



Police education and democratic policing in Taiwan: a longitudinal quasi-experimental study of the effects of selection and police socialisation on human rights, moral reasoning and prejudice

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Abstract

Objectives To investigate the effects of selection and group socialisation on support of human rights, moral reasoning and prejudice in police officers in Taiwan.

Methods We used a longitudinal quasi-experimental design to track three cohorts of police officers (n = 585) and a comparison group of criminology undergraduates (n = 43).

Results There were no statistically significant differences in measures of human rights, moral reasoning and prejudice between new police recruits and the control group. However, time in police education was associated with a statistically significant reduction in police officer support of human rights, moral reasoning and an increase in prejudice. In the control group, the reverse was true.

Conclusions Exposure to police education in Taiwan resulted in police officers being significantly more prejudiced and significantly less adherent to the principles of human rights and moral reasoning. These results appear to be attributable to police socialisation rather than selection effects.

Keywords Democratic policing · Human rights · Longitudinal quasi-experimental study · Moral reasoning · Police education · Police socialisation · Taiwan

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Introduction

Training is a fundamental part of policing, one which consumes a significant amount of time and resources. Training is widely seen as a central mechanism through which to generate improvements in policing, and for ‘achieving the ethical and professional standards required from police in democratic societies’ (Jonathan-Zamir & Litmanovitz, 2022, p. 3; see also Manning, 2010). In recent decades, there has been a growing trend towards the so-called ‘academisation’ of police training (Bjørge & Damen, 2020; Hallenberg & Cockcroft, 2014), with greater emphases being placed on integrating theory, research and practice, and developing critical thinking and problem-solving skills amongst police officers. Amongst the different approaches to the academisation of police training, two have attracted the most attention: (1) the establishment of accredited police academies to award degree programmes (Bittner, 1972; Corder, 2016; Sherman et al., 1978; White & Heslop, 2012) and (2) the development of police graduate entry schemes (Brown, 2018; Paterson, 2011).

Despite the prevalence and importance of police training, it is generally recognised that research on the impact of different kinds of police training is underdeveloped (see Jonathan-Zamir & Litmanovitz, 2022; Weisburd et al., 2022), particularly in non-Western countries (McGinley et al., 2019). This paper addresses this gap. It reports the results of a longitudinal quasi-experimental study to determine how time spent in police degree programmes in Taiwan affects police officer assessments of human rights, moral reasoning and prejudice, as compared to a sample of non-police criminology undergraduates. In addition, we also assess whether having a bachelor’s degree prior to joining the police moderates the impact of police training on levels of human rights, moral reasoning and prejudice. Crucially, the multiple-group longitudinal design employed in this study enables us to test two prevailing hypotheses that might account for differences between the police and non-police cohorts: selection effects (i.e. individuals who join the police service differ from the general population in terms of, in this study, their advocacy of human rights, levels of moral reasoning and degree of prejudicial thinking) and socialisation effects (i.e. being part of the police service changes individuals towards a shared view of human rights, moral reasoning and prejudicial thinking). To date, we are aware of no longitudinal studies that simultaneously test selection and socialisation hypotheses in a police training context.

The remainder of the paper is organised as follows. The next sections review the research literature on police socialisation and police education, respectively. We then provide a short overview of the Taiwanese police education system so as to provide some context for the analyses that follow. Next, we describe the data and methods used in this study, including details on how human rights, moral reasoning and prejudice were measured. The results then follow, organised around three research questions. The paper concludes by discussing the implications of our findings for police training and future research.

Selection and socialisation

Extensive evidence shows that group membership increases the likelihood that group members go on to share and internalise shared norms and values (Schneider, 1987). Over time, this process of group socialisation can bring about marked changes in an individual's attitudes and behaviours (Guimond, 2000). Similar processes have been observed in a policing context. Police socialisation refers to the process through which police officers may adapt to and internalise certain values, norms and worldviews in order to align with those of their police organisation (Fielding, 1988; Kenney & McNamara, 1999; Thornton & Nardi, 1975; Van Maanen, 1974). This process of police socialisation is generally classified into four phases: (1) pre-entry, (2) police academy training, (3) field training and (4) official assignment. Within each of these four phases, multiple factors may influence the attitudes and behaviours of police officers. For example, prior research identifies three factors which are often influential in the pre-entry phase of police socialisation: (1) reference groups (such as whether individuals have relatives in the police service), (2) motivation for joining the police service (be it for excitement, a sense of camaraderie or perceived job security) and (3) the 'police personality', whereby police recruits possess a set of personality traits that differ from the wider population (Balch, 1972; Charman, 2017; Van Maanen, 1973).

The notion that those who join the police service might be qualitatively different to those who do not join the police service—that is, that there is a 'police personality'—raises competing accounts for why police officers may express a particular set of norms, attitudes and behaviours, namely that the police personality is the result of selection effects. Selection effects can take two forms (see Gatto et al., 2010; Kemme et al., 2021). Self-selection refers to the tendency for individuals to seek out groups or environments which correspond to their own values, ideologies and beliefs. An example would be authoritarian individuals selecting more hierarchy-enhancing environments such as the military and the police. Institutional selection denotes the process whereby institutions recruit individuals that better fit the particular ideology, outlook and values of that institution. An example here is where more hierarchy-enhancing institutions tend to employ more authoritarian individuals. In practice, of course, both effects may be operating in concert.

Empirical studies comparing the effects of selection and socialisation in policing are limited, and those which are available have produced mixed results. For example, some studies have found evidence for selection effects but not socialisation effects. These include Friebel et al. (2019), who found that police applicants tend to exhibit higher levels of trustworthiness than non-police applicants, and Dharmapala et al. (2016) who found more punitive individuals (with stronger-than-average punishment preferences) often sought out law enforcement jobs. By contrast, Kemme et al. (2021) found no evidence to support a selection effect hypothesis, but did observe evidence of socialisation effects. More specifically, they reported falls in levels of punitiveness and authoritarianism amongst police officers over the duration of their police training. Another study suggested that both selection and socialisation effects matter. Data from France, Gatto et al. (2010) found that new police recruits had significantly higher generalised prejudices than participants selected from the general

working population and that police officers with 1 year of training were significantly more prejudiced than their newly recruited colleagues.

The mixed results observed in the literature on police selection and socialisation might be partly attributed to the limitations of the cross-sectional designs used in these studies. This type of research provides only a snapshot of time and is unable to accurately measure temporal changes, which is important in assessments of the impact of the police socialisation process (Bryman, 2015). Longitudinal studies help overcome the limitations of cross-sectional designs and are best placed to measure if and how police officers are influenced at different stages of the police socialisation process (Babbie, 2016). Presently, however, there have been only a handful of longitudinal studies which follow police recruits through the police socialisation process. This shortage of research is most likely attributed to the challenges in systematically tracking one or more cohorts of police officers over time (Charman, 2017).

