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Measuring everyday experiences with the police in the Netherlands: An experience sampling pilot study

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Abstract

Survey research typically measures contact and experiences with police cross-sectionally and retrospectively. These retrospective measures may suffer from recall biases and are relatively limited in capturing the variety of *experiences* that may occur in daily life. The current study explores the feasibility and application of experience sampling techniques to measure day-to-day experiences with the police and variation in attitudes towards the police. Data for the study were collected over a period of 21 days from a convenience sample of 206 young people (aged 18–30 years) living in the Netherlands. After completing a baseline questionnaire, participants completed daily questionnaires measuring attitudes towards the police and any experiences with the police or other authorities that have occurred. A total of 3042 daily questionnaires were completed out of a possible 4389 (69% response rate). An analysis of participation and attrition suggests that individuals with more positive views of the police are more likely to complete most or all of the daily surveys. The descriptive results show that the number and type of experiences can vary substantially across individuals and time and that overall experiences with the police are prevalent in everyday life. The most prevalent reported experiences were observing the police 'on the job' and through the media. In addition, while attitudes towards the police were largely stable across the study period, there was still a non-negligible amount of variation over time. These pilot results raise questions about how we measure experiences with the police, and what role different experiences have in shaping individual attitudes. Experience sampling techniques may help to capture these other forms of exposure and understand how these experiences might influence attitudes towards police.

Introduction

There is growing evidence that direct interactions with the police can shape both situation-specific and global perceptions of procedural justice and legitimacy (Mazerolle et al., 2013). At the same time, exposure to policing through media and other sources shows that negative events can also influence public trust in police and legitimacy (Choi, 2021; Graziano, 2019; Intravia et al., 2018; Reny and Newman, 2021). In a nationally representative sample of people aged 16 years and over in the United States, 24% reported having had personal contact with the police in the past 12 months (Harrell and Davis, 2020). Given that the majority do not have personal contact with the police, these other 'experiences' should also play a role in conveying information about the police and shaping citizens' attitudes. Individuals are therefore likely receiving numerous different signals about

police performance through multiple channels in daily life. Evaluating how and when these different experiences influence attitudes is important to understanding the role of the police in shaping public attitudes in the short- and long-term over the life course (Fine et al., 2022).

However, survey research typically measures contact and experiences with police cross-sectionally and retrospectively. These measures also tend to be unidimensional, that is, they aim to measure one type of contact with the police,

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most often personal or vicarious interactions with a police officer (Augustyn, 2016). For example, the European Social Survey asks whether respondents have been approached, stopped or contacted by police in the last 2 years (Jackson et al., 2010). These retrospective measures are relatively limited in capturing the variety of *experiences* that may occur in daily life and can be affected by recall biases wherein respondents forget incidents or characteristics of incidents, or misinterpret the scope of the question (Lynch and Addington, 2010).

The current study aims to explore the application of experience sampling to policing research by measuring daily experiences with the police using a convenience sample of young people in the Netherlands. The term 'experiences' is used here to refer to a broad variety of encounters, either personally or vicariously through family and friends, in the media, or observations. We take this broader approach in order to explore the different ways in which people may encounter the police in day-to-day life. Similar to time use surveys, experience sampling techniques prompt respondents to complete short surveys on experiences and attitudes, allowing for more accurate self-reported measurement of activities in context (van Berkel et al., 2018). The use of experience sampling techniques is growing in social science, and to some extent in criminological research (Borah et al., 2021; Del Toro et al., 2022; Engström and Kronkvist, 2021), however the application of these techniques is still new to policing research.

The Netherlands is an interesting context in which to study experiences with the police, as crime and violence rates are generally lower compared to other EU countries (Eurostat, 2023a) and the number of police (300/100,000 inhabitants) is just below EU average (Eurostat, 2023b). In this context, the likelihood of personally encountering police is relatively low, whereas other forms of indirect exposure (e.g. through the media) are more likely to occur in daily life and over the life course. Experience sampling techniques may help to capture these other forms of exposure and understand how these experiences might influence attitudes towards police. While the Dutch policing context may thus not directly parallel that of countries like the US, conducting research on this specific case study can yield insights for other Northern European nations characterised by similar low expected rates of police contact.

Specifically, this paper has two goals: first, we describe and evaluate the feasibility of using experience sampling techniques to measure daily experiences and attitudes. Here we focus on characteristics associated with participation and attrition in the study. Second, we describe the experiences measured and explore the variation in attitudes during the study period. We present the pilot data and analyses as a starting point for discussion of the measurement of experiences and attitudes in policing research, and to what extent experience sampling techniques may complement and address some of the limitations of existing approaches.

Experience sampling in criminology and policing

Experience sampling, also known as ecological momentary assessment, aims to collect information about events, attitudes and behaviours within one's natural environment (Beal, 2015; Borah et al., 2021; Shiffman et al., 2008). Experience sampling typically uses short, repeated questionnaires that respondents complete using an app via their own smartphone (Shiffman et al., 2008). This 'momentary' approach can overcome limitations of retrospective self-reported surveys because it arguably improves validity and reduces the potential for recall biases (Beal, 2015; Csikszentmihalyi and Larson, 2014; van Berkel et al., 2018). Retrospective measures of any phenomena that occur in daily life, such as media consumption, experiences of strain or feelings of safety, cannot adequately capture the situational characteristics and momentary thoughts and feelings experienced in relation to the event (Schwarz, 2011). There is evidence to suggest that retrospectively measured experiences do not correspond well to momentary assessments, as, on the one hand, momentary assessments can capture phenomena that are underreported on retrospective reports (Gratch et al., 2021), while on the other hand, retrospective assessments can overestimate the frequency or severity of events (Naab et al., 2019; Schuler et al., 2021). In addition, retrospective assessments rely on the skill and memory of the participant to accurately recall the incident, the nature of the incident and how they felt about that incident in that moment (Kronkvist and Engström, 2020). In relation to experiences with the police, individuals must remember the encounter, the reason for the encounter and how they felt the police treated them at the time. Often these retrospective assessments are more likely to reflect the respondent's personal beliefs rather than the actual experience (Schwarz, 2011). Taken together, retrospective measures of experiences with the police are limited in adequately capturing the dynamic, situational processes, evaluations and emotions that are relevant to understanding how experiences shape attitudes and behaviours (Kronkvist and Engström, 2020). Since these are the precise processes that are of interest to the study of police interactions and public opinion, it is important to explore alternative methodological techniques that can measure experiences and attitudes in daily life.

