



Psychology, Crime & Law

ISSN: 1068-316X (Print) 1477-2744 (Online) Journal homepage: <http://www.tandfonline.com/loi/gpcl20>

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To cite this article: Nathalie-Sharon N. Koster (2017) Victims' perceptions of the police response as a predictor of victim cooperation in the Netherlands: a prospective analysis, *Psychology, Crime & Law*, 23:3, 201-220, DOI: [10.1080/1068316X.2016.1239098](https://doi.org/10.1080/1068316X.2016.1239098)

To link to this article: <https://doi.org/10.1080/1068316X.2016.1239098>



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Accepted author version posted online: 26 Sep 2016.
Published online: 04 Oct 2016.



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Victims' perceptions of the police response as a predictor of victim cooperation in the Netherlands: a prospective analysis

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ABSTRACT

The current study prospectively explores whether crime victims' willingness to cooperate with the police is predicted by victims' perceptions of police officers' behaviour with regard to their case through their perceptions of police legitimacy. Structural equation modelling was used to examine the interrelationships between the study variables while controlling for baseline values among a sample of 201 crime victims in the Netherlands. Results indicate that victims' perceptions of procedural justice and police performance were predictive of both indicators of perceived police legitimacy (i.e. obligation to obey the law and trust in the police). Moreover, victims' willingness to cooperate with the police was indirectly predicted by victims' perceptions of procedural justice and police performance, through their perceptions of obligation to obey the law. These findings suggest that police officers may play an important role in stimulating victims' willingness to cooperate with the police by treating victims fairly and by taking investigative actions to solve the crime.

ARTICLE HISTORY



Received 21 September 2015
Accepted 31 August 2016

KEYWORDS

Crime victim; procedural justice; police performance; legitimacy; cooperation

Introduction

One of the general indicators of police performance is the crime detection rate. This rate is the number of crimes in which at least one offender was found divided by the number of crimes reported to the police per year (Ahlberg & Knutsson, 1990). Crime detection rates differ considerably across countries in Europe, but overall less than half of the reported theft cases and violent incidents are solved (Smit, Meijer, & Groen, 2004). Although crime detection rates are difficult to compare across countries, detection rates of these types of crimes are particularly low in the Netherlands (Smit et al., 2004). Moreover, while detection rates in countries such as the United Kingdom, Republic of Ireland, and France *increased* from 2005 to 2009, these rates *decreased* in the Netherlands (National Audit Office, 2012). In 2012, crime detection rates for crimes like burglary, violent robbery, and assault were below 50% (Ministry of Security and Justice, 2013). As these crimes may have a great impact on victims, one of the key priorities of the Dutch Ministry

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of Security and Justice is to improve the detection rate for these crimes (Ministry of Security and Justice, 2013).

Unsolved cases of high-impact crimes may result in disappointed victims, who question the importance of further cooperation with the police, for example, in case of subsequent victimizations. This is undesirable for the criminal justice system because the police depend heavily on the cooperation of crime victims to investigate their victimization and to arrest the offender or offenders as victims may provide detailed and crucial information concerning the circumstances of the crime and the offender or offenders (Cirel, Evans, McGillis, & Whitcomb, 1977; Sampson, Raudenbush, & Earls, 1997; Skogan & Antunes, 1979). Moreover, as crime victims are more likely to be victimized in the future than non-victimized individuals (Nicholas, Povey, Walker, & Kershaw, 2005; Pease, 1998; Polvi, Looman, Humphries, & Pease, 1990; Polvi, Looman, Humphries, & Pease, 1991), they may become relevant sources of information for the police in the future rendering it even more important not to discourage them to cooperate with the police.

Previous studies suggest that several factors influence crime victims' decisions whether or not to report their victimization to the police. For example, studies by Baumer (2002), Hart and Rennison (2003), and Tarling and Morris (2010) suggest that the seriousness of the crime is an important determinant of crime reporting; the more serious the crime, the more likely victims will report their victimization to the police. In addition, previous research has revealed that women and older victims are more likely to report their victimization than men and younger victims (Baumer, 2002; Hart & Rennison, 2003). While these factors provide useful information on the determinants of crime reporting, they lay mostly outside of the influence of individual police officers, as police officers are unable to influence the seriousness of the crime, the victims' sex, or age. In addition to these factors, studies suggest that crime victims' decisions to cooperate with the police or not may depend on their previous experiences with the police (Ipsos MORI, 2003; Kidd & Chayet, 1984; Shapland, Willmore, & Duff, 1985; Ziegenhagen, 1976). As individual police officers might be able to influence victims' perceptions of their experience with the police, the current study seeks to prospectively explore whether victims' perceptions of the police response in their case relate to their willingness to cooperate with the police in the immediate future. The current study is guided by the theoretical framework of Tyler and colleagues (Lind & Tyler, 1988; Sunshine & Tyler, 2003; Tyler, 1990, 2003; Tyler & Fagan, 2008; Tyler & Huo, 2002; Tyler & Lind, 1992).

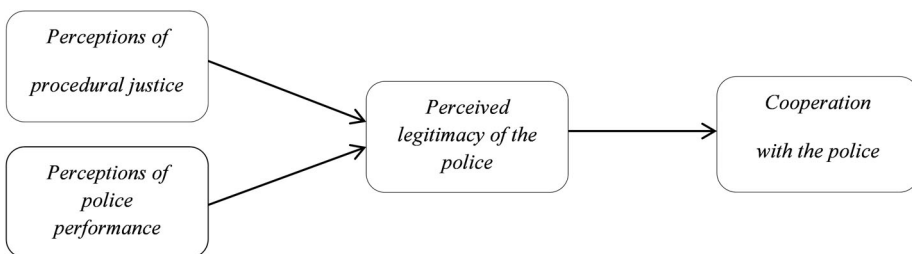


Figure 1. Graphical depiction of the current study's framework.