Relevant longitudinal studies are summarised in Table 1. Three points are considered noteworthy. First is the small number of studies; there are just 13 over a near 40-year period. Second is the diversity in outcome measures used in these studies, from authoritarianism and conservatism to use of force and moral reasoning. Third, and consistent with the findings from cross-sectional studies, is the mixed results from longitudinal research as to which stages of the police socialisation process most affect police officer attitudes and behaviour. Fildes et al. (2017), for example, found that academy training rather than operational experiences had a greater (negative) effect on measures of procedural justice. Charman (2017) found that significant changes in cynicism, suspiciousness and fair treatment took place during the fieldwork phase (between years 1 and 4), as opposed to academy training and the probationary period. Brown and Willis (1985) and Wortley (1992) found authoritarianism reduced during academy training and then increased with greater field experience. Finally, De Schrijver and Maesschalck (2015) found that academy training (including field training) had no effect on police officers' moral reasoning skills.

A limitation of the longitudinal studies presented in Table 1 is that they did not include a comparison group. The absence of a comparison group means that it is not possible to (1) reliably differentiate the outcomes of interest between police and non-police participants before police training (i.e. the selection effect hypothesis) and (2) rule out any maturation effects that occur over the police socialisation process (Chan, 2003; Paoline et al., 2015). Maturation effects denote the process whereby police recruits' beliefs and attitudes may change as a result of them getting older, independent of any police training they receive or the police organisation in which they work. To overcome these limitations, the study reported here uses a quasi-experimental longitudinal design.

Police education

Police education takes many forms. In recent years, there have been increased calls in some countries for a more academic model of police education. These calls form part of a wider movement aiming to 'professionalise' the police service and foster more evidence-based ways of working (see Fielding et al., 2019), with academic

Table 1 Longitudinal studies on the effects of different stages of the police socialisation process

Study	Dependent variables	Pre-entry period	Academy training	Field training	Fieldwork
Brown & Willis, 1985; Wortley, 1992	Authoritarianism		+		-
Christie et al., 1996	Conservative attitudes		-		-
Haarr, 2001	Orientation towards community policing and problem-oriented policing		+	-	
Chan, 2001, 2003	Community service orientation and capacity to fight crime		N		-
Catlin & Maupin, 2004	Ethical orientation		-		N
Oberfield, 2012	Use of force		+		N
Fekjaer et al., 2014	Adherence to the rule of law		N	-	
De Schrijver & Maesschalek, 2015	Moral reasoning skills		N		N
Fildes et al., 2017	Procedural justice, interpersonal skills and use of force		-		N
Charman, 2017	Cynicism and suspiciousness		N		-
	Fair law enforcement		N		-
Krott et al., 2018	Xenophobia		+		-

Note: '+' denotes improvement, '-' denotes worsening and 'N' denotes little change

training viewed as a key means to equip police officers with the skills necessary to commission, interpret and make use of police-relevant research evidence (Brown, 2018; Hallenberg & Cockcroft, 2014; Paynich, 2009). In calling for a more academic model of police education, commentators typically discuss two approaches: (1) the establishment of accredited police academic institutions to award degree programmes (Bittner, 1972; Cordner, 2016; Sherman et al., 1978; White & Heslop, 2012) and (2) the development of graduate entry schemes (Brown, 2018; Paterson, 2011). In relation to the former, the perceived function of a professional police school located within an existing university system is to deliver degree-granting programmes in the field of policing, police administration and/or police science (Cordner, 2019; Sherman et al., 1978). Curricula of these programmes typically emphasise legal, management and policy issues for policing. This emphasis differs from (1) the theoretical understanding of deviance and social control found in most criminology or criminal justice programmes and (2) the basic vocational training found in police academy courses. This sort of professional police education has long been argued as a means to better forge links between police work and scientific scholarship (Bittner, 1972). It is also argued that the accumulation of research and theory on policing since the 1970s is substantial enough to form the knowledge base for police science to be independent of criminal justice (Cordner, 2016). Moreover, a longstanding related debate is that a professional police school should replace criminology or criminal justice programmes at universities as the mainstream of police education in the West, because police mandates are not limited to crime (Cordner & White, 2010; Goldstein, 1977). Despite these arguments, there are few such models of professional police education.

Another issue related to professional police schools is the experience of university education more generally. Higher education is generally viewed as providing a liberalising environment in which students are exposed to diverse ideas and people which, in turn, can help bring about positive outcomes such as greater tolerance of differences and a greater understanding of diverse and multi-cultural societies (Cox & Kirby, 2018; Heath, 2011; Jones, 2016). In other words, this perspective suggests that what kind of degree studied is, arguably, less important than the university experience more generally (Huey et al., 2017). By this argument, without a liberalising environment, policing-centred educational content in a professional police school may not produce those qualities expected of (and often seen in) university students.

The creation of police graduate entry schemes dates back to the 1960s, when the UK government aimed to attract high-performing, critical-thinking graduates into the police as a potential answer to the then crisis of police legitimacy (Lee & Punch, 2004; Punch, 2007). The graduate entry model in the UK has continued under different names and formats ever since (Tong & Hallenberg, 2018), despite a lack of evidence to demonstrate the benefits of recruiting more graduates into the police service Brown (2018). The mixed results on the effect of graduate recruitment into the police service are further confounded by debate about the timing of graduate education—should it occur before or after entry into policing (Brown, 2018; Christopher, 2015; Paterson, 2011)? With the focus on the difference between sworn officers with degrees and those without degrees after official assignment, little is

known about how a bachelor's degree moderates the impact of academy training. Specifically, how does police training affect graduate recruits, compared to general recruits?

Taiwanese police education

This study focusses on policing in Taiwan. The Taiwanese police education system differs significantly from that of most Western police services. Taiwan operates a centralised professional model based around the Central Police University (CPU), which delivers a mixture of liberal arts, professional modules and vocational training to all police officers in Taiwan (Cao et al., 2014). CPU offers a range of degree programmes, including a 4-year programme for high-school graduates, advanced programmes such as doctoral degrees and, most recently, a special-exam programme open only to police recruits in possession of a bachelor's degree or above.