The design and measurement of experiences can vary, with some studies prompting respondents to complete one or more surveys each day and others allowing respondents to report experiences as they occur. Reviews of experience sampling using smartphones have shown that this approach is feasible, with relatively high response rates and valid measurements (Beal, 2015; Gabriel et al., 2019; Shiffman et al., 2008; van Berkel et al., 2018). One review reported an average response rate of 69.6% among a sample of 42 papers that reported response rates (van Berkel et al., 2018). Nevertheless, participant recruitment, burden and retention are key challenges to implementing and collecting experience sampling data (Eisele

et al., 2022; Gabriel et al., 2019; van Berkel and Kostakos, 2021). Although smartphones permeate society, requiring a smartphone and app can be significant burdens for some participants that may affect selection into this type of study (Hofmann and Patel, 2015). In addition, repeat surveys may lead to respondent fatigue and/or careless responding (Eisele et al., 2022). Researchers try to minimise these issues by providing intrinsic motivations (e.g. contribute to knowledge) and extrinsic (e.g. monetary compensation) incentives to participate (van Berkel and Kostakos, 2021). A review of compensation in surveys suggests that compensation based on responses is one of the more effective tools to ensure retention (van Berkel et al., 2018).

While the use of experience sampling techniques is growing in other fields (Wrzus and Neubauer, 2022), its use in criminology and particularly policing studies, is still relatively rare (Borah et al., 2021; Del Toro and Wang, 2022; Del Toro et al., 2022; Kronkvist and Engström, 2020; Solymosi et al., 2021). Research on aggression using experience sampling techniques show that perceived rejection and anger were associated with momentary aggression (e.g. Borah et al., 2021; Murray et al., 2022a). Solymosi et al. (2015) explored the use of experience sampling to measure fear of crime based on geographical locations in order to describe how fear varied within and across physical environments. Similarly, Engström and Kronkvist (2021) found that features of the immediate environment were associated with experiencing fear of crime in daily life.

To our knowledge, the only two studies have used ES to measure contact with police and its impact on momentary outcomes among a non-probability sample of adolescents in the United States (Del Toro and Wang, 2022; Del Toro et al., 2022). For example, in Del Toro et al. (2022), two waves of data collection took place in 2019 and 2020, which amounted to 35 days total. Students from eight schools who were already participating in longitudinal studies were invited to participate, however it is not clear how many were initially invited. Students were asked daily whether they had been stopped by the police, to rate to what extent the police were intrusive during this stop, as well as their feelings of disengagement with school and psychological distress. A total of 387 students participated in at least one wave, with 190 adolescents participating in both waves. Considering the whole sample, 30% of adolescents missed none or only one daily diary, and 51% (*n*=197) did not complete at least 14 diaries. It is not clear whether and how much participants were compensated. Across the study time period (35 days), 9% of students reported being stopped at least once, with 66 police stops reported overall. The authors found that police stops were associated with greater psychological stress and school disengagement the next day. Del Toro and Wang (2022) used a non-probability sample of 131 African American adolescents from seven middle and high schools in the United States. Initially, 348 adolescents participating in other longitudinal studies were invited to participate, whereby 50%

(*n*=175) agreed to take part, and 131 actually participated. Adolescents were compensated 25 USD. Among the 131 participants, 42% (*n*=55) completed all 14 daily diaries, and 38% missed at least three. Across the study period, 9% (*n*=12) of participating adolescents reported a total of 19 police stops in a 14-day period. Neither study reported the overall daily response rate (percentage completed out of total possible daily questionnaires). These results suggest that recruitment into daily survey studies can be challenging, with uptake around 37% in the second study, and among those who do participate, less than half completed all questionnaires (30%–42%). Nevertheless, these studies show that there were small, but non-negligible number of interactions in a short window of time, and that these interactions can shape individual outcomes even in the short term.

The Dutch policing context

In the Netherlands, local police ('basis teams') are organised under a centralised national police organisation, the Dutch National Police. In line with other Northern European countries, confidence in the Dutch police is relatively high: according to the World Values Survey, 72.4% of people in 2022 reported that they personally have confidence in the police (i.e. responded with 'a great deal' or 'quite a lot' instead of 'Not very much', or 'None at all' when being asked about their confidence in the Dutch police).[1] However, those with a non-Western migration background (e.g. Turkish, Moroccan and Surinamese) tend to have more negative views of the police (Andriessen et al., 2014; van der Leun and van der Woude, 2011). A recent national survey found that youth (aged 15–25 years) tend to be more satisfied with police in general, while those with lower and secondary education were slightly less satisfied compared to those who have completed higher-level education (47% vs 53%).[2]

The contexts in which individuals may encounter police in the Netherlands may vary across geographical space, as many smaller police stations have been closed in recent years, meaning rural residents may be less likely to encounter police in daily life (Schaap, 2018). According to Schaap (2018), police encourage citizens to first use the internet to report crimes, meaning that personal interactions are less prioritised and less likely to occur among the general public. In addition, the Dutch police rely on a combination of traffic stops, cameras and 'speed trajectory controls' to enforce traffic laws. In the 2010s, the priorities shifted from enforcing traffic rules to the detection and interception of criminal behaviour in traffic, meaning that traffic and safety enforcement was substantially reduced (Goldenbeld et al., 2019). As a result, while 'random' traffic stops still may occur, interactions with police among the general public in this context are less likely compared to countries with higher police traffic enforcement such as the United States (Pierson et al., 2020). Overall, we can expect that the number of personal interactions reported will be low, and that respondents will more

likely report 'indirect' experiences via media and other sources. Although personal interactions may be infrequent, it is still important to measure and understand to what extent individuals encounter police in different ways in daily life.

Methods

Data for the current study were collected between April and May 2022 from young people (aged 18–30 years) living in the Netherlands. The survey instruments were developed and implemented by the authors using YourResearch, which is a research platform that recruits and carries out a range of clinical, tracking and diary studies. For the pilot, the pool of potential participants consisted of individuals who had signed up for other studies on the YourResearch platform. Potential participants from the YourResearch panel were sent an invitation to participate with a link to the study website, which provided further information about the study, compensation and informed consent. Participants provided digital consent prior to enrolling in the study and completing the baseline survey.

The study consisted of two parts. First, participants completed a baseline questionnaire (~20 minutes) which measured demographic characteristics, social attitudes and previous experiences with the police. The second part consisted of short (~5 minute) daily surveys on well-being, attitudes towards the police, and experiences they have had since the previous (daily) survey. Participants could list up to five experiences with different authorities, including the police, BOAs,[3] courts, the municipality or 'other'. If respondents reported an experience with an authority, they were prompted with follow-up questions about the type of experience, perceptions of authority behaviour during the experience, emotional reactions to the experience and overall satisfaction with the authority. For the current paper, we focus on describing reported experiences with the police only. The daily questionnaires began the day following the completion of the baseline questionnaire, and lasted for 21 days. In a review of ES studies, the median duration of studies was 14 days, with most studies reporting a duration of less than 1 month in order to reduce participant burden (van Berkel et al., 2018). We therefore opted for 21 days to reduce participant burden while maximising the potential window to capture experiences.