Theoretical framework

Tyler and colleagues' theoretical framework (see [Figure 1](#); [Sunshine & Tyler, 2003](#); [Tyler, 1990, 2011](#)) particularly focuses on citizens' perceptions of police officers during direct encounters in relation to cooperation with the police. According to this framework, negative experiences with police officers can result in less positive opinions of police legitimacy and, subsequently, less willingness to cooperate with the police in the future. By contrast, positive experiences with police officers may lead to more favourable views of police legitimacy and, subsequently, more willingness to cooperate with the police in the future ([Lind & Tyler, 1988](#); [Sunshine & Tyler, 2003](#); [Tyler, 1990, 2003](#); [Tyler & Fagan, 2008](#); [Tyler & Huo, 2002](#); [Tyler & Lind, 1992](#)).

Whether a contact with the police is perceived as positive or negative depends in a substantial way on how police officers interact during interpersonal encounters ([Symonds, 1975](#)). Experiences with the police will be positively evaluated when police officers fairly treat those with whom they interact (i.e. procedural justice), according to [Tyler \(1990, 2011; Sunshine & Tyler, 2003\)](#). In Tyler's theoretical framework, the importance of a respectful treatment is emphasized. Being offered a respectful treatment during direct encounters is important to citizens, as this communicates that one is a respected member of society who is worth fighting for ([Wemmers, 1996](#)). By using fair procedures, police officers can demonstrate that the police pursue the values shared in society. Consequently, it shows that the police institute is entitled to prescribe appropriate behaviour (i.e. police legitimacy; [Tyler, 1990; Weber, 1978](#)).

Besides perceptions of procedural justice, perceptions of police performance are argued to shape perceived police legitimacy as well, though to a lesser extent ([Sunshine & Tyler, 2003; Tyler, 1990; Tyler & Huo, 2002](#)). Police performance in general relates to perceptions that the police are able in effectively fighting crime, but with specific regard to the victims' case, police performance relates to the investigative actions taken by police officers ([De Mesmaecker, 2014; Elliott, Thomas, & Ogloff, 2012](#)). [De Mesmaecker \(2014\)](#) suggests that this interest in investigative efforts does not necessarily come forth out of retributive motives, but rather because it communicates to victims that they and their victimization are being taken seriously. In other words, crime victims' perceptions of the police response in terms of police performance may also contribute to their perceptions of police legitimacy, but has not been explicitly examined.

Perceived legitimacy, subsequently, makes people willing to cooperate with the police by helping them in their job to combat crime. Perceived legitimacy relates to the belief that the police organization can be trusted to faithfully uphold the law and is therefore entitled to prescribe behaviour in line with the social norms and values in society, such as cooperation with the police (see [Jackson & Gau, 2016](#)). When people regard the police organization as a legitimate institute, it activates their intrinsic and moral feelings of responsibility to act in accordance with society's norms and pursue social order in the community ([Tyler, 2011; Tyler & Darley, 2000](#)). In other words, perceived police legitimacy makes people willing to cooperate with the police, because they intrinsically feel it is the right thing to do ([Sunshine & Tyler, 2003; Tyler & Huo, 2002](#)). While this theoretical framework provides important insights on how cooperation with the police can be explained, research in this area predominantly pertains to the general public rather than to crime victims. In the next paragraph,

we will apply Tyler's theoretical framework to crime victims and discuss previous research.

Previous research: theoretical framework applied to victims

Specifically applied to crime victims, Tyler's theoretical framework would suggest that victims who feel they have been treated with respect by police officers when they reported their victimization (e.g. whether or not police officers were approachable and friendly) and victims who feel like they police did their best to solve the crime (e.g. whether police officers were prompt and efficient) would have more positive perceptions of police legitimacy. Additionally, those victims who had positive perceptions of police legitimacy would be more willing to cooperate with the police in case of future crime victimization (see [Figure 1](#)). These assumptions have been partially supported by prior research, as indicated by a systematic literature review (Koster, Kuijpers, Kunst, & Van der Leun, 2015).

The review by Koster et al. (2015) suggests that previous studies consistently reported a positive relationship between victims' perceptions of procedural justice and perceived legitimacy of the police (Brathwaite & Yeboah, 2004; Elliott, Thomas, & Ogloff, 2011; Wemmers, 1996), but no studies were found that explicitly included victims' perceptions of police performance. This is surprising as a recent study suggests that perceptions of police performance in general (i.e. not with specific regard to their own case) is a more important determinant of perceived legitimacy for crime victims than for the general public (Aviv & Weisburd, 2016). Given that perceptions of procedural justice and police performance with regard to the victims' case have not been examined simultaneously in relation to perceived legitimacy or willingness to cooperate in previous studies, it seems worthwhile to examine how these theoretically distinct concepts relate to each other empirically. Furthermore, mixed results were found in the review by Koster et al. (2015) regarding the relationship between perceived police legitimacy and cooperation, as studies reported either a positive or non-significant relationship (Bennett & Wiegand, 1994; Kääriäinen & Sirén, 2011; Kochel, Parks, & Mastroski, 2011; Murphy & Barkworth, 2014). With regard to perceived legitimacy, most of these studies focused on perceptions of trust in the police, with exception of Kochel et al. (2011), who included perceptions of obligation to obey the law, the police, and legal authorities. A focus on perceived obligation to obey as indicator of perceived legitimacy is important, as this would capture the feeling that the police organization is entitled to prescribe appropriate behaviour. As perceived obligation to obey the law (as opposed to police obedience) might be a better operationalization of an *intrinsic* and *moral* motivation for cooperation, it would be recommended to focus on perceived obligation to obey the law, in addition to perceived trust in the police. Lastly, Koster et al. (2015) suggest that previous studies have typically focussed on the relationship between two particular concepts in our model and most studies were based on cross-sectional data, leaving it up to question whether victims' perceptions of procedural justice and police performance are related to perceived police legitimacy and willingness of future cooperation over time. To obtain more information on the temporal order in which these concepts occur, it is necessary to examine these relationships in a prospective manner. In that way, it could be examined whether perceptions of procedural justice and police performance function as antecedents of perceived legitimacy and whether perceived legitimacy functions as a predictor of willingness to cooperate with the police as suggested in the current study's framework.