Different degree programmes at CPU follow different curricula. The curricula for the 4-year programmes, for example, consist of three core components: (1) academic subjects, (2) *jingshen* education and military training, and (3) skills training and an internship (CPU educational plan, 2018). Academic subjects cover liberal arts, such as logical reasoning and interpersonal relationships as well as professional policing modules, such as criminal investigation, law enforcement policies and protest management (Cao et al., 2015). *Jingshen* education is a form of patriotic education that highlights the importance of justice and honour so as to instil these values into police recruits (CPU educational plan, 2018). The third component of the CPU curricula—skill training and internship—concerns the practical aspects of policing. Skill training addresses the presumed needs of law enforcement in the field, such as judo, marksmanship and defensive tactics. The internship, which takes place during two summer vacations (in the second and third years), involves cadets being assigned to police stations and professional units (e.g. forensic science division, traffic brigade) according to the department with which they are affiliated (CPU educational plan, 2018). Each internship is around 6 weeks. During the internship, an officer is assigned to a cadet as their instructor (similar to field training officers) and is responsible for evaluating recruits' performance and appropriateness for different police occupations (Belur et al., 2019). The curriculum for the special-exam programme at CPU is more practically oriented than the 4-year programme described above, with a greater proportion of time dedicated to the internship (CPU Training Plan for the Special-exam Program, 2018).

The current study

This study addresses three research questions (RQ):

RQ1: How does exposure to the professional police education model at CPU affect police officers' attitudes towards democratic principles?

As indicated above, professional police schools are rare in the West, and therefore it is unclear how such a police education model impacts police officers in terms of the ideals of democratic policing over the police socialisation process, namely the stages of pre-entry, police training and fieldwork. Moreover, by collecting data at the pre-entry period as well as the other phases of police socialisation, it is possible to test the hypothesis that observed results are attributable to selection versus socialisation effects.

RQ2: How does undertaking the professional police education model at CPU, in comparison to studying criminology at university, affect participants' attitudes towards democratic policing principles?

This second research question compares police recruits to a sample of non-police criminology undergraduates. This question is designed to rule out the potential confounding variable of maturation effects in police socialisation, which has not been tested before.

RQ3: Does possession of a degree moderate the effects of the professional police education model at CPU on attitude towards democratic principles?

The third research question explores whether a police recruit being in possession of a degree makes a difference (or not) in terms of the impact of police academy training on the three outcomes of interest (human rights, moral reasoning, and prejudice).

Data and method

Participants

In recruiting participants for this study, and to account for both selection and socialisation effects, we took advantage of two features of the Taiwanese education system. The first feature was described above, namely that the CPU runs several different police training programmes including the cadre (4-year) and the special-exam (2-year) programme. The cadre programme is for individuals who wish to join the police service immediately after completing senior high school. The special-exam programme is for citizens already in possession of a bachelor's degree or above (in any subject) who have no police experience and who score a sufficiently high mark in the civil police qualification exam.

The second feature relevant to this study is that only one university in Taiwan runs an undergraduate criminology programme: National Chung Cheng University (NCCU) based in Chiayi County. The undergraduate criminology programme at NCCU is a liberal arts course which aims to prepare students for careers in the criminal justice field (not limited to policing). Entry to the NCCU criminology programme is comparable to that of CPU as students admitted by both universities perform similarly in a national entrance exam (Chinatimes, 2014).

The participants in this study were drawn from CPU and NCCU. More specifically, data were collected from four cohorts. The three CPU police cohorts were:

- New police recruits: First-year recruits to the 4-year cadre programme, most of whom had just graduated from senior high school. Each year, around 300 new recruits enrol on the cadre programme at CPU. All had no police experience.
- Cadets: Fourth-year students on the cadre programme who had received 3 years of police education at CPU and had spent time in the field as part of the abovementioned internship programme.
- New graduate recruits: First-year recruits to the police in possession of a bachelor's degree (or higher) and enrolled in the police special-exam programme. There are around 50 graduates admitted to this programme annually. All had no police experience.

Finally, the non-police comparison cohort was:

- First-year undergraduate students in the Department of Criminology at NCCU. There are around 50 students admitted to this programme yearly.

Instruments

As stated at the beginning of this article, police training is viewed as a mechanism through which to generate improvements in police fairness and effectiveness. To this end, it is a key element in achieving the ideals of democratic policing. For the purposes of this study, our focus is on three variables which speak to the core principles of democratic policing: recognition of and respect for human rights (HR), the capacity for moral reasoning (MR) and the absence of prejudice. To elaborate, Neyroud and Beckley (2001: p4) propose that a fundamental tenet of democratic policing is 'the protection and vindication of the human rights of all'. To achieve this, the police need to legitimate themselves to the public by both following procedural justice principles and exercising any use of force fairly, justifiably and impartially (Bradford et al., 2021). Prioritising procedural justice over, say, self-interest or the maintenance of police norms requires a degree of moral reasoning (Kohlberg, 1984; Myyry & Helkama, 2002). Finally, prejudice often drives the improper and inappropriate use of force against individuals of certain genders, ethnicities, class and so on. Acting on prejudicial thinking serves to undermine police legitimacy and erode police-public relations. Taken together then, the practice of democratic policing should correspond to police officers' high endorsement of HR, well-developed levels of MR and low levels of prejudice.

In this study, we measure the three concepts of HR, MR and prejudice using four well-established scales. HR was measured using the Attitude towards Human Rights (ATHR) scale (Leung & Lo, 2012). This instrument consists of 26 items that assess five dimensions of beliefs about human rights (social welfare, civilian constraints, personal liberties, equality and privacy). The ATHR is a 7-point Likert scale with 1 denoting strong disagreement and 7 denoting strong agreement.

MR refers to how one defines issues of fairness, justice and social cooperation (Crowson, 2004). In a policing context, well-developed MR would suggest that people tend to follow procedural justice principles when dealing with conflicts between basic human rights and societal rules (Kohlberg, 1981). Empirically, high levels of MR are also found to be positively associated with compliance with procedural justice (Myry & Helkama, 2002; Wendorf et al., 2002). Here, we used the Defining Issues Test-2 (DIT-2) to measure MR (Kohlberg, 1984; Rest et al., 1999a, b). DIT-2 comprises five scenarios involving moral dilemmas, and when completing DIT-2, respondents are asked to rate and rank the importance of issues corresponding to the levels of MR in each dilemma. Here, we adopt the N2 score, representing the concerns and considerations of procedural justice (Rest et al., 1999a, b). The N2 score ranges between 0 and 75.