Respondents had 24 hours (i.e. from midnight to midnight) on the day to complete the questionnaire, and were not allowed to retrospectively complete daily questionnaires so as to ensure that responses were captured as close as possible to the time that the event occurred (see Supplemental Appendix A for a list of all item wordings). Participants were compensated €10 (~10USD) in gift card vouchers for completing the baseline questionnaire and €30 in vouchers for completing at least 80% of the daily questionnaires. All questions were fielded in Dutch. The study received ethical approval from the ethics committee of the Faculty of Social and Behavioural Sciences at Utrecht University.

The target sample size for the pilot study was around 150 participants, with the expectation that about a third would be lost due to attrition over the study period. In the 3 days that registration was open, 322 people registered for the study. Of the 322 registrations, 209 participants at least partially completed the baseline questionnaire and 206 fully completed the questionnaire. Out of the 209 participants who fully or partially completed the baseline questionnaire, 6% did not complete any daily questionnaires, 27% completed 10 or fewer daily questionnaires, 37% completed 15–20 daily questionnaires and 29% completed all the daily questionnaires. Out of those who completed the baseline survey, 63.64% ($n = 133$) completed 80% or more of the daily surveys, which was the condition for full compensation. Overall, a total of 3042 daily questionnaires were completed out of a possible 4389 (69%), which is in line with the average response rate from reviews of ES studies (van Berkel et al., 2018).

Measures

Characteristics of attrition and compliance. Attrition and compliance refer to what extent a participant completes none, occasional or (almost) all required daily surveys over the study period. We define three categories of attrition and compliance, whereby participants who completed none or less than 20% of the daily surveys are considered 'low' or 'non-compliers' and participants who completed at least 20% or more daily surveys are considered 'compliers'. The remaining participants are considered 'occasional' compliers. We use the threshold of 20% to define compliers because this was the stated condition for full payment (i.e. 80% or more completed daily surveys). We were not able to evaluate characteristics of individuals who registered for the study, but did not complete the baseline survey, as information provided on registration was minimal.

We include several socio-demographic variables to assess the characteristics of attrition and compliance. Since young people were recruited for the study, *age* ranges from 18 to 30 years. A respondent's gender is measured using a binary indicator (0 = male and 1 = female).[4] Respondents were asked to report their highest level of completed education, and the responses were recoded to reflect (1) lower secondary education, (2) middle (i.e. upper secondary education) and (3) high (i.e. higher education). Finally, respondents who reported that they or at least one of their parents were born outside the Netherlands were coded as (1) 'migrant background', whereas all others were coded as (0) 'no migrant background'.[5]

In addition, we include four variables that capture global perceptions of police (procedural justice, distributive justice, effectiveness) and engagement with police media. These characteristics can help us evaluate to what extent prior

beliefs and engagement might potentially shape motivation and influence participation itself. *Procedural justice* was measured using four items drawn from the European Social Survey (Jackson et al., 2010) and Murphy et al. (2010). Respondents are asked to what extent they agree on a 4-point Likert-type scale (1=not at all often, 4=very often) with statements such as 'The police generally treat people in the Netherlands with respect' (Cronbach's alpha=0.81).

Distributive justice was measured using three items that capture public perceptions as to whether the police provide services and treat individuals equally (Murphy et al., 2010). The items include statements such as 'Police treat everyone equally'. Respondents' agreement was measured using a 4-point Likert-type scale ranging from (1) 'strongly agree' to (4) 'strongly disagree' (Cronbach's alpha=0.79).

Police effectiveness was measured using three items drawn from Murphy et al. (2010) that ask to what extent respondents feel that the police are doing a good job at solving crime, preventing crime and keeping order. Responses range from (1) 'very good' to (5) 'very bad'. The items were reverse-coded so that higher values reflect more positive perceptions of police effectiveness. The scale was less reliable compared to others, but still relatively acceptable (Cronbach's alpha=0.65).

Finally, we measured whether or not the respondent was currently following a social media account from the police (1=yes).

Measures of daily attitudes and experiences

Daily attitudes. Respondents were asked each day to rate on a scale from 1 (not at all) to 10 (completely) to what extent they agreed with several statements about the police. These statements were selected to reflect different elements of police performance and legitimacy, including trust, procedural fairness, distributive justice, effectiveness and legality (Jackson et al., 2010; Tankebe, 2013). In the current study, we focus particularly on measures of trust in police and procedural fairness for simplicity. In addition, these outcomes reflect two relevant 'global' attitudes that are often of interest in policing research.

Daily experiences. If respondents reported an experience with the police, they were asked to report the 'type' of experience. Respondents could choose from five categories describing different types of contact: 'I had contact' (personal), 'someone I know had contact' (vicarious), 'I saw the police while doing their job' (observed), 'I saw or read about them in the media, e.g., in the newspaper, social media, TV program, etc.' (media) and 'other' (open response). While observed and media experiences may also be categorised as 'vicarious', here we use the term to refer to experiences of contact that are relayed through someone they know, such as a friend or family member. Respondents were also asked follow-up questions rating the experience according to fair treatment, respectful treatment and fair outcome (see Supplemental Appendix A). Specifically, respondents were asked

to what extent they agree on a 5-point scale ranging from 1 'strongly disagree' to 5 'strongly agree' with the statement that the police were fair, respectful, to what extent the outcome was fair and their overall rating of the experience (i.e. from 'very negative' to 'very positive'). Respondents could also respond that they 'do not know enough to say' for the fair, respectful and outcome ratings, but did not have this option for the overall rating.

Analytical plan

First, to assess characteristics associated with attrition, we used one-way Analyses of Variance (ANOVAs) and χ^2 tests to estimate whether the means or proportions of background characteristics differed across groups (low/none, occasional, compliers). Second, in order to assess the prevalence and patterns of everyday contact, we provide a summary of the different types of experiences overall, how many occurred per day on average and how participants rated various experiences. Here we also explored to what extent daily attitudes varied between and within individuals during the study period. Specifically, we employed 'empty' multilevel linear models to estimate the intraclass correlation coefficient [ICC] for both trust and procedural fairness outcomes. The ICC provides an estimate of the variance that is attributable to between-individual differences compared to within-individual differences over the 21-day study period. Data are available upon request from the first author, and analytical code is available from: https://osf.io/vabe3/.

Results

Participation and attrition

Descriptive statistics for all background variables included in the analyses are reported in Table 1. The summary statistics suggest that the sample is primarily female (72.25%), does not have a migration background (91.93%) and has completed at least middle- (34.45%) or high-level (58.85%) of education.[6] Regarding attrition, the proportion of participants that completed at least 80% of the daily surveys was relatively high (63.64%). The next largest group consisted of low or non-compliers (19.62%), who completed 20% or fewer daily surveys. Figure 1 presents a histogram of the number of surveys completed across respondents. Figure 1 shows that the majority of respondents completed most, if not all, of the 21 daily surveys during the study period.