The current study

The current study advances prior research in three important ways. First, it focuses not only on victims' perceptions of procedural justice, but also includes victims' perceptions of police performance and will examine how these theoretically distinct concepts relate to each other empirically. Second, it examines whether victims' perceptions of procedural justice and police performance predict perceptions of legitimacy (in terms of both perceived trust in the police and perceived obligation to obey the law) and subsequently victims' willingness to cooperate with the police in one model simultaneously. Third, it uses a prospective design to test the proposed relationships while controlling for levels of perceived legitimacy and willingness of cooperation at the initial phase of the police investigation. To date, this has never been done before.

These expansions to prior research are necessary to gain a more conclusive understanding on whether and how crime victims' perceptions of the police response relate to victims' willingness to cooperate with the police in case of future victimization over time. Such knowledge will also be of practical use to police officers who interact with crime victims as part of their daily work. After all, it is of utmost importance that crime victims remain willing to cooperate with the police after an experience with the police, as they have an increased risk to become victimized and may therefore be important sources of information to the police in the future (Nicholas et al., 2005; Pease, 1998; Polvi et al., 1990, 1991). Research based on prospective data will provide us with more conclusive answers than research based on cross-sectional data, as the first allows to examine the proposed relationships over time, while controlling for baseline values.

Based on our theoretical framework and prior research, we formulate three hypotheses:

H1: Victims' perceptions of procedural justice and police performance are empirically indistinguishable.

H2: Victims' perceptions of procedural justice and police performance positively predict perceived legitimacy and willingness to cooperate with the police over time.

H3: Victims' perceptions of legitimacy positively predict their willingness to cooperate with the police in case of future crime victimisation over time.

To test these hypotheses, we used a unique prospective data set of recent crime victims of violent crime and property crime in the Netherlands.

Methods

Procedure

Participants were drawn from a larger longitudinal study on the consequences of victims' evaluations of the police responding to their victimization. Victims of violent and property crime who were aged over 18 at the moment of victimization and could be contacted and interviewed within four weeks after reporting their victimization to the police in the former region Hollands Midden (now part of regional unit the Hague) were eligible for inclusion. Based on a list of 45 crime codes (index crimes), compiled by the author, the police included victims of either property (e.g. [attempted] domestic burglary or trespassing) or violent crimes (e.g. physical assault, threat, and mugging) and excluded victims of

other crimes. Contact information of victims who reported their victimization of one of the included crimes was sent weekly to the first author during a study period of eight months (May 2012 to December 2012). These victims were approached by phone by the author or one of her trained research assistants to assess whether victims met all the inclusion criteria, and if they did, to inform victims about the study and to verify whether victims were willing to participate in the study. With those willing to participate, an appointment was made for the first interview. This interview was conducted within four weeks after victims had reported their victimization to the police. Victims who fully completed the first interview were asked to participate in a second interview, which was conducted a month later. Anonymous processing of the data and the voluntary nature of participation were guaranteed to those who agreed to participate. The study was approved by the police privacy department of Hollands Midden.

Participants

Of the 1025 victims who met all the inclusion criteria and were contacted, 417 (40.7%) were willing to participate. To account for potential response bias, victims who participated in the study were compared to victims who refused to participate on type of crime. Victims who participated in the study did not differ from victims who did not participate in type of crime ($\chi^2(1, N = 1025) = 1.051, p = .305$). Of the 417 victims who participated in the first wave, 114 victims (27.3%) did not want to participate in the next wave and 102 victims (24.5%) could not be reached within the time period of the second wave, leaving 201 (48.2%) victims to fully finish both the first and the second wave. To account for potential bias due to attrition, victims who participated in both waves were compared to victims who participated only in the first wave on differences in age, sex, and type of crime. Victims who participated only at the first wave did not significantly differ from victims who participated at both waves in age ($M = 46.10, SD = 17.81$ vs. $M = 48.81, SD = 17.24$; $t(417) = -1.577, p = .116$), sex ($\chi^2(1, N = 417) = 1.161, p = .281$), or type of crime ($\chi^2(1, N = 417) = 0.021, p = .884$). Also, no differences were found between victims' who participated only in the first interview and victims' who participated in both interviews with regard to their perceptions of procedural justice ($M = 3.93, SD = 0.90$ vs. $M = 4.06, SD = 0.80$; $t(417) = -1.482, p = .139$) and police performance ($M = 3.82, SD = 1.06$ vs. $M = 3.92, SD = 1.09$; $t(417) = -1.001, p = .317$), their perceptions of trust in the police ($M = 3.73, SD = 0.80$ vs. $M = 3.77, SD = 0.76$; $t(417) = -0.544, p = .587$), their perceptions of obligation to obey the law ($M = 3.92, SD = 0.66$ vs. $M = 4.05, SD = 0.72$; $t(417) = -1.91, p = .057$), and their willingness to cooperate with the police ($M = 4.71, SD = 0.52$ vs. $M = 4.75, SD = 0.49$; $t(417) = -0.742, p = .459$). This suggests that victims who participated only in the first wave and victims who participated in both waves were comparable on these characteristics. The current analyses are based on the data of these 201 victims who completed both interviews.