Prejudice refers to ‘an aversive or hostile attitude towards a person who belongs to a group, simply because he belongs to that group, and is therefore presumed to have the objectionable qualities ascribed to the group’ (Allport, 1954, p. 7). Here, prejudice is measured using two scales: Right-wing Authoritarianism (RWA, Altemeyer, 1981) and Social Dominance Orientation (SDO, Pratto et al., 1994). Empirically, RWA is found to predict prejudiced attitudes towards minority groups (Poteat & Spanierman, 2010) and support for the police use of excessive violence (Gerber & Jackson, 2017). Similarly, SDO amongst police officers has been shown to be positively associated with supporting the use of deadly force (Perkins & Bourgeois, 2006) and is a reliable predictor of prejudice towards ethnic minorities, homosexuals and immigrants (Perry et al., 2013). The RWA scale comprises 13 Likert-type items designed to measure three dimensions: authoritarian submission, aggression and conventionalism. The SDO scale is a 16-item Likert-type attitude scale, measuring two factors: SDO-Dominance and SDO-Egalitarianism. Both the RWA and SDO are 7-point scales with 1 denoting strong disagreement and 7 denoting strong agreement. We used the average score of the RWA and SDO as the indicator of prejudice. The higher the participants score, the less prejudiced they are.

In addition to the scales described above, study participants were also asked a series of demographic questions (age, gender) as well as whether they had relatives in the police service.

Double translation and pilot test of survey instruments

The survey instruments detailed above were administered in Taiwanese. In translating the scales, we were mindful of the potential threats of cultural and semantic differences. To address this, we performed a double translation exercise (Chang et al., 1999) whereby the original scale (published in English) was translated into Chinese and finally translated back to English independently by two foreign affairs police officers in Taiwan. The two versions of the scale—the original and the double-translated—were then reviewed by the authors to ensure consistency.

Once satisfied that the content was suitable for a Taiwanese audience, we conducted a pilot test with 24 s-year police cadets at CPU in Taiwan, selected via opportunist sampling. Upon completion of the survey, we asked participants to

confirm orally that they understood what was being asked of them and to comment on the working and structure of the survey. Some minor adjustments were made in response to respondent feedback.

Procedure

Data collection in this longitudinal study took place in September 2016, 2017 and 2018 using a paper-based survey. September coincides with the start of term in both the CPU and NCCU and is when all new police recruits (CPU) and undergraduates (NCCU) either had yet to receive any or had received complete academic year police/college education. At CPU, we were authorised by the CPU president to access all three cohorts in a conference room after their daily roll calls. Recruits were informed in advance that a survey would be conducted after the roll call, and they were free to leave if they did not want to participate. After the roll call of each cohort (on three separate days), one of the authors (KL) explained the objectives of the survey and then distributed informed consent forms and the survey. Recruits were asked to leave their email if they were willing to be tracked in subsequent surveys. For anonymity reasons, respondents' identities were coded and kept by a third party. Recruits were allowed to spend up to 1 h completing the survey, but most spent around 35 min. Surveys were collected by KL upon completion. Captains and instructors were asked to leave the room whilst the survey was being completed so as to prevent any potential influence on responses.

The second and third phases of data collection were different for the cadet cohort because cadets had graduated at the time of data collection (September 2017, 2018). In the second phase, we took advantage of the 1-week pre-service training that all police cadets in Taiwan are required to undergo. The training was performed at the training centre in the Fifth Special Police Corps of the National Police Agency (NPA). We were authorised by the NPA to access this cohort for 1 h as part of their training. During the training course, cadets were gathered in a training hall where seating was provided. A procedure similar to that described above for the other cohorts was then performed. It is noteworthy that the sample size of this cohort was reduced at the second data collection stage because some cadets had failed the exam needed to continue their training.

The third phase of data collection for cadets was carried out by an online survey because participants were by then assigned to the various police departments across Taiwan, and it was not possible to gather them together in one place or access them in person. The online survey comprised a brief introduction, informed consent form and the various scales described above and was carried out from mid-August to mid-October 2018. The survey materials were sent out by the authors twice at a 2-week interval, by one of their police peers once 2 weeks after the invitation, and by one of their respected police instructors once 2 weeks after the peer's invitation. Each invitation email was tailored based on the sender's position and the number of times that the invitation had been sent. The online survey took participants around 35 min on average to complete.

At NCCU, undergraduate study participants were accessed via NCCU faculty members. With their help, we used an hour of course time to conduct the survey in a classroom. The procedures conducted were the same as those administered at CPU (e.g. notification beforehand, informed consent). Overall, attrition rates were low in each cohort. As illustrated in Table 2, all the eligible percentages from returned surveys were at least 70% for the three data collections.

Ethics

This study was approved by the research ethics committee at University College London.

Results

Demographic characteristics

Table 3 displays the demographic characteristics of the four cohorts surveyed in this study. There are two notable differences between the police and non-police cohorts. The first difference concerns a sex imbalance: police officers are predominantly male (75%) whilst the non-police undergraduate cohort is mostly female (79%). The second main difference relates to having relatives in the police service. Over one-third (33%) of respondents in the police cohorts reported having relatives in the police service, compared to about one in six for the undergraduate non-police sample. This finding is consistent with prior research which suggests that having police relatives increases the likelihood of joining the police service (Phillips et al., 2010; Sun et al., 2009). In terms of age distribution, as expected, most first-year undergraduates and new police recruits were aged between 19 and 21, whereas cadets and graduate recruits were aged between 21 and 25.

Attrition analysis

Attrition is a common problem in longitudinal studies. The generalisability of study results is jeopardised if participants who remain in a study differ from those who drop out. To determine potential biases resulting from any participant attrition, we compared the demographic and outcome variables for participants who took part in all three waves of data collection with those who did not. There were no statistically significant differences in demographic measures and outcome variables between these participants.

The influence of police education on police officer attitudes: selection or socialisation

Our first research question concerned the impact of police education in Taiwan on police officer attitudes towards human rights, moral reasoning and prejudice. Exploring this research question involved three steps. First, we analysed the relationship

Table 2 Sample size and questionnaire response rate for each cohort over the three waves of data collection

Groups	Cohorts	First collection			Second collection			Third collection		
		Sample size	Valid question-naire	Eligible rate (%)	Sample size	Valid question-naire	Eligible rate (%)	Sample size	Valid question-naire	Eligible rate (%)
CPU	New police recruits	285	283	99.3	246	226	91.87	286	208	72.73
	Cadets	255	242	94.9	179	176	98.32	176	124	70.45
	Graduate recruits	45	45	100	45	45	100	44	42	95.45
NCCU	First-year undergraduates	43	42	97.67	42	37	88.1	40	35	87.5
	Total	628	612	97.45	512	484	94.53	546	409	74.9