For characteristics associated with attrition, the results in Table 2 show that those who completed at least 80% of daily surveys ('compliers') had significantly more positive perceptions of procedural justice. This suggests that people with more positive views of the police were more likely to complete the study. Post hoc contrasts suggest that this difference is only significant when comparing compliers with those who completed none/low-compliers ($M_{\text{difference}}$=0.263, p=0.015).

Table 1. Background and participation characteristics of the sample.

Variable	Response	N	Mean/%	SD
Police procedural justice	[1–4]	205	3.00	0.52
Police distributive justice	[1–4]	204	2.65	0.65
Police effectiveness	[1–5]	205	2.47	0.54
Following police social media	yes	90	43.06	
	no	114	54.55	
Age	18–30	209	25.11	3.02
Gender	Female	151	72.25	
	Male	57	27.27	
Education level (completed)	High	123	58.85	
	Middle	72	34.45	
	Low	14	6.7	
Migration background	No	191	91.39	
	Yes	18	8.61	
Survey participation	Low/none	41	19.62	
	Occasional	35	16.75	
	Compliers	133	63.64	

Note: Survey participation: 'Low/none' participants are those who completed 20% or fewer daily surveys, 'Occasional' participants are those who completed between 20% and 80% of daily surveys, and 'Compliers' are those who completed 80% or more daily surveys.
SD: standard deviation.

Describing everyday experiences with the police

Among individuals who completed at least one daily survey, respondents reported 675 experiences with the police over the 21-day study period. Among respondents who completed at least one daily survey, 27% ($n=56$) reported having no experiences with police, whereas 55% ($n=115$) had two or more experiences during the survey period. The maximum number of experiences with the police that a respondent reported was 18. Among the 'compliers' ($n=133$), 10 (7.5%) reported no experiences with the police, 24 (18%) reported one experience and the remaining 99 (74.4%) reported two or more experiences with the police during the time period.

Figure 2 breaks down experiences with police by type of experience. The vast majority of experiences reported were through observation of police 'on the job' ($n=355$, 50%) or through traditional or social media sources ($n=301$, 42%). Participants reported 27 (4%) personal experiences with the police during the time period. The 'other' category ($n=19$) includes a variety of situations including, for example, listening to a podcast by the police, meeting an officer at their work or meeting an officer as a witness.

Respondents were also asked to report to what extent they perceived the authority was fair, respectful, whether the outcome was fair, and how they perceived the experience overall. Respondents could also answer that they did not have enough information to make a judgement about the treatment and outcome. Figure 3 shows the total distribution of ratings for police fairness, respectfulness, outcome fairness and overall, excluding the 'don't knows'. Generally, the majority of experiences were perceived as fair, respectful, with a fair outcome and overall positive.

Figure 4 shows the distribution of 'don't know' ratings by type of police experience (e.g. personal and observed) for the *first reported* experience each day. The figure suggests that
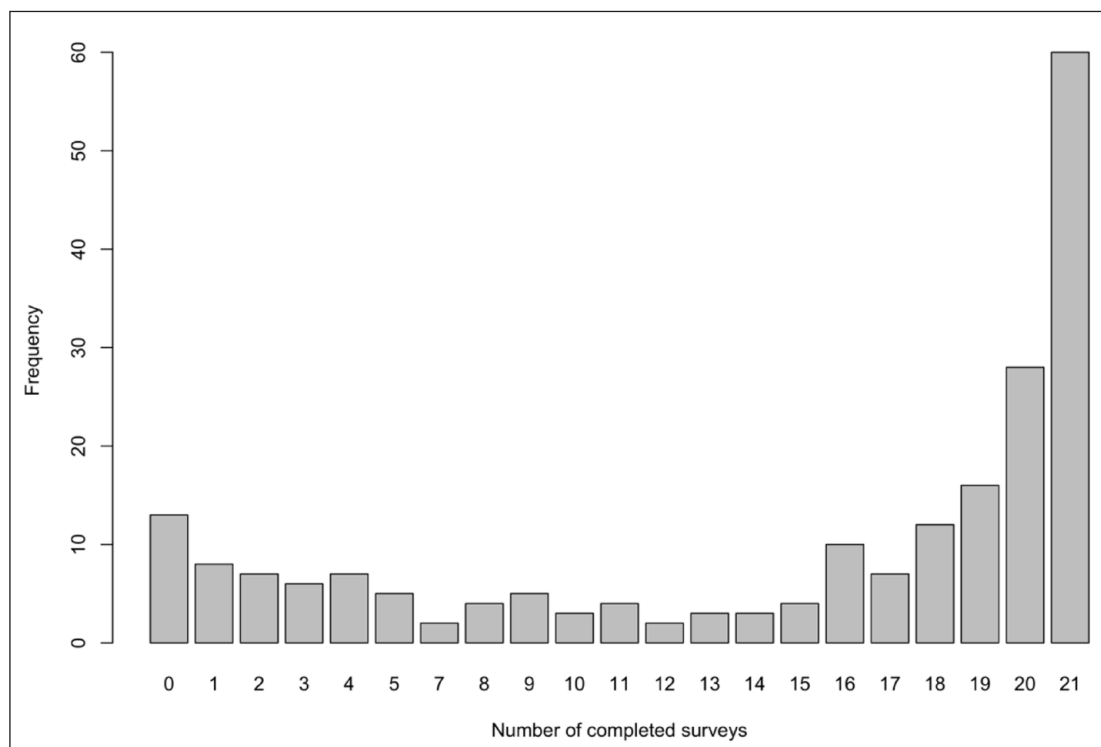

Figure 1. Number of completed surveys per respondent across the 21-day study period.

Table 2. Background characteristics of low/none, occasional and compliant participants.

Variables	Low/none		Occasional		Compliers		F-test	χ²	p-value
	Mean	SD	Mean	SD	Mean	SD			
Police procedural justice	2.82	0.67	2.93	0.35	3.08	0.49	4.46		0.01
Police distributive justice	2.45	0.66	2.70	0.60	2.7	0.65	2.42		0.09
Police effectiveness	2.31	0.65	2.47	0.38	2.51	0.53	2.21		0.11
Age	24.93	3.25	24.94	2.75	25.2	3.03	0.19		0.83
Following police social media (1 = no)	0.53	0.51	0.53	0.51	0.58	0.50		0.44	0.8
Gender (1 = Female)	0.66	0.48	0.71	0.46	0.75	0.43		1.34	0.51
Migration background (1 = yes)	0.02	0.16	0.06	0.24	0.11	0.32		3.56	0.17
Education level (ref = High)								8.06	0.09
Low	0.12	0.33	0.00	0.00	0.07	0.25			
Middle	0.41	0.5	0.26	0.44	0.35	0.48			