Measures

Perceptions of procedural justice were measured by a Dutch translation (Kunst, Rutten, & Knijf, 2013) of the 5-item procedural justice subscale (e.g. 'the police were fair') developed by Murphy (2009), and seven additional items to fully cover the concept of perceived

procedural justice (see Reisig, Bratton, & Gertz, 2007; Sunshine & Tyler, 2003). Answers were administered on a 5-point Likert scale, ranging from 1 (*totally disagree*) to 5 (*totally agree*). Items were administered at T1 and the internal consistence was excellent (T1: $\alpha = .92$)

Perceptions of police performance were measured using a Dutch translation (Kunst et al., 2013) of the 4-item police performance subscale (e.g. 'The police did their job and took appropriate action'), also developed by Murphy (2009). However, one item ('The police kept me informed and followed up') was replaced with 'The police did everything they could to catch the offender' as we felt that the latter item would be a better indicator of police performance than the former. Answers were administered on a 5-point Likert scale, ranging from 1 (*totally disagree*) to 5 (*totally agree*). Items were administered at T1 and the internal consistence was excellent (T1: $\alpha = .87$).

Perceived police legitimacy

Perceived obligation to obey the law was measured using a Dutch translation of a 6-item scale (Wemmers, 1996) which was originally developed by Tyler (1990). Items were administered on a 5-point Likert scale, ranging from 1 (*totally disagree*) to 5 (*totally agree*). An example of one of the items is 'I always try to follow the law, even if I think that it's wrong'. The items were administered in both waves and the internal consistency was satisfactory (T1: $\alpha = .75$; T2: $\alpha = .76$). Based on the results of a marginal heterogeneity test, victims' perceptions of obligation to obey the law at T1 did not differ from their perceptions at T2, $p > .05$.

Perceived trust in the police was measured by six items based on survey questions used in previous research (see Gau, 2011; Reisig et al., 2007; Tyler & Fagan, 2008). Items were also administered on a 5-point Likert scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). An example of one of the items is 'The police are there when you need them'. The items were administered in both waves and the internal consistency was satisfactory (T1: $\alpha = .89$; T2: $\alpha = .88$). Based on the results of a marginal heterogeneity test, victims' perceptions of trust in the police at T1 did not differ from their perceptions at T2, $p > .05$.

Willingness to cooperate with the police was measured by asking victims to indicate the likeliness that they would be involved in four types of cooperative behaviour in case of future crime victimization. These questions were formulated by the authors based on survey questions used in previous research (see Reisig et al., 2007; Tyler & Fagan, 2008). The questions were answered on a 5-point Likert scale, ranging from 1 (*very unlikely*) to 5 (*very likely*). All questions were administered twice to measure willingness to involve in cooperative behaviour as a future victim of property crime and violent crime. For example, 'In case of future victimization of property/violent crime, how likely would you help the police to find a suspect?'. The 10 questions were administered in both waves and the internal consistency was excellent (T1: $\alpha = .94$; T2: $\alpha = .92$). Based on the results of a marginal heterogeneity test, victims' perceptions of trust in the police at T1 did not differ from their perceptions at T2, $p > .05$.

Background variables. Based on previous research, all analyses controlled for victims' age, sex, and type of crime victims had suffered from (see Hinds & Fleming, 2006; Hinds

& Murphy, 2007; Kääriäinen, 2007; Kääriäinen & Sirén, 2011; Kochel et al., 2011; Macdonald & Stokes, 2006; Murphy & Cherney, 2011, 2012; Tankebe, 2009; Tyler, 2005; Tyler & Fagan, 2008; Tyler & Jackson, 2013; Sargeant, Murphy, & Cherney, 2014; Sunshine & Tyler, 2003; Wu & Sun, 2009).

Statistical analyses

In the original data set, 3.9% values were missing. These values were imputed using multiple imputation based on five generated data sets, which is recommended for ordered categorical data that are not approximately normally distributed (Asparouhov & Muthén, 2010; Teman, 2012). All analyses were performed using Mplus 6.12. Given the non-normal distribution of the data, models were estimated using weighted least squares with mean and variance-adjusted chi squares (Muthén & Muthén, 1998–2012).

Model fit evaluation using confirmatory factor analysis

Confirmatory factor analysis was used to evaluate whether the key concepts in the current study were well represented by its indicators and to examine how the theoretical concepts should be treated in subsequent statistical analyses, based on the model fit. Model fit was evaluated based on the factor loadings, comparative fit index (CFI; Bentler, 1990), Tucker–Lewis Index (TLI; Tucker & Lewis, 1973), and the root mean square error of approximation (RMSEA; Steiger, 1990; Steiger & Lind, 1980) as suggested by Hu and Bentler (1999). Factor loadings should be at least .50 to indicate adequate fit (Gomez, Burns, Walsh, & Hafetz, 2005). CFI values should be at least $\geq .90$ to indicate an adequate fit (Hu & Bentler, 1999). RMSEA values should be smaller than .08 to indicate an acceptable fit and smaller than .05 to indicate good fit (Hu & Bentler, 1999; MacCullum, Browne, & Sugawara, 1996). When adequate model fit has been established, the interrelations between the key concepts can be examined.