Table 3 Demographic Information of Taiwanese police and non-police sample

Demographic characteristics	New police recruits (<i>N</i> =283)	Cadets (<i>N</i> =245)	Graduate recruits (<i>N</i> =45)	First-year undergraduates (<i>N</i> =42)	Total
Gender (male)	78.1%	75.9%	44.4%	21.4%	70.9%
Age (below 21)*	96.5%	1.2%	0.0%	97.6%	44.9%
Police relatives (yes)	35.7%	26.1%	37.8%	16.7%	30.6%

*Below: 18–21; above: 22–28

between participants' demographic characteristics and our outcomes of interest (HR, MR and prejudice). Second, we assessed the difference in outcome measures between new police recruits and first-year criminology undergraduates upon enrolment. This is a test of the selection hypothesis. Third, we assessed the trajectory of the new police recruits during their first 2 years at CPU and the trajectory of the police cadets during their first year of police service. To do this, we performed repeated measures analyses of variance (RM ANOVA) to determine the influence of both between-subjects effects (gender, cohort and having relatives who work in the police) and within-subjects effects (time in police and/or university education) (Oberfield, 2012; Phillips et al., 2010). The tested interaction effects are limited to two-way interactions to avoid high-order interactions (i.e. three or more variables interact) and thus uninterpretable effects (Girden, 1992).

Analysis of the relationship between demographic characteristics and our outcomes of interest found one within-subjects variable (cohort by time) and one between-subjects variable (gender) had a statistically significant impact on levels of HR, MR and prejudice (Table 4). The statistically significant main effect of gender indicated that males were less accepting of HR (4.85 vs 5.01), had lower levels of MR (40.6 vs 43.3) and had higher levels of prejudice (4.46 vs 4.66) than females. The statistically significant interaction effect of cohort by time indicated that the rate of change over time in HR endorsement, MR and prejudice varied significantly amongst participating cohorts.

Importantly, pairwise comparisons between new police recruits and first-year undergraduate students upon enrolment showed no statistically significant differences ($p > 0.05$) in HR, MR and prejudice scores (5.06 vs 5.2, 44.33 vs 39.6 and 4.67 vs 4.73, respectively). These results indicated that upon enrolment to CPU, Taiwanese police recruits did not exhibit any measurable difference in the three outcome variables compared to students newly enrolled in the NCCU criminology programme. We therefore found no evidence of any meaningful police selection effects with respect to HR, MR and prejudice.

Considering changes over time, for police recruits, the HR scores of new recruits dropped significantly over the 2 years they studied at CPU, with a first fall from 5.06 to 4.91 ($p < 0.01$) and a further drop to 4.80 ($p < 0.05$), as plotted in Fig. 1. The drop in HR scores collectively accounted for a medium effect size (Cohen's $d = 0.482$). New police recruits fluctuated in MR scores over the 2-year period following enrolment, with an initial fall from 44.33 to 42.07 ($p < 0.05$) and a bounce back to 43.68

Table 4 Significance tests for repeated measures ANOVA

Effects	HR			MR			PJ		
	<i>df</i>	<i>F</i>	η^2	<i>df</i>	<i>F</i>	η^2	<i>df</i>	<i>F</i>	η^2
Within-subjects effects									
Time	(1.98, 1005)	9.91***	0.013	(1.91, 865)	1.49	0.002	(1.95, 977)	20.16***	0.04
Cohort by time	(5.96, 1005)	2.63**	0.016	(5.74, 865)	3.23***	0.016	(5.86, 977)	5.24***	0.036
Gender by time	(1.97, 1005)	10.4***	0.007	(1.91, 865)	2.75	0.001	(1.95, 977)	0.41	0.001
Police relatives by time	(1.97, 1005)	1.46	0.001	(1.91, 865)	0.8	0.002	(1.95, 977)	2.64	0.002
Between-subjects effects									
Cohort	(3, 506)	1.74	0.019	(3, 452)	0.27	0.077	(3, 500)	5**	0.023
Gender	(1, 506)	7.5**	0.012	(1, 452)	14.39***	0.012	(1, 500)	16.82**	0.034
Police relatives	(1, 506)	0.02	0.001	(1, 452)	0.01	0.001	(1, 500)	0.39	0.001
		$(X^2(2) = 10.59, p < .01), \epsilon = .993$		$(X^2(2) = 28.16, p < .001), \epsilon = .957$		$(X^2(2) = 19.45, p < .001), \epsilon = .977$			
		* $p < .05$, ** $p < .01$, *** $p < .001$							

We used the average score of the RWA and SDO as the indicator of PJ. The higher participants score, the less prejudiced they are