Note: Differences between groups were calculated using ANOVA (*F*-statistic) for continuous variables, and the χ² test for independence. Survey participation: 'Low/none' participants are those who completed 20% or fewer daily surveys, 'Occasional' participants are those who completed between 20% and 80% of daily surveys, and 'Compliers' are those who completed 80% or more daily surveys.
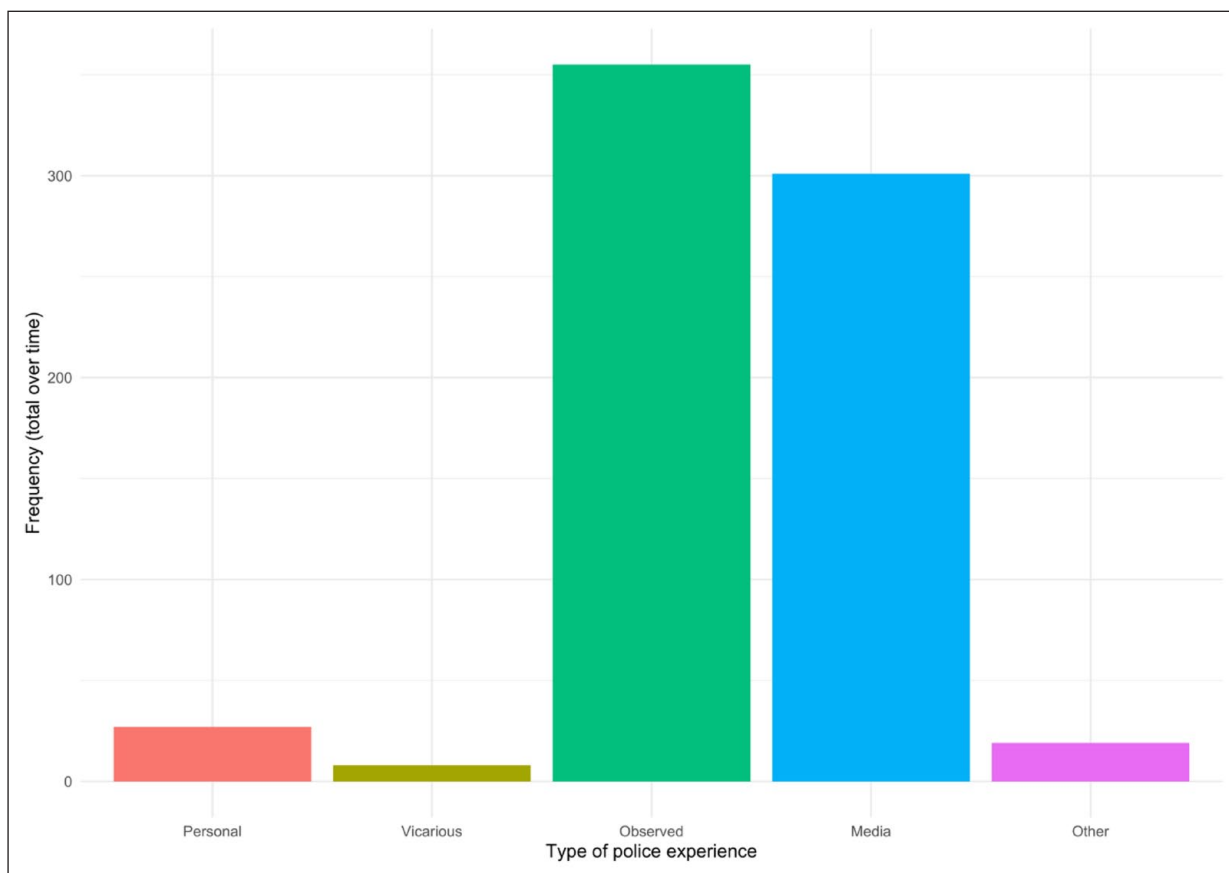

Figure 2. Number of experiences with the police reported over 21 days, by type of experience.

while respondents frequently observed the police on the street or via media, this experience did not always convey enough information to make judgements about police treatment and outcomes. By far, respondents did not have enough information to judge to what extent the outcome was fair (79.8% for observations, 35.1% for media). Generally, respondents reported that they did not have enough information to make a judgement about whether the outcome was fair more frequently ($n = 306$) than about fair treatment ($n = 223$) and respectful treatment ($n = 199$).
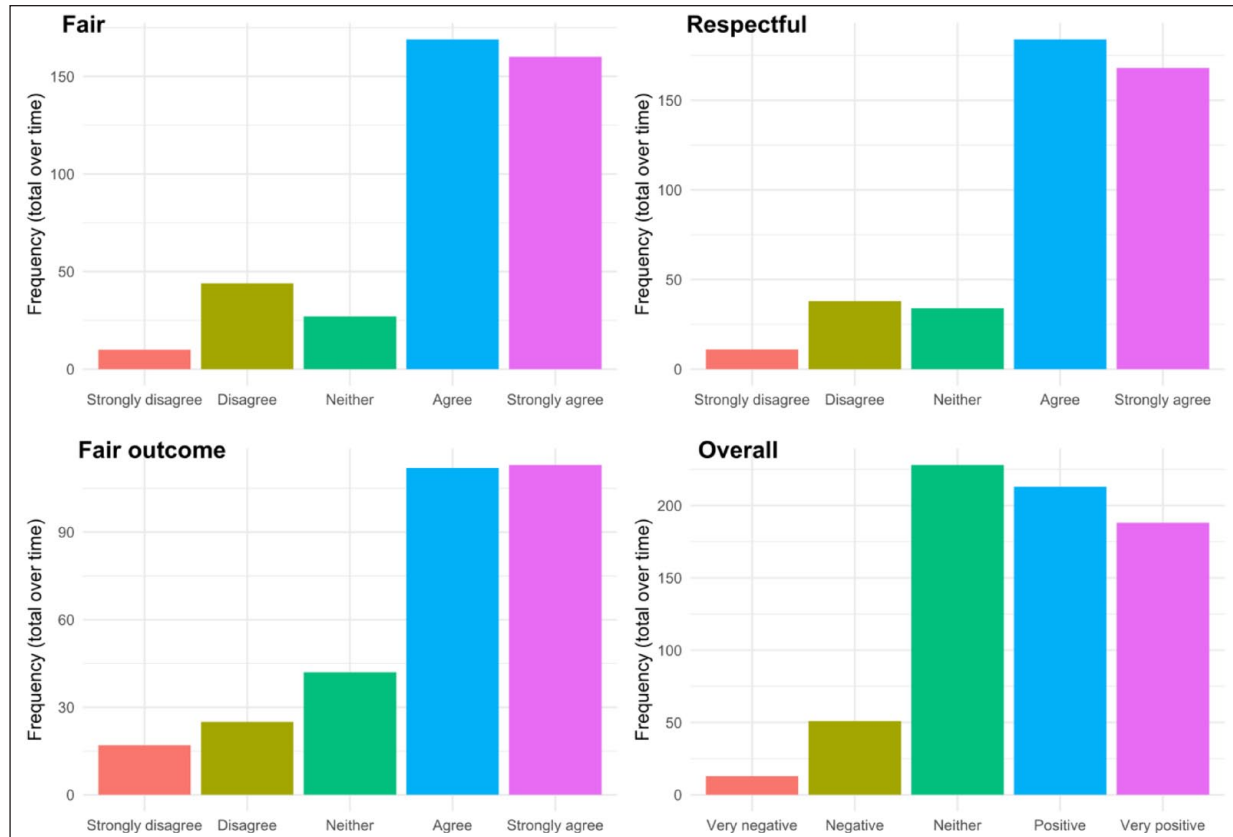
Figure 3. Distribution of ratings for fair and respectful treatment, fair outcome and overall perception of the experience (all reported experiences).