Longitudinal analyses using structural equation modelling

Structural equation modelling (SEM) was used to examine to what extent the current study's theoretical framework was supported by the relationships between the key concepts. This type of analysis makes it possible to examine both the direct and the indirect relationship between victims' perceptions of procedural justice and police performance on victims' willingness to cooperate with the police, through victims' perceived obligation to obey the law and their perceived trust in the police concurrently. Ideally, these relationships are examined in a three-wave longitudinal research design. However, since only two waves were available, the best alternative was to split the model in two parts, which were tested simultaneously (cf., Little, Preacher, Selig, & Card, 2007). In the first part, the interrelations of victims' perceptions of procedural justice and police performance at T1 with both indicators of perceived legitimacy at T2 and victims' willingness to cooperate at T2 were examined while controlling for baseline levels of perceived legitimacy and willingness to cooperate. In the second part, the interrelations of both indicators of perceived legitimacy at T1 with victims' willingness to cooperate with the police at T2

were examined while controlling for baseline values of willingness of cooperation. All models controlled for victims' age, sex, and type of crime.¹

Results

Evaluating model fit

Confirmatory factor analysis was used to evaluate whether the key concepts – victims' perceptions of procedural justice at T1 (PJ_1), perceptions of police performance T1 (PP_1), perceived legitimacy in terms of perceived trust in the police at T1 (TR_1) and T2 (TR_2) and in terms of perceived obligation to obey the law at T1 (OB_1) and (OB_2), and willingness to cooperate with the police at T1 (CO_1) and T2 (CO_2) – were well represented by its indicators. The fit indices suggested good model fit ($\chi^2(1682) = 2073.291$, $p < .05$, CFI = .972, TLI = .971, RMSEA = .034). However, a closer look on the correlation between victims' perceptions of procedural justice and their perceptions of police performance was unacceptably high ($r = .896$). Given that both constructs intended to measure victims' perceptions of police officers' behaviour in their case and given that both constructs are theoretically expected to communicate to crime victims that they and their case are being taken seriously, we felt it was appropriate to combine perceptions of procedural justice with perceptions of police performance in one scale.

Based on these considerations, we modified our measurement model. In this second model, perceptions of procedural justice and police performance were combined into one scale, both indicators of perceived legitimacy (i.e. perceived trust in the police and perceived obligation to obey the law) were treated as separate concepts, and willingness to cooperate with the police was treated as a single concept. Again, confirmatory factor analysis was used to evaluate whether the key concepts – victims' perceptions of procedural justice and perceptions of police performance T1 ($PJPP_1$), perceived trust in the police at T1 (TR_1) and TR_2 (T_2), perceived obligation to obey the law at T1 (OB_1) and T2 (OB_2), and willingness to cooperate with the police at T1 (CO_1) and T2 (CO_2) – were well represented by its indicators. The fit indices suggested that the model fitted the data well ($\chi^2(1689) = 2056.352$, $p < .05$, CFI = .971, TLI = .970, RMSEA = .033). None of the correlations between the constructs exceeded .80 and all indicators loaded significantly on their latent constructs, with standardized factor loadings well above .50. Factor loadings are listed in the [appendix](#). Overall, the results of the second confirmatory factor analysis suggest that the key concepts are well represented by its observed indicators. This model was the basis for the longitudinal SEM analysis.

Longitudinal SEM analysis of current study's framework

Based on the results of the second measurement model, five regression paths of interest were specified and examined simultaneously in one model: (1) the relationship from victims' perceptions of procedural justice and police performance at T1 to perceived trust in the police at T2, (2) the relationship from victims' perceptions of procedural justice and police performance at T1 to perceived obligation to obey the law at T2, (3) the relationship from victims' perceptions of procedural justice and police performance at T1 to willingness to cooperate with the police T2, (4) the relationship from perceived

trust in the police at T1 to victims' willingness to cooperate with the police at T2, and (5) the relationship from perceived obligation to obey the law at T1 to victims' willingness to cooperate with the police at T2. Figure 2 shows the simplified results of the parameter estimates of this model.

The fit indices suggested adequate fit to the data ($\chi^2 = 2708.761[1866]$; CFI: .931; TLI: .928; RMSEA: .048). In addition, *post hoc* power analyses suggested that the sample size was sufficient to perform the current analysis ($\alpha = .05$, $df = 1866$, $n = 201$, null RMSEA = .048, alternative RSMSEA = .06; power = 1.00; Preacher & Coffman, 2006). While controlling for victims' age, sex, and type of crime,² findings showed that victims' perceptions of procedural justice and police performance were associated with perceptions of police legitimacy (i.e. both perceived trust in the police; $b = .598$, $p < .001$, and perceived obligation to obey the law; $b = .220$, $p < .01$). This indicates that victims who evaluated the police response in a more positive manner were also more likely to report higher levels of perceived trust in the police and perceived obligation to obey the law over time. Furthermore, only one indicator of perceived legitimacy (i.e. perceived obligation to obey the law; $b = .510$, $p < .001$) was related to victims' willingness to cooperate with the police over time. This implies that victims' who reported higher levels of perceived obligation to obey the law were more likely to indicate that they were willing to cooperate with the police in the future.

Of the background variables, older victims had more positive perceptions of procedural justice and police performance ($b = .242$, $p < .01$), and obligation to obey the law ($b = .283$, $p < .01$) than younger victims. Age was not related to perceived trust in the police and victims' willingness to cooperate with the police. Female victims had higher perceptions of obligation to obey the law at T1 ($b = .171$, $p < .05$), but sex was not related to the other concepts in our model. Lastly, type of crime was not associated with any of the concepts in the model.

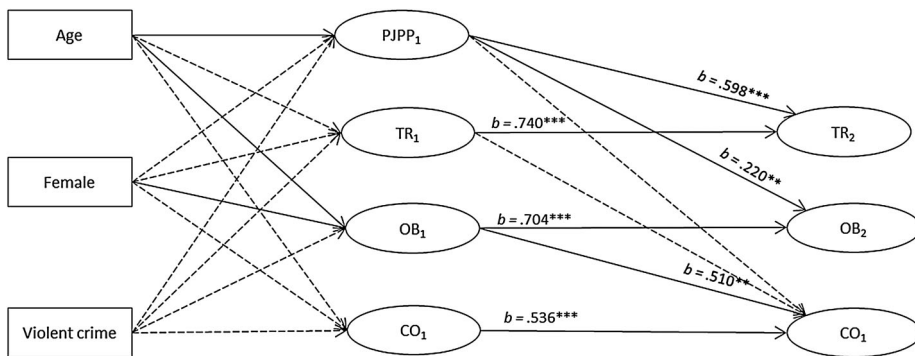


Figure 2. Simplified presentation of results of final model for longitudinal associations between victims' perceptions of procedural justice and police performance, both indicators of perceived legitimacy (perceived trust in the police and perceived obligation to obey the law), and willingness to cooperate with the police ($N = 201$). Model fit: $\chi^2(df) = 2433.618(1628)$; CFI = .932; TLI = .929; RMSEA: .050. * $p < .05$, ** $p < .01$, *** $p < .001$.