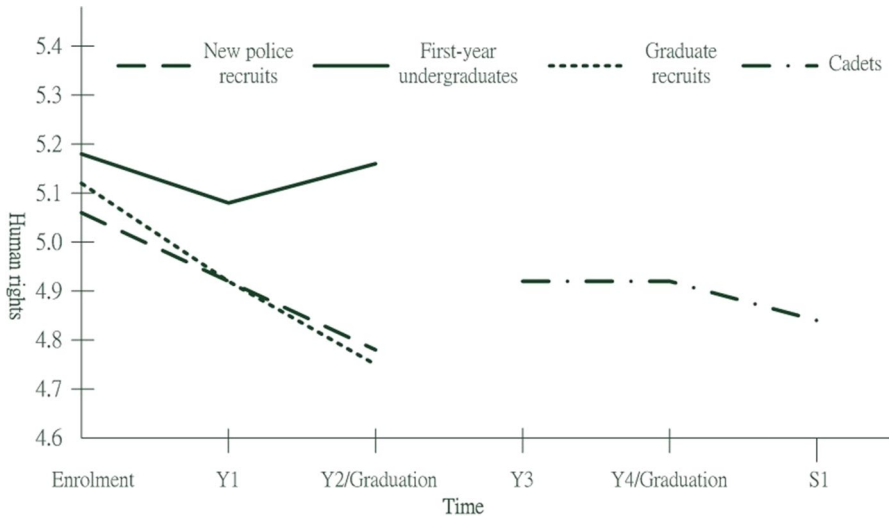


Fig. 1 Human rights trajectories of each cohort

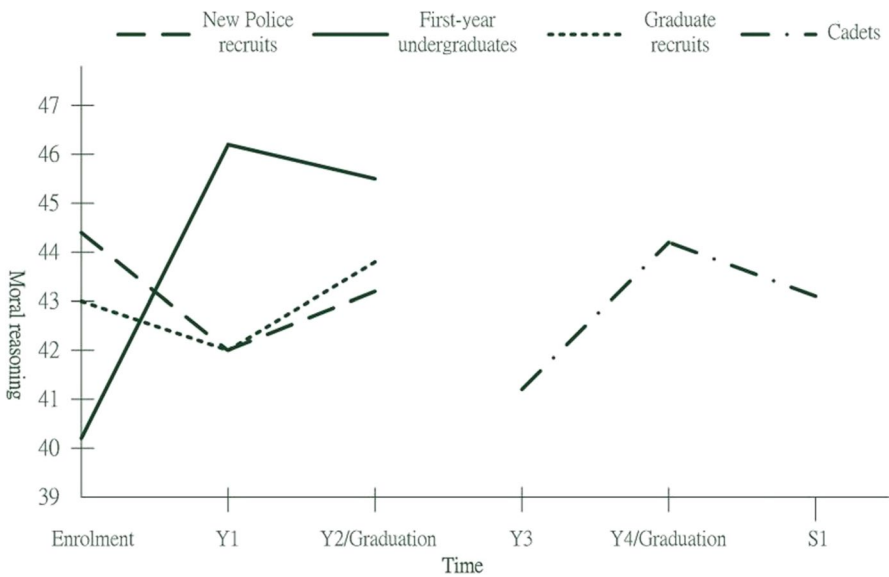


Fig. 2 Moral reasoning trajectories of each cohort

($p > 0.05$), as plotted in Fig. 2. The overall drop was not statistically significant. In terms of prejudice, new police recruits witnessed consecutive drops (i.e. became more prejudiced) over their 2 years in police training (from 4.67 to 4.37, $p < 0.001$, and then to 4.35, $p > 0.05$), as plotted in Fig. 3. The decline collectively accounted for a medium effect size ($p < 0.001$; Cohen's $d = 0.607$). These results indicate that the first 2 years of police education in Taiwan had a statistically significant adverse

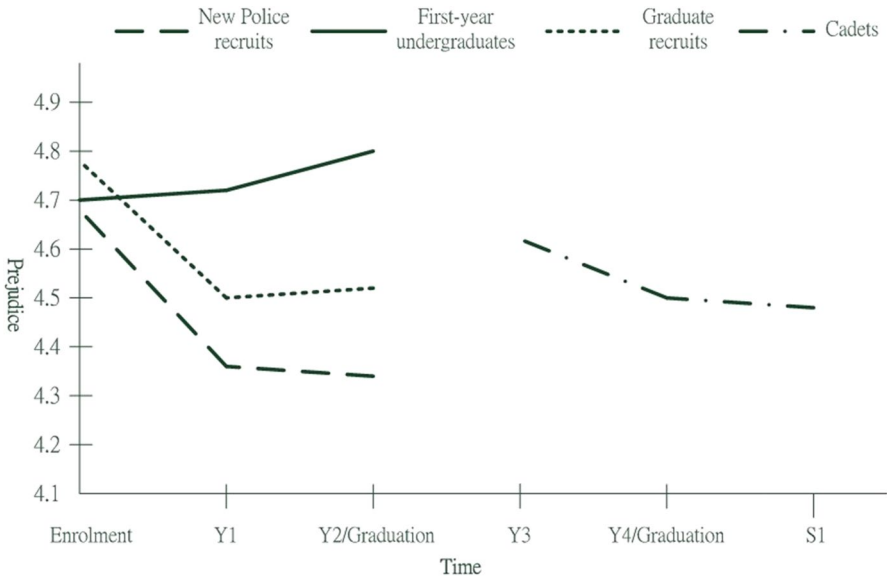


Fig. 3 Prejudice trajectories of each cohort

effect on new police recruits' endorsement of HR and levels of prejudicial thinking, but no influence on levels of MR.

Regarding the influence of the first-year of police service, the cadet cohort saw non-significant falls ($p > 0.05$) in HR endorsement (from 4.91 to 4.84), MR scores (from 44.1 to 43.02) and prejudice (from 4.51 to 4.5) during their first year of police service, as illustrated in Figs. 1, 2 and 3. Our results suggest that the effect of police work and culture did not significantly affect cadets' HR, MR and prejudice in the first year of active police service. Taken together, these results suggest that of the different phases of police socialisation, and in our sample of Taiwanese police officers, police education had a more pronounced (negative) effect on HR endorsement and prejudice than time spent in the field as a serving police officer.

Comparing police and university education

Our second research question was concerned with changes between police and non-police cohorts over time. This was examined by performing a contrast analysis where the focus is on average changes of, in this case, HR, MR and prejudice amongst new police recruits and first-year criminology undergraduates over time (Bertrand et al., 2004; Gertler et al., 2016). The contrast analyses between the two cohorts showed a statistically significant negative estimate in HR endorsement (-0.236 , $F(1,295)=2.035$, $p=0.07$, $r=0.09$), MR (6.708 , $F(1,263)=3.558$, $p < 0.05$, $r=0.11$) and prejudice (-0.402 , $F(1,289)=11.52$, $p < 0.001$, $r=0.2$), as illustrated in Figs. 1, 2 and 3. These results indicate that for new police recruits, the trend in their HR scores was significantly more negative than that of new

criminology undergraduates over time, that new undergraduates' trend of MR scores was significantly more positive than new recruits', and that the prejudice trend of new undergraduates was significantly less negative than that of new police recruits. In other words, new criminology undergraduates became significantly more supportive of HR, more developed in MR and less prejudicial than new police recruits between enrolment and the end of their 2nd year. These findings rule out the abovementioned maturation effect and lend support for the existence of a police socialisation effect with respect to changes in HR, MR and prejudice.

Does a bachelor's degree moderate the impact of police education?

Our final research question asked whether possession of a degree prior to joining the police service moderated the impact of police education in Taiwan. This was again examined using contrast analysis techniques but this time by comparing new police recruits without a degree and new police recruits in possession of a degree (or higher). The contrast analysis showed no statistically significant differences between the two groups in terms of HR endorsement (-0.098 , $F(1, 324)=0.573$, $p>0.05$, $r=0.003$), MR scores (1.238 , $F(1, 324)=0.207$, $p>0.05$, $r=0.004$) and prejudice (0.081 , $F(1, 324)=0.584$, $p>0.05$, $r=0.025$), as illustrated in Figs. 1, 2 and 3. These results indicate that graduate police recruits were more negative in HR scores and more positive in MR and prejudice than new recruits between recruitment and completion at CPU, but not significantly so. These results suggest that with respect to HR, MR and prejudice, possession of a bachelor's degree does not moderate the observed socialisation effects occurring during police academy training in Taiwan.