Next, we explored to what extent attitudes varied between- and within-individuals. Figure 5 shows the smoothed trends for each attitudinal variable over time. The trends are smoothed using locally estimated regression (LOESS). The descriptive results show that, on average, attitudes remain high and positive, with relatively low daily variation. To get an idea about how much variation is attributable to within-individual differences, we estimated empty multilevel mixed effects models with random person-level intercepts. The full models are presented in Supplemental Appendix B (Table B1). The ICC for trust was 0.839, meaning that 84% of the variance in trust was attributable to between-person differences, and 16% of the variance can be attributable to daily within-person differences. Similarly, 88% of the variance in procedural fairness was attributable to between-person differences, and 12% to within-person differences. The results suggest that attitudes do vary to some extent in the short-term, however the majority of variation likely stems from differences between individuals.

Discussion

The current study aimed to explore new ways of measuring experiences with the police, and in evaluate to what extent attitudes vary in the short term. We find that the number and type of experiences in our sample varies substantially across individuals and time, and that overall experiences with the police are prevalent in everyday life for our respondents. While the findings of this study are specific to the Dutch policing context and may have limited generalisability to countries with higher expected rates of police contact, they may be more applicable to similar low-crime/low-police-contact settings. At the same time, it is important to acknowledge the composition of the sample and its non-random selection, as this may introduce potential biases. Nonetheless, these findings hold implications for measuring police interactions and their impact on attitudes towards law enforcement. Specifically, we highlight three main implications for the use of experience sampling and the study of police-citizen interactions.

First, our analyses of attrition and compliance showed that individuals who have more negative perceptions of police procedural justice are more likely to complete few or no daily surveys. This has implications for recruitment of participants within experience sampling studies, and more broadly surveys on police contact and attitudes. Non-random attrition in longitudinal studies is not unknown to criminology, and has the potential to substantially bias coefficients
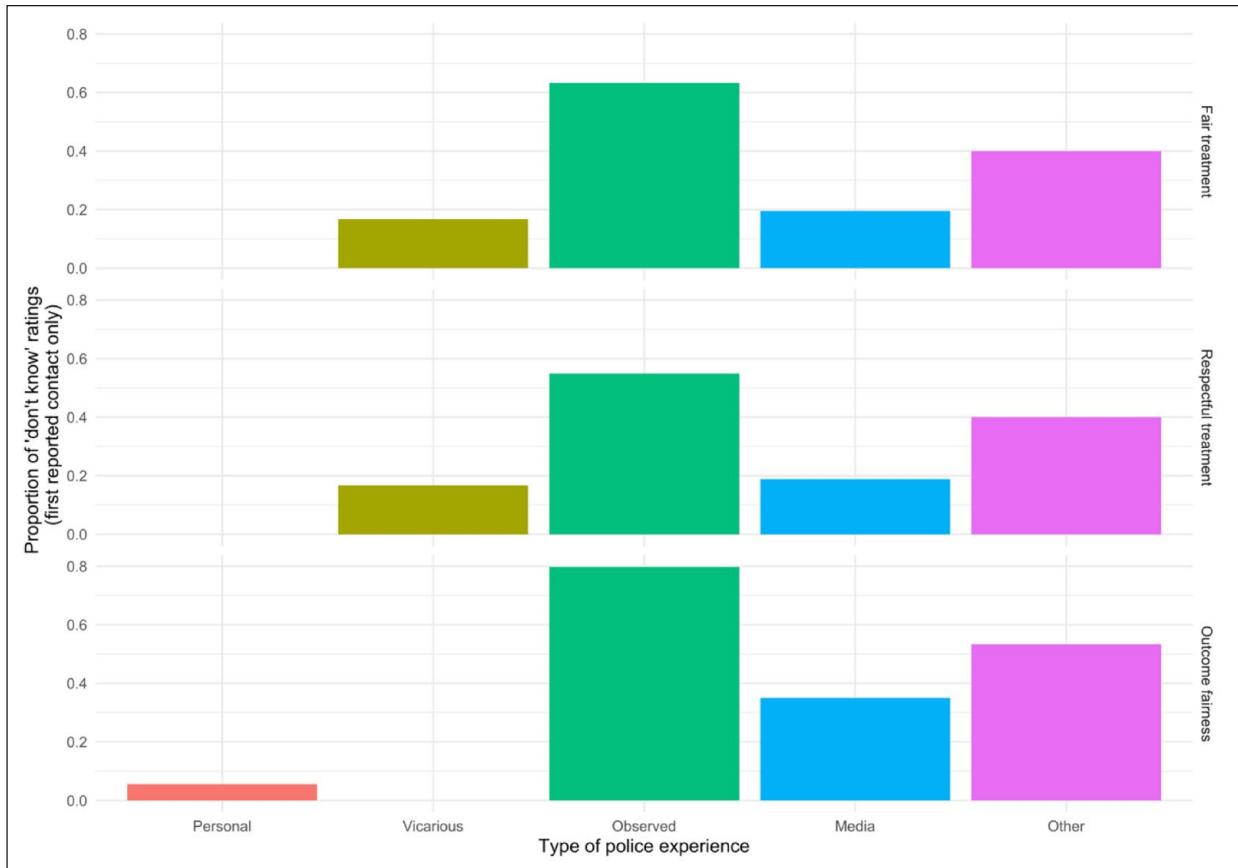
Figure 4. Proportion of 'don't know enough to say' responses by rating and type of experience with the police (first reported experience only).