Note: Dashed lines represent paths that were estimated in the model, but were non-significant.

Overall, the findings indicate that victims' perceptions of procedural justice and police performance are positively and indirectly related to victims' willingness to cooperate with the police, through their perceptions of obligation to obey the law, but not through their perceptions of trust in the police. These findings provide partial support for our theoretical framework, based on Tyler's theory of procedural justice.

Discussion

The current study's aim was to examine whether and how victims' perceptions of how they have been treated by police officers and the effort police officers took in investigating their victimization relates to victims' willingness to cooperate with the police in case of future crime victimization, through victims' perceptions of trust in the police and their perceptions of obligation to obey the law over time. Knowledge of these relations is not only of practical relevance, as victims are more likely to be victimized again than those who were not victimized at all and thus may be important sources of information for the police in the future, but also of scientific relevance, since these relationships had not yet been examined simultaneously in a prospective manner.

Based on Tyler's theoretical framework and qualitative research among crime victims (De Mesmaecker, 2014; Elliott et al., 2012), we were interested in examining whether victims' perceptions of procedural justice and their perceptions of police performance, although theoretically distinct, were empirically distinct as well. For crime victims, and the particular contact they have with the police when reporting their victimization, it may be that perceptions of police performance are considered to be part of procedural justice, rather than a distinct concept. For example, whether police officers take appropriate investigative actions (i.e. police performance) may communicate that the case is being taken seriously. This could be theoretically considered to reflect trustworthiness, which is a key element of procedural justice. Our results indeed suggest that crime victims' perceptions of procedural justice and police performance represent a single concept empirically. For the application of Tyler's theoretical framework of procedural justice among crime victims, this implies that the concept of procedural justice might not only include fair treatment, but also police officers' investigative actions. Empirical studies might therefore include specific measures of police performance when examining the consequences of interactions between police officers and crime victims. However, future studies should examine the empirical relationship between victims' perceptions of procedural justice and police performance as well, to gain more conclusive understanding of the factor structure of these concepts and how to treat them in research.

Based on Tyler's theoretical framework, it was expected that victims' perceptions of procedural justice and police performance were predictive of victims' perceived trust in the police and their perceived obligation to obey the law (i.e. perceived police legitimacy) over time, and, that both indicators of perceived police legitimacy were positively correlated with victims' willingness to cooperate with the police over time. In line with this framework, the current study's findings suggest that victims' perceptions of procedural justice and police performance are prospectively related to their perceptions of police legitimacy (i.e. both perceived trust in the police and perceived obligation to obey the law). Furthermore, the results indicate that victims' perceptions of procedural justice and police performance are indirectly related to victims' willingness to cooperate with

the police in case of future victimization through their perceived obligation to obey the law, but not through victims' perceptions of trust in the police. The latter finding conflicts with the assumptions based on Tyler's theoretical framework. It may be that our focus on an indirect measure of perceived trust in the police instead of a more direct measure explains the non-significant relationship between perceived trust in the police and victims' willingness to cooperate in the current study. While a more indirect measure of a complex construct as trust in the police might provide more reliable results (Van Damme, Pauwels, & Haas, 2012), studies have used more direct measures of trust as well (e.g. 'To what extent do you trust the police?'; Kääriäinen & Sirén, 2011). Previous research among crime victims examining the relationship between victims' perceptions of trust in the police and victims' cooperation with the police has reported a positive relationship (for victims of violent and property crime; Bennett & Wiegand, 1994), a non-linear relationship (for victims of violent crime; Kääriäinen & Sirén, 2011), or a non-significant relationship (for victims of property crime; Kääriäinen & Sirén, 2011). These mixed findings suggest that the relationship between perceptions of trust in the police and cooperation is not clear among victims of crime and might be partly explained by the type of crime (i.e. property vs. violent) victims suffered from or the distribution of specific crime type victims in the sample. However, Murphy and Barkworth (2014) reported that perceived trust in the police was positively correlated with willingness to cooperate for victims of burglary, vandalism, and physical assault. These findings suggest that distinguishing victims of property crime from victims of violent crime in analyses may be too broad, and future studies might focus on specific types of crime to gain more substantive understanding of the relationship between victims' perceptions of trust in the police and their willingness to cooperate with the police in the future for victims of specific types of crimes. Alternative explanations for the non-significant relationship between perceived trust in the police and victims' willingness to cooperate in the current study might be that even when victims do not trust the police, they would still cooperate, because they feel that they have no other options or because they feel it is the right thing to do. The latter seems to be indicated by the significant relationship between perceived obligation to obey the law and willingness to cooperate.

