchange with the police of Munich.
deterred but defied by the change in political regime. In light of the model presented in
the previous section, these sprayers would account for the “high-type sprayers”. Whether
or not they can overcompensate for some of the probably deterred sprayers cannot be said
due to the lack of data.

5 Concluding Summary and Policy Implications

Expressive crime is generally not motivated by material interests. Although deterrence is
possible if punishment is sufficiently harsh, focussing on material components (such as
punishment) in order to deter potential delinquents may prove to be a rather costly way to
fight this form of crime.\(^\text{19}\) I have argued that it may even evoke counter-effects and that
the rate of crime may actually increase with the increase in punishment. At least this is
the case when the criminal act is intended to send a signal to fellow-delinquents. The most
promising strategies to reduce crime rates should in these cases focus on the elimination
of the signal value or the signal as such. Though the argument throughout focused on
graffiti, the theoretical analysis holds valid for other forms of expressive crime, as long
as the motivations for delinquents are similar. More specifically, crimes like abuse of soft
drugs (at least of youths), but also more severe forms of crime such as terrorism come to
mind. These share the fact that perpetrators want to transmit a signal, be it that they are
“cool”, they do not share the capitalist attitudes of mainstream society, or they oppose the
increasing “Westernization” of the world.\(^\text{20}\)

In order to again gain plasticity and concreteness, I outline two policies related to
graffiti which, in light of the model presented, appear more promising than an approach
purely based on deterrence. These affect the value of the signal and the signal as such in
respective order. Firstly, a policy directed at the value of the signals in the case of graffiti

\(^{19}\)Note that already Becker (1968: 176) mentioned that policing appears to be the more effective means to
deter delinquents than punishment. This observation is supported by recent literature, for instance by Klick
and Tabarrok (2005). They analyze the effects of a change in the number of patrolling policemen due to
different terror alarm levels in Washington D.C. on recorded crime rates. Their main finding is that crime
decreases as policing increases.

\(^{20}\)The availability of substitutes for sending signals is obviously also of importance for a more general
analysis. Juveniles may find many ways to signal their “coolness”, whereas potential terrorists may find
significantly less ways to meaningfully express their distaste of “Westernization”.

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could for instance be to legalize graffiti. However, it could well be that this would attract the previously deterred sprayers. In terms of the model presented above, these only take comparatively small account of the signal value in their preferences. Thus, a reduction of the signal value lowers their utility level only to small degrees. The previous deterrent effect, however, would be eradicated, thus pushing these writers “back into the market”.

Anecdotal evidence for the success of a policy eliminating the signals as such is, secondly, provided by the subway of New York City. Beginning in the 1970s, graffiti here increasingly became considered a serious problem. But by 1989, the city managed to declare its subway trains free of graffiti. Apparently, the way to success in the fight against illegal graffiti was to not let sprayed cars run (Kunath 2009). By managing to enforce this strategy, the traffic authority managed to prevent signals from being transmitted, thereby eliminating the incentive to spray on trains. Due to its success, this strategy was copied by train authorities in many other cities world-wide, including Hamburg (Typeholics and Montana 2003), with similar success as in New York City. Yet, other cities, as the city of Munich, were confronted with unexpected difficulties when implementing this strategy, as outlined above.

The general feasibility of the policy directed at the signal as such is, however, somewhat limited. A sprayed wall, for instance, cannot simply be hidden away to re-paint, but stands publicly for some time. Still, in the city of Berlin house owners appear to rather paint over graffiti immediately instead of calling the police.21 Private initiative, possibly also in the form of using more expensive repellent colors or sealings, may therefore prove more useful than public intervention.

As these examples indicate, in many cases punishment remains a defiance - not only for the delinquents, but also for the legislators. Properly understanding the motivations of the perpetrators may facilitate this task for the officials.

21Report of the police of Berlin made in a personal telephone conversation.
References


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