Discussion

Across the globe, police training is widely recognised as a fundamental tool in achieving the ideals of democratic policing. Amongst various types of police training, the so-called 'academisation' of police training is considered promising. This typically refers to two approaches: (1) the establishment of accredited police academic institutions to award degree programmes and (2) the development of police graduate entry schemes. However, rarely have these two kinds of police training been empirically evaluated in terms of their effect on police officers' attitudes and behaviours.

Based on a longitudinal quasi-experimental design, the present study explored whether time spent in professional police education in Taiwan affected police officer endorsement of human rights, levels of moral reasoning and prejudicial thinking, three concepts considered relevant to the pursuit and practice of democratic policing. By including a comparison group of undergraduate criminology students, this study was able to overcome limitations in previous research and account for possible selection, socialisation and maturation effects on our outcomes of interest.

There are three main findings in this study. First, we found no meaningful differences in demographic characteristics and outcome variables between new police

recruits and criminology undergraduates upon enrolment. Put differently, we found no evidence of a police selection effect, at least in relation to HR, MR and prejudice. Second, time spent in police education in Taiwan was associated with decreases in police recruits' scores on HR, MR and increases in scores on prejudice. In the comparison group of undergraduate criminology students, the reverse was true. These results rule out the hypothesis that changes in police recruits over time can be explained by maturation effects. Third, no difference existed between graduate police recruits and new police recruits from enrolment to the end of the second year in the three outcome variables. Put differently, possession of a bachelor's degree in graduate police recruits did not mediate the impact of police education in Taiwan on HR, MR and prejudice.

On the stages of police socialisation

Amongst the stages of police socialisation examined in this study, police training was found to have a more pronounced effect on police recruits' scores on HR, MR and prejudice, compared to individual characteristics (pre-entry period) and police organisational norms (fieldwork). The potential influence of variables at the pre-entry period was examined by comparing new recruits at CPU and undergraduates at NCCU, with no statistically significant differences being observed. The lack of influence during this pre-entry period is consistent with previous research that examined new recruits' motivation to study at CPU (Tarnq et al., 2001). That research showed that the promise of job security and the influence of parents were key motivations.

By contrast, the lack of influence in the pre-entry period contradicts the studies on 'police personality' that suggested that people with personal characteristics such as the desire for adventure or authoritarian attitudes choose police as their career (Balch, 1972; Bardi et al., 2014; Conti, 2009; Sollund, 2008; Van Maanen, 1973). The contradiction might be explained by the assumption that 'police personality' is shared amongst criminology majors (i.e. new undergraduates) and not limited to police recruits. That is, people who seek careers in the criminal justice system or study crime-related fields might have similar inclinations in these outcome variables. This assumption, however, cannot withstand the finding that police education did lead to notable divergences between new police recruits and undergraduates in terms of the outcome variables measured here. If 'police personality' should be shared by police recruits and new criminology undergraduates, then they would not differ from each other significantly when exposed to police and college education. Furthermore, the lack of influence at the pre-entry period means the selection hypothesis was not supported here (Dharmapala et al., 2016; Friebe et al., 2019; Gatto et al., 2010). The make-up of police officers sampled here at the end of the socialisation process appears to be largely the product of organisational or group socialisation processes (Brown & Willis, 1985; Charman, 2017; Reiner, 1982).

Regarding the other two stages of police socialisation, police education at CPU was found to have a significant influence on new police recruits' HR endorsement and prejudice levels, whilst fieldwork exerted little impact on rookie officers in the three outcome variables. These findings are consistent with the longitudinal studies

that found that academy training, rather than operational experiences, had a greater (negative) impact on officer attitudes and behaviours (Catlin & Maupin, 2004; Fildes et al., 2017). This significant change during police training and non-change during police fieldwork might be explained by both the socialisation process in academy training (Chappell & Lanza-Kaduce, 2010; Conti, 2011) and the similarities of organisational norms and culture in training/working context between CPU and Taiwanese police organisations (Lin et al., 2022). The socialisation process in the CPU entails stripping recruits' old civilian identity via imposing a series of degradations and channelling them towards the police occupation that is characterised by the 'formal, mechanical and arbitrary bureaucratic features' (Chan, 2003; Van Maanen, 1974, p. 88). Through this process, police recruits might already adjust themselves to the hierarchical, homogeneous context which is similar to Taiwanese police organisations that are characterised by strict discipline, obedience to authority, conservatism, formalism, hierarchy and rigorous performance evaluation (Cao et al., 2014; Ling, 2012). In other words, the similarities between CPU and Taiwanese police organisations in terms of organisational norms and culture might secure the continuity of attitudes towards democratic ideals from police training to police service.

The findings that police training rather than fieldwork exerted a significant impact here, however, conflict with those of some longitudinal studies that fieldwork instead of academy training mattered more in affecting police officers' attitudes and behaviour (Chan, 2003; Charman, 2017) and that both academy training and fieldwork played a part (Christie et al., 1996; Wortley, 1992). For example, Charman (2017) found that recruits were more negatively influenced in the areas of cynicism and suspiciousness by their street experiences than by their short-lived initial training experiences. Another case in point is the study by Christie et al. (1996), where police recruits were observed to become less liberal in attitudes towards homosexuals and authority between the start of the police academy and the end of 2 years of police service. The mixed results that street experience exerted effects in some studies but not others might be attributed both to the communities in which police officers were deployed and worked (Wortley, 1992) and to the social and political context of policing in general (Chan, 2003; Charman, 2017). In the sense, the result that rookie officers did not change in attitudes towards democratic ideals in the first year of service could be explained by the rapid social and political changes after the democratisation in recent decades in Taiwan (Cao et al., 2014). However, it is beyond the scope of the present study to discuss the social and political context of Taiwanese policing here, and thus we will move to the liberalising effect of police training found in previous research in the next subsection.

The comparison between police education and criminology programmes

The professional model of police education at CPU was negatively associated with all outcome variables, compared to the criminology programme at NCCU. This result, on the one hand, ruled out the maturation effect that with the increase of age,

new recruits and undergraduates might become more or less supportive of democratic ideals altogether, regardless of the types of education they experienced.

On the other hand, the divergence of attitudes towards democratic ideals between these two cohorts might be attributed to the disparities between the two universities, which mainly lie in their respective provision of *jingshen* education and militaristic training. *Jingshen* education is aimed to teach 'correct' thinking and cultivate morality¹ (CPU educational plan, 2018; NCCU Course Offering for Bachelor's Degree, 2018). However, the way *jingshen* education is conducted on the ground involves close control of routine activities, discipline, group punishments, ritualistic concerns for details, and repetitive exercises (e.g. drill, recitation) (Adlam, 2002; Cao et al., 2015; Lin, 2020). This education puts recruits under intense surveillance where their HR are often restricted. One of the components of *jingshen* education, dormitory checks, is an example that recruits' privacy is infringed because their personal belongings are under unannounced and unscheduled inspection. Such training context might plausibly impede recruits from internalising HR standards prescribed in textbooks and lectured about in courses.