(Mitchell et al., 2022). An evaluation of participation and attrition in experience sampling measuring fear of crime found that the most dedicated participants tended to be those who were most interested in the studied outcome (Kronkvist and Engström, 2020). Our results seem to be in line with this conclusion as well, as individuals who thought more positively about the police were the most compliant during the study period. This suggests however that individuals who are most negative about the police may select out of participation or drop out of the study early. While attrition and response biases are not uncommon in survey research, these issues can become particularly problematic in experience sampling studies due to the emphasis on measuring phenomena on an intensive daily basis. Researchers should take care to inspect patterns of attrition and compliance, and use information collected in the baseline questionnaire to evaluate how drop-outs differ from those who completed the surveys. Pilot studies paired with qualitative feedback can help researchers understand why participants dropped out (Dejonckheere and Erbas, 2021), as well as what aspects participants found positive or engaging about the study (Markowski et al., 2021). Nevertheless, the proportion of compliers in the current study (63.64%) was higher than the fear of crime study (13.6% for daily assessment), as well as

the Del Toro studies (i.e. 30% and 42%). A lack of compensation in the fear of crime study may explain the difference in compliance with our study, however adolescents were compensated for participation in at least one of the Del Toro studies (25 USD, Del Toro and Wang, 2022). Compensation is an important technique to maintain participation, but other techniques such as gamification, reminders and feedback on compliance can work to minimise attrition as well (Dejonckheere and Erbas, 2021; Kronkvist and Engström, 2020; van Berkel and Kostakos, 2021; Wrzus and Neubauer, 2022). Future studies aiming to implement experience sampling techniques must therefore consider ways to increase and maintain participation among broader populations, as well as account for potential biases due to (often inevitable) attrition.

Second, our descriptive analyses show that most of our respondents had 'experiences' with the police through media and observation of police 'on the job'. The number of personal experiences was fairly low ($n=27$, 4%), but that is likely not unusual in the Dutch context where personal interactions with citizens are given relatively lower priority. To compare, a study of police contact among African American youth in the United States suggested that 9% of the sample reported being personally stopped by the police during a
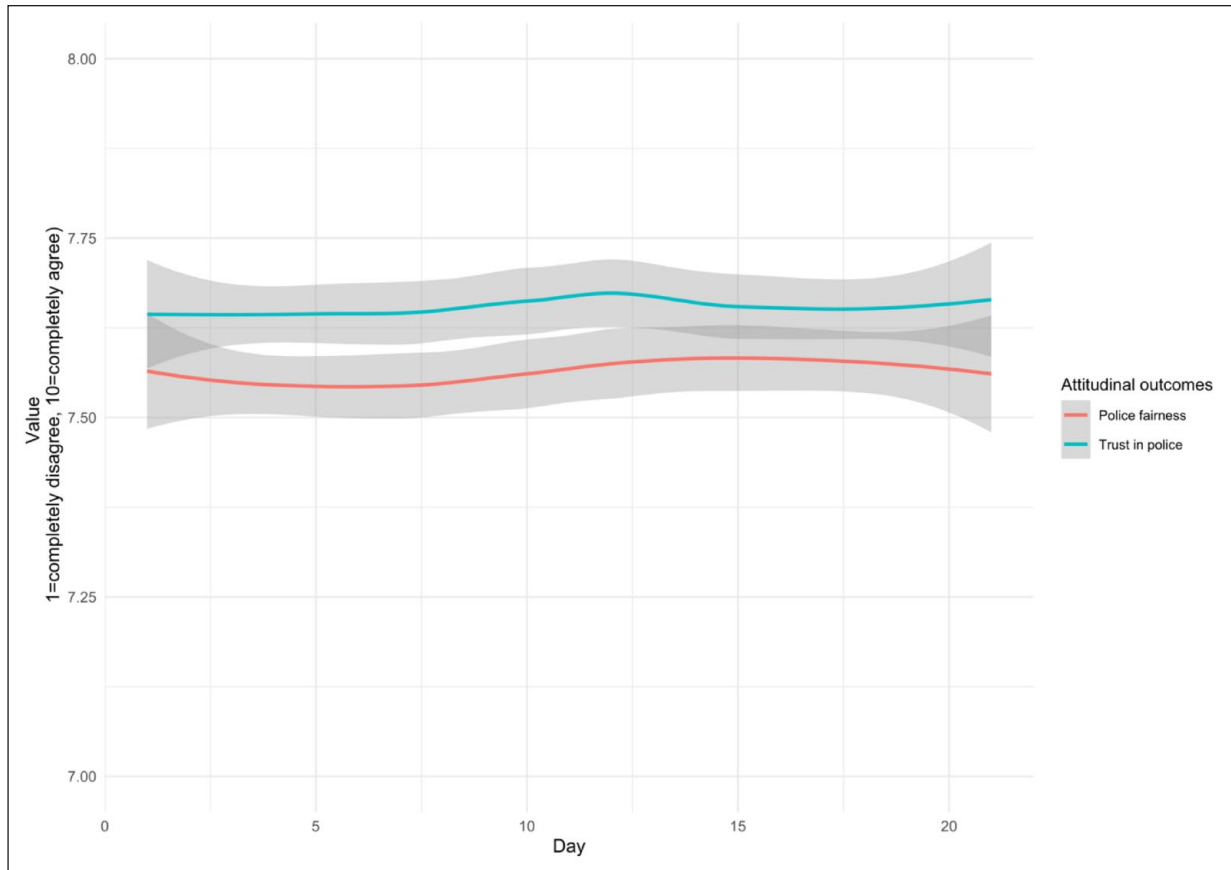
Figure 5. Average values of attitudinal outcomes over the study period (21 days).

14-day period (Del Toro and Wang, 2022). What this suggests is that some individuals may be more likely to get their information about police treatment and behaviour in daily life from media sources compared to personal encounters. However, we stress that our study demonstrates, in line with previous research (Geller, 2021), that personal contacts are far from the only source of information about police that people encounter in daily life. If citizens in certain contexts indeed experience little to no direct contact with the police in their lifetime, considerations about the impact of direct encounters could have been overstated in previous research as implied by Weitzer (2002).

Our descriptive results thus emphasise the need to think outside the box of direct personal contacts and to measure other forms of exposure to police behaviour. In some studies, witnessing an encounter is included as a form of vicarious contact, and the majority in these samples only experience this type of exposure to the police (Jackson et al., 2020). Our study suggests that 'indirect' experiences may not always convey enough information for respondents to judge police behaviour, but this was certainly not true for all reported observational and media experiences. For example, in nearly 40% of the first reported observational and 80% of media experiences, respondents made a judgement about police fairness. This suggests that these more 'passive' experiences

may also sometimes convey information that is theoretically important to shaping attitudes about the police. Future research should examine the daily prevalence and perceptions of different types of experiences across a variety of social and institutional contexts.

Third, the results from our study revealed that a large proportion of daily experiences (42%) consisted of watching or reading about police through (social) media sources. While research on the role of media in shaping attitudes towards police is well-developed, this research tends to be largely cross-sectional and conducted separately from studies examining personal interactions (Choi, 2021; Graziano, 2019). Research on the influence of media on political and legal attitudes suggests that individual exposure to news is in part driven by prior beliefs (Moule Jr et al., 2019), and that accessing news via social media can lead to the consumption of more polarised information (Wojcieszak et al., 2021). Given self-selection into consuming certain types of media and news stories, experiences via media likely work to reinforce prior beliefs about the police over time. For individuals who consume more polarised information about police (positive or negative), this information is not only likely to shape attitudes directly but influence how individuals interpret personal experiences as well. Experience sampling techniques can also be used to measure what types of media are being

consumed on a daily basis, and evaluate to what extent media and personal experiences interact to influence attitudes towards the police in the short- and long-term. This can be self-reported in the daily survey or prompt (e.g. reporting experiences and providing a link to specific media items), or through a combination of experience sampling and digital trace data (Stier et al., 2020).