Our finding that perceived obligation to obey the law seems to be a stronger predictor of victims' willingness to cooperate with the police than perceived trust in the police is supported by Tyler (1990), who suggests that perceived obligation to obey the law might be a more direct measure of perceived legitimacy than perceived trust in the police. There is one study that explicitly included victims' perceptions of obligation to obey. This study focused on the relationship between crime victims' perceptions of obligation to obey the police, legal authorities, and the law and victims' cooperation with the police and reported a non-significant relationship between these concepts based on cross-sectional data (Kochel et al., 2011).³ This study was conducted in Trinidad and Tobago and focused on actual crime victim cooperation in terms of whether or not crime victimization had been reported to the police. It may be that differences in policing styles between Trinidad and Tobago and the Netherlands, the current study's focus on perceived obligation to obey the law instead of obligation to obey the police, legal authorities, and the law, and the focus on victims' *willingness* to cooperate instead of actual cooperation caused these differences in findings. Nevertheless, as an anonymous reviewer rightfully noticed, it seems remarkable that the indirect relationship between victims'

perceptions of procedural justice and police performance and victims' willingness to cooperate with the police runs through victims' perceived obligation to obey the law in the current study. After all, victims are not lawfully obliged to cooperate with the police. However, it may be that victims' perceptions to obey the law outpace a strict obligation to obey the *law*, but more broadly concerns victims' perceptions to comply with norms in society. This would align with Tyler's theoretical framework, suggesting that perceived obligation to obey the law makes citizens to cooperate with the police, because it evokes an intrinsic motivated responsibility to act in accordance with society's norms, even without direct incentives (Tyler, 1990). To gain more understanding of *why* perceived obligation to obey the law and perceived trust in the police may or may not relate to victims' cooperation future research is recommended to delve deeper into these issues. For example, by using a qualitative research design to empirically examine the underlying mechanisms behind Tyler's theoretical framework.

Study limitations

The current study's results should be considered along with some of its limitations. Among the most important is the low-response rate. However, similar response rates were obtained in previous research among victims of crime in the Netherlands (see Kunst et al., 2013; Wemmers, 1996). Even though respondents did not differ from non-respondents in type of crime, it may be that other factors might have hampered the generalizability of the current study results to the general population of victims of violent or property crime in the Netherlands. For example, it may be that victims' ethnic background was a predictor of participation, causing victims of a non-Dutch background to be less likely to participate in the current study. Although including victims' ethnicity as a covariate did not substantially contribute to the final model, it would be incorrect to firmly conclude that victims' ethnicity would not influence the examined relationships at all. It may well be that the number of victims' belonging to an ethnic minority group ($n = 22$) in the current study's sample was too small to statistically detect an effect. In the Netherlands, about one-fifth of the population has a non-Dutch background.⁴ Of these ethnic minorities, about 45% are of Western background (most have an Indonesian,⁵ German, Belgium, or Polish origin) and about 55% are of non-Western background (most have a Turkish, Moroccan, Surinam, former Netherlands Antilles, or Aruban background). Especially those with a non-Western background are not only more likely to be victimized; they are also more likely to become a suspect of a crime compared to native Dutch citizens (www.cbs.nl). It may thus be that non-Western ethnic minorities have relatively more direct interactions with police officers than Western ethnic minorities or native Dutch citizens. Previous exploratory research in the Netherlands among young adults suggests that those with a non-Western background express less trust in the police than those who have a Dutch background (Van der Leun, Van der Woude, Vijverberg, Vrijhoef, & Leupen, 2014). In addition, international studies suggest that contact with the police is a negative key predictor of citizens' perceptions of police legitimacy (e.g. Bradford, Jackson, & Stanko, 2009; Skogan, 2006; Tyler & Fagan, 2008). Although it was not the focus of the current study, it would be interesting to gain further understanding of the role of ethnicity on the examined relationships. To do so, it is recommended to actively recruit non-Dutch

non-Western participants, for example, by inviting them to participate in their native language.

Coherent with the low-response rate is the sample size of the current study, which is another limitation. Although our sample size was sufficient to perform the statistical analyses presented in this paper, we would have had insufficient power to examine whether the model displayed different results for victims of property crime ($n = 111$) and victims of violent crime ($n = 90$) separately. Though we included type of crime as a control variable in our model, it was unrelated to any of the study variables. Another important limitation may be that the study was conducted in the Netherlands only. Therefore, it is unknown whether the current study findings apply to other contexts as well. Future studies could replicate the current study among victims of specific types of crime in other countries to examine whether these results still hold in other settings. Further, the study findings are limited by the fact that victims' self-reported *willingness* to cooperate with the police was measured instead of actual cooperation. This may have opened the possibility to report socially desirable answers, which could be eliminated by using objective data of police registrations. However, using objective data has its limitations as well, as the police only register victims who did report their victimization to the police. Lastly, the examined relationships were ideally explored using a three-wave research design instead of a two-wave design. In a three-wave design, it would be possible to prospectively examine the relationships between victims' perceptions of procedural justice and police performance at T1 and victims' perceptions of police legitimacy at T2 and perceived legitimacy at T2 in relation to victims' willingness to cooperate with the police at T3. However, using a two-wave design, the best alternative to examine the proposed relationships prospectively was employed by exploring the relationships between victims' perceptions of procedural justice at T1 and victims' perceptions of legitimacy at T2 and perceived police legitimacy at T1 in relation to victims' willingness to cooperate with the police at T2. Nevertheless, for future studies it is recommended to examine the proposed relationships in a three-wave research design.

Conclusions

Despite the limitations mentioned, it seems that the study contributed to the field of understanding victims' willingness to cooperate with the police by prospectively examining the relationships between perceptions of procedural justice and police performance, perceptions of trust in the police, perceptions of obligation to obey the law, and willingness to cooperate with the police among a sample of recent crime victims. Findings suggest that crime victims do not distinguish between a fair treatment (i.e. procedural justice) and police officers' investigative actions (i.e. police performance) when evaluating the police response. As both perceptions of procedural justice and police performance reflect victims' evaluation of the police response and as both concepts are assumed to inform the victim that s/he and her/his case is being taken seriously, police performance might be considered an element of procedural justice when applied to crime victims. Additionally, the current study's findings provide useful information for police policy and practice and to police officers who interact with crime victims as part of their daily work in particular. The results indicate positive perceptions of the police response are indirectly related to victims' willingness to cooperate with the police in case of future

crime victimization, through their perceptions of obligation to obey the law. In other words, when victims' perceptions about procedural justice and police performance become more positive, their internal felt obligation to obey the law will also increase as will their willingness to cooperate with the police in the future. This indicates that police officers may be able to positively influence victims' perceptions of obligation to obey the law and subsequently victims' willingness to cooperate with the police, by treating victims fairly and showing victims the investigative efforts taken to solve the crime.