Militaristic training is the other source considered here to reduce recruits' adherence to HR because of its punitive orientation through a chain of command and the dispensing of discipline. The chain of command forms a 'superordinate-subordinate' relationship between recruits and instructors that instils recruits' obedience and solidarity (Chappell & Lanza-Kaduce, 2010; Conti & Doreian, 2014). These emotions, however, often fail to evoke the questioning of inequality and awareness of oppressive practices (Chen & Tang, 2019; Chen et al., 2015). Recruits might thus become less willing to endorse HR over time. Likewise, the contents of *jingshen* education and militaristic training described above might also account for the recruits' deterioration of prejudice. With those characteristics of *jingshen* education and militaristic training, CPU can be compared to a hierarchy-enhancing institution which is often found to re-enforce recruits' prejudice (Chappell & Lanza-Kaduce, 2010; Gatto et al., 2010).

By contrast, numerous studies have found that college education is positively correlated with advanced moral reasoning (Mayhew et al., 2016; McNeel, 1994). Elements of college education identified to contribute to this association include the general intellectual milieu of colleges that fosters the exchange of ideas, exposure to multiple perspectives regarding social issues, academic values of critical thinking and truth-seeking and institutional values of academic integrity and personal responsibility (Mayhew et al., 2016). Although liberal arts and academic subjects are delivered at CPU, the environment of this university seemingly did not allow for

¹ We are aware that training materials at the two universities, especially those directly linked with the outcome variables, may be accounted for the difference between new police recruits and new undergraduates. Except HR, of which directly related courses (e.g. human rights protection) are delivered at both universities, no other courses are directly related to MR and prejudice at the two universities. Other courses that are indirectly related to MR and prejudice such as ethics and gender equality are delivered at both universities. Therefore, courses, directly and indirectly, related to the outcome variables are considered quiet equivalent at the two universities, and thus training materials should not have differential impact on the two cohorts.

these facilitators, such as the free exchange of ideas and airing of multiple perspectives (Chiou, 2003).

The disparities between CPU and NCCU responsible for the differential impact on new recruits and undergraduates in attitudes towards democratic ideals involve a more fundamental issue—institutional regulation. Although CPU is a professional police school that delivers degree programmes with curricula comprising liberal arts, professional modules and vocational skills, its model of regulation is based on military hierarchy and Weberian administrative bureaucracies, both of which emphasise authority structures (Hough et al., 2018). Such a regulation model, however, is inconsistent with that adopted for classic professional bodies such as medicine and law, in which professional knowledge carries particular weight and their members operate autonomously and commit themselves to a set of ethical precepts (Lumsden, 2017; Stone & Travis, 2011). In that sense, to prepare police recruits for the police service as a profession, CPU needs radical changes of introducing a model of institutional regulation that corresponds with contemporary professions.

On the influence of a bachelor's degree

The results for RQ3 indicated that recruits with a degree did not perform differently from those without a degree in policing training in terms of the three outcome variables. The point to be discussed here is the mixed results of graduate officers' performance in comparison with their general colleagues' in the previous research (Brown, 2018; Paterson, 2011). The mixed results are further blurred by the uncertainty of whether the influence occurs before (police training) or after police work (police work/culture). This research identifies that the influence takes place in police academy training. In other words, at the end of police academy training, graduate recruits are not distinguishable from general recruits in the outcome variables, and thereafter there might be no difference between graduate officers and their colleagues when investigated in the field in the previous research.

The main objective of the graduate entry scheme is to change the negative aspects of police culture via attracting candidates with critical reflection to the role of police in the complexity and context of post-modern society (Flanagan, 2008; Neyroud, 2011). This objective might not be achieved as the expected qualities cultivated in previous higher education seems to struggle to survive the de-socialisation process in police academy training (Brown et al., 2018; Cox & Kirby, 2018). More specifically, the qualities expected of graduate recruits, such as endorsement of HR, reflection on fairness and egalitarian beliefs, might be restricted and pressed by the vocation-oriented curricula (internship included) and hierarchical, homogeneous campus experience, leading graduate recruits to accept and assimilate themselves into, rather than resist, police culture.

Limitations

Three limitations warrant mention. The first limitation is construct equivalence, a common methodological issue in cross-cultural research. It relates to issues of

equivalent meaning and significance of research constructs in different contexts (Bryman, 2015; Buil et al., 2012). As the applied research construct and instruments in this research were mainly created, developed and validated in western countries, it is not clear whether the interpretation of these constructs measured by these instruments is applicable to Taiwan or not. We believe that our translation and pilot exercises, described earlier, helped reduce this risk. The second concern relates to the time period covered in this study, that is, from police recruitment to the first year in the field. It is possible that this time period is insufficient to reliably measure all the possible effects of police socialisation, most notably those influences that might have a causal effect beyond the first year of police service (Arnatt & Beyerlein, 2014; Rus et al., 2012). Further research over a longer time period is hence needed. The third limitation relates to the distinction between attitudes and behaviour. In this study, we used established scales to provide survey-based self-report measures of HR, MR and prejudice and found a concerning change in these measures amongst our police cohorts completing their police education. Whilst a key tenet of social psychology is that attitudes predict behaviours, we acknowledge that in this study we cannot demonstrate that negative changes in, say, prejudicial thinking led to increases in police officer prejudicial behaviour (however defined). Further research is therefore needed to assess, likely using observational and/or peer-assessment methods, whether observed (negative) changes in police officer attitudes following time in police education in Taiwan are associated with commensurate (negative) changes in police officer behaviour and police-public encounters.

What, then, are the implications of our findings for police education in Taiwan? One implication relates to CPU experience. In an effort to foster a learning environment more akin to that of the NCCU, the CPU may explore the use of a tutorial system that focuses on regular, small-group teaching sessions in which students orally communicate, analyse and criticise others' and their own ideas so as to create more equal relationships between recruits and instructors/seniors (Palfreyman, 2002). Such equal relationships should raise officers' awareness of oppressive practices. The other suggestion emanating from our findings is the creation and operation of autonomous organisations such as student associations on CPU campus where cadets learn to govern themselves. The sort of association can provide recruits with practice in democratic processes where they can have their say on social and political issues both within the institution and outside the campus (Sklansky, 2005).

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