Limitations

The current study was a pilot that aimed to explore the use and feasibility of experience sampling in measuring everyday experiences with the police. It is important to stress that this pilot was conducted using a non-probability convenience sample, and so is not generalisable to broader populations. Most notably, the sample is more highly educated, with a low proportion of respondents reporting a migration background. Research on trust in police among youth in the Netherlands shows that while there were no significant gender differences in trust and procedural justice, those with a non-Western migration background (i.e. Turkish, Moroccan, Surinamese, Antillian and other non-Western background) rated police significantly lower on procedural justice indicators (Broekhuizen et al., 2018). These groups also report being stopped by the police more frequently compared to Dutch youth without a migration background (van der Leun et al., 2014). Collecting representative experience sampling data can be a challenge, as research shows this requires that all participants have a smartphone, there is enough motivation and compensation and that quota sampling is used to balance on socio-demographic characteristics (Ludwigs et al., 2020). However, previous research has shown that it can be feasible and valuable to collect experience sampling data among marginalised populations, such as people with HIV (Smiley et al., 2020), people who use drugs (Markowski et al., 2021) and economically disadvantaged adolescents (DW; Murray et al., 2022b). Future research should aim to target and recruit specific subsamples, such as those that may be most vulnerable to police scrutiny or decision-making. Police power is not equally distributed across the population, as those living in economically-deprived areas are more routinely subject to police power (referred to by some as 'police property', (Lee, 1981; Loftus et al., 2022; Reiner, 1992). Experience sampling techniques can help us understand how and when different groups (e.g. those who may have frequent contact as well as those who may have no contact in their lifetime) are exposed to policing on a daily basis, and how these experiences influence attitudes in the moment. In order to ensure generalisability, researchers should use quota sampling, weighting and generalisability checks to ensure that samples are more closely representative of the target population (Thompson and Pickett, 2020).

In order to reduce the burden on participants, measurements were restricted to single items. Although single-item measures are limited in demonstrating internal reliability, studies have shown that single-item measures can perform as well as multiple-item measures in terms of predictive reliability (i.e. how well it predicts a future state) in intensive longitudinal studies (Song et al., 2022). However, it is unknown to what extent single-item measures of attitudes adequately reflect more nuanced theoretical constructs, such as dimensions of trust and legitimacy. Future research using experience sampling techniques should evaluate ideal short-form measures of relevant constructs in order to balance burden with reliable measurement (see, e.g. Murray et al. 2022a).

It is also important to note that taking part in repeated, intensive assessments of experiences or behaviours may have an effect on respondents' reporting, known as reactivity or the Hawthorne effect (McCambridge et al., 2014). Concerns about biases introduced by simply participating in a survey or being observed is not new, however intensive longitudinal studies may elicit a particularly heightened sense of being observed. Previous studies that have examined the impact of experience sampling design on reporting outcomes have found mixed results, with some showing no reactivity (e.g. Coppersmith et al., 2022; De Vuyst et al., 2019) and others showing some reactivity to certain questions (e.g. Ludwigs et al., 2018). Respondents may react to repeated assessments in multiple ways that can lead to different issues with the data and analyses. For example, respondents may become habituated to frequent questions, reducing the within-person variance over time or respondents may become careless over time, introducing measurement error (Eisele et al., 2023). Whether and to what extent reactivity may lead to respondents changing their own attitudes and behaviours may depend on the design and the types of questions asked. A fixed sampling scheme, where prompts are sent at the same time every day, may lead to habituation and/or changing behaviour in order to anticipate the prompt (Dejonckheere and Erbas, 2021). While some reactions such as habituation may be unavoidable, researchers should take these issues into consideration in order to minimise these issues when designing experience sampling studies. More methodological research is needed to examine under what circumstances reactivity occurs in experience sampling studies on criminological topics, and to what extent these changes might influence the data and results.

Overall, these pilot results raise questions about how we measure experiences with the police. Respondents reported a wide range of different experiences in a relatively short period of time, albeit some were more informative about police behaviour than others. If the public experiences a diverse array of experiences in daily life as suggested in the current study, which of these experiences would they be likely to report in a retrospective measure of police contact? Are some more likely to remember and report positive or negative experiences than others? These questions also have important implications for research on experiences with the police and their impact on attitudes and behaviours. Experience sampling techniques can help us capture these

short-term processes in order to better understand when and how different types experiences are likely to shape perceptions of police.

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Supplemental material

Supplemental material for this article is available online.

Notes

1. Available from: https://www.worldvaluessurvey.org/WVSContents. jsp. For a comparison of trust in the police between European countries measured by the European Social Survey in 2018, see: https://opendata.cbs.nl/#/CBS/en/dataset/80518ENG/table?dl=6A7CF.
2. Available from the Central Bureau for Statistics Netherlands SafetyMonitor 2021 (in Dutch): https://opendata.cbs.nl/statline/#/CBS/nl/dataset/85147NED/table?dl=92CB7
3. BOA ('Buitengewoon opsporingsambtenaar') stands for extraordinary investigation officer. These officers help Dutch police to supervise local order and safety (Perachi Vieira, 2020).
4. Only one respondent selected 'prefer not to say' and so while they were included in the descriptive analyses, they unfortunately had to be excluded from the participation analyses since there were not enough respondents in this category to estimate reliable effects.
5. Due to the small number of respondents who reported that they or their parents were born outside the Netherlands ($n=18$), we opted to combine those with a Western and non-Western migration background into one category. The majority of participants in this category reported being born in a Western country, or that one of their parents were born in a Western country (e.g. European countries, Anglo-American countries). The remaining respondents reported that they or their parents were born in Turkey, Suriname, Netherlands Antilles, Indonesia or another non-Western country.
6. For comparison, the Netherlands has a population of about 17 million people, wherein 16% are between 15 and 25 years

old. Nearly 75% of the population were born in the Netherlands to Dutch parents, with 14% born abroad and 11.4% born in the Netherlands to at least one foreign-born parent. A relatively large proportion of those with a migrant background are from Morocco, Turkey, Indonesia, Dutch Caribbean, and Suriname (see https://www.cbs.nl/en-gb/visualisations/dashboard-population). In 2022, around 40% of young people under 25 were enrolled in secondary vocational education, whereas 60% were enrolled in some form of higher education (i.e. higher vocational or university, see https://www.cbs.nl/en-gb/news/2022/40/young-people-relatively-often-choose-secondary-vocational-education). In relation to education, our sample is therefore fairly in line with the similar average population (under 25s).

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