Notes

1. Four different approaches to treat covariates in longitudinal structural models are suggested: (1) partial the covariates from all indicators of all concepts, (2) model the covariate as a direct effect on all concepts, (3) model the covariate as a direct effect on the concepts of the first measurement occasion, and (4) model the covariate as a direct effect on the concepts of the last measurement occasion (Little et al., 2007). None of these approaches resulted in considerable different results. The third approach was chosen to report, as this is the most commonly used approach.
2. Separate analyses were performed to additionally examine the influence of victims' ethnicity (Dutch, $n = 179$ vs. Non-Dutch, $n = 22$) and their level of education on the relationships. The results of these analyses were comparable with the results presented here. However, model fit of the model including victims' ethnicity and level of education did not improve model fit (Wald X^2 [8] 6.806, $p = .147$), suggesting that these indicators did not substantially contribute to the model. Therefore the model without these indicators, but with better fit is presented here.
3. Although the authors conclude that a positive relationship was found, the significance of the regression path resulted in a p -value of .068.
4. According to the Central Bureau for Statistics in the Netherlands, people have a non-Dutch background when they were born in a foreign country (first-generation immigrant) or when they have at least one parent who was born in a foreign country (second-generation immigrant).
5. People from Indonesia (and Japan) living in the Netherlands are considered as people with a 'Western' background, due to their socio-economic and cultural position. Indonesians living in the Netherlands are mainly people who were born in the former Dutch East Indies.

Disclosure statement

No potential conflict of interest was reported by the author.

Funding

This work was supported by the Netherlands Organisation for Scientific Research (NWO) [grant number 406-12-073].

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Appendix

Table A1. Factor loadings of confirmatory factor analysis ($N = 201$).

	Factor loadings
Items (T1)	
<i>Victims' perceptions of procedural justice and police performance</i>	
1. The police were polite, respectful, and courteous	.537
2. The police were approachable and friendly	.797
3. The police were professional	.797
4. The police were fair	.799
5. The police were helpful	.914
6. The police tried their best to find the best solution for my problems	.872
7. The police took the time and listen to me	.768
8. The police clearly explained the reasons for their actions	.866
9. The police sincerely tried to help me with my problems	.902
10. The police made decisions based on facts	.759
11. The police considered my opinion when deciding what to do	.589
12. The police listened to all citizens involved before deciding what to do	.602
13. The police were efficient	.870
14. The police did their job and took appropriate action	.847
15. The police were prompt	.847
16. The police did everything they could to catch the offender	.657
<i>Victims' perceptions of trust in the police</i>	
1. The police care about the well-being of the everyday citizen	.707
2. The police are there when you need them	.785
3. The police are trustworthy	.864
4. The police are effective in combating crime	.824
5. You can count on the police to take decisions that are best for society	.903
6. The police do their job well	.703
<i>Victims' perceptions of obligation to obey the law</i>	
1. People should obey the law even if it goes against what they think is right	.674
2. I always try to follow the law even if I think that it's wrong	.729
3. Disobeying the law is seldom justified	.604
4. It is difficult to break the law and keep one's self-respect	.615
5. A person who refuses to obey the law is a menace to society	.647
6. Obedience and respect for authorities are the most important virtues children should learn	.782
<i>Victims' willingness to cooperate with the police in case of future victimization</i>	
In case of future victimization of property/violent crime, how likely would you ...	
1. ... file a police report? (property crime)	.901
2. ... help the police to find a suspect? (property crime)	.881
3. ... give an eyewitness testimony? (property crime)	.903
4. ... give information to the police to solve the crime? (property crime)	.925
5. ... allow the police to investigate the crime? (property crime)	.914
6. ... file a police report? (violent crime)	.895
7. ... help the police to find a suspect? (violent crime)	.883
8. ... give an eyewitness testimony? (violent crime)	.957
9. ... give information to the police to solve the crime? (violent crime)	.932
10. ... allow the police to investigate the crime? (violent crime)	.895
Items (T2)	
<i>Victims' perceptions of trust in the police</i>	
1. The police care about the well-being of the everyday citizen	.709
2. The police are there when you need them	.754
3. The police are trustworthy	.773
4. The police are effective in combating crime	.751
5. You can count on the police to take decisions that are best for society	.915
6. The police do their job well	.761
<i>Victims' perceptions of obligation to obey the law</i>	
1. People should obey the law even if it goes against what they think is right	.597
2. I always try to follow the law even if I think that it's wrong	.596
3. Disobeying the law is seldom justified	.515

(Continued)

Continued.

	Factor loadings
4. It is difficult to break the law and keep one's self-respect	.592
5. A person who refuses to obey the law is a menace to society	.741
6. Obedience and respect for authorities are the most important virtues children should learn	.742
<i>Victims' willingness to cooperate with the police in case of future victimization</i>	
In case of future victimization of property/violent crime, how likely would you ...	
1. ... file a police report? (property crime)	.806
2. ... help the police to find a suspect? (property crime)	.877
3. ... give an eyewitness testimony? (property crime)	.897
4. ... give information to the police to solve the crime? (property crime)	.912
5. ... allow the police to investigate the crime? (property crime)	.829
6. ... file a police report? (violent crime)	.938
7. ... help the police to find a suspect? (violent crime)	.880
8. ... give an eyewitness testimony? (violent crime)	.976
9. ... give information to the police to solve the crime? (violent crime)	.941
10. ... allow the police to investigate the crime? (violent crime)	.876