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Contact is a stronger predictor of attitudes toward police than race: a state-of-the-art review

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Abstract

Purpose – This scoping review thoroughly scanned research on race, contacts with police and attitudes toward police. An exploratory meta-analysis then assessed the strength of their associations and interaction in Canada and the USA. Key knowledge gaps and specific future research needs, synthetic and primary, were identified. The paper aims to discuss these issues.

Design/methodology/approach – A germinal methodological framework for conducting scoping reviews was used (Arksey and O'Malley, 2005). The authors searched for published or unpublished research over the past 15 years and retrieved 33 eligible surveys, 19 of which were included in a sample-weighted meta-analysis.

Findings – The independent association of contact with attitudes toward police was estimated to be three times larger than the independent race association. Three large knowledge gaps were identified. Almost nothing is known about these associations among specific racial groups as they were typically aggregated into visible minority groupings. The authors have essentially no knowledge yet about specific racial group by a specific type of contact interactions. There is also a lack of generalizable knowledge as research has been largely restricted to locales.

Originality/value – This is the first research synthesis of race and attitudes toward the police that incorporated contacts with the police. Its observation of the relative importance of contacts suggested a great preventive potential. This scoping review identified needs for a full systematic research review and a formal meta-analysis to plan future primary research including large national studies that are truly representative of Canada and America's diversity. Such will be needed to advance more confident knowledge about the factors that would support more trusted relationships between police and people in the communities they aim to serve.

Keywords Race, Meta-analysis, Attitudes towards police, Contacts between police and public, Research synthesis, Scoping study

Paper type Literature review

In both Canada and the USA, police officers are representatives of the state and have a great deal of authority over citizens (McKenna, 2002). Police departments and individual officers are responsible for “enforcing the law, preventing and reducing crime, assisting victims, maintaining order and responding to emergencies” (Hutchins, 2014, p. 4); and depend heavily on individual citizens to assist them in meeting these responsibilities (Brown and Benedict, 2002; Decker, 1981). For decades, it has been understood that those who have negative attitudes toward police are less likely to co-operate with them, making it more difficult for the police to fulfill their duties (Hahn, 1971). In their review of citizens' attitudes toward police, Brown and Benedict (2002) suggested that “police officers ought to be concerned about how they are viewed by the public, if for no other reason than preservation of their careers” (p. 545). The importance of advancing understandings about citizens' attitudes toward police is further underscored by the notion that they are closely related to the safety and well-being of both police officers and citizens (Myrstol and Hawk-Tourtelot, 2011). Finally, Brown and Benedict (2002) argued that the police need to be concerned about citizens' attitudes toward them because a large part of their mandate is to serve the public.



Thus, establishment and maintenance of positive relationships that foster positive attitudes towards police are imperative for the fulfillment of this mandate.

Although studies have indicated that citizens generally demonstrate positive attitudes and satisfaction with police, this varies between socio-demographic and other groups (Brown and Benedict, 2002; Decker, 1981; Peck, 2015). Many of the studies reviewed suggested that negative or unfavorable attitudes toward police were influenced largely by being a racial minority group member or by having had negative experiences with police, direct or vicarious.

Previous reviews

This scoping review found three literature reviews related to attitudes toward police, including one systematic review focused on empirical studies of the relationship between race and attitudes toward police (Brown and Benedict, 2002; Decker, 1981; Peck, 2015). The first, conducted by Decker (1981) reviewed 34 studies of individual or contextual predictors of attitudes toward police. Individual variables included race, age, gender and socio-economic status. Context included variables such as neighborhood culture, experiences with police and the effects of victimization. Even prior to Decker's review it was understood that prior contact with the police impacts citizens' attitudes toward police. Distinctions were made in the types of contact citizens experience such as voluntary or involuntary and positive or negative. For example, one of the reviewed studies by Campbell and Schuman (1972) indicated that because of their more prevalent involuntary and negative contacts, African American people had less favorable attitudes toward police than did white people. Decker concluded that race and contact are the primary predictors of attitudes toward police. Although this review was not systematic as it did not report study selection methods, it advanced theory and provided guidance for future research. In fact, it served as the starting point for a more rigorous research review 21 years later.

A second review by Brown and Benedict (2002) "updated and extended Decker's" (p. 543). Much relevant research had been accomplished over the two decades since Decker's (1981) review. Brown and Benedict cited 201 studies. Consistent with Decker, Brown and Benedict also found that African American people had consistently less favorable attitudes toward police than white people. Brown and Benedict furthered this synthetic knowledge in several ways. They found that Hispanic people tended to hold less favorable views of police than white people, but more favorable views than African Americans. They also identified another important contact distinction: police- vs citizen-initiated. Finally, they cross-validated Decker's conclusion that race, contact with police, neighborhood culture and age all impacted attitudes toward police. This non-systematic review also continued to advance theory and clarify knowledge gaps. For example, it suggested that the race attitudes toward police association may be modified by different types of contact people had with the police.

The third review of research on attitudes toward police, a systematic review, focused solely on racial minority vs majority group member's perceptions of the police (Peck, 2015). Jennifer Peck's "exhaustive literature search yielded 92 empirical studies" (p. 198). Replicating racial minority-poorer attitude toward police relationships, it was limited in not including studies of the effect of contacts with police on attitudes toward police. Peck did, however, identify the need for future research "to disentangle when race/ethnicity influence how juveniles and adults perceive police satisfaction, safety, and encounters" (p. 198). Another limitation was that it only included studies from the USA, excluding relevant Canadian studies. Our review of Peck's review identified ten studies that addressed contact. Of these, three studied contacts as independent predictors of attitudes toward police. Only one considered possible interactions of race and contacts with police. This overview of three previous reviews, narrative and systematic, strongly suggests to us that an updated

thorough scan of recent research is needed. Such a scan of the independent and interacting effects of diverse racial groups and diverse types of contact with the police in Canada and the USA seems a necessary first step to coherently plan future research, primary and synthetic. This scoping review aims to meet this need.

Despite the value of previous reviews, given their limitations and the “large, complex and heterogeneous nature” (Peters *et al.*, 2015, p. 141) of literature regarding attitudes toward police, a systematic scoping review is warranted. Aligned with rationales for conducting a scoping review outlined by Arksey and O’Malley (2005), the purpose of this scoping review is to identify the key gaps in knowledge related to citizens’ attitudes toward police, to guide a full systematic research review, perhaps with a quantitative meta-synthetic component and ultimately, to provide direction for the most valid and practically useful future primary research.

Methods

The methodological framework outlined by Arksey and O’Malley (2005) and updated by Levac *et al.* (2010) and Tricco *et al.* (2016) was used to guide the process and presentation of this scoping review. The subsequent exploratory meta-analysis was undertaken to begin to synthesize existing empirical evidence and to gain suggestive understandings about the relative size of race and contact associations with attitudes toward police.

Eligibility criteria

The initial research question that guided the current review was:

RQ1. What variables impact individuals’ attitudes toward police?

As is common with scoping reviews this question evolved, especially as previous reviews emerged. Initially, an enormous amount of literature arose. According to Arksey and O’Malley (2005), parameters in a scoping review “can be made once some sense of the volume and general scope of the field has been gained” (p. 10). This is how the current review unfolded. Developed study exclusion criteria were: focused specifically on youth, focused on attitudes toward specific police activities or programs such as racial profiling or community policing and non-English articles. Studies solely of youth were excluded because they seemed to have been well-represented in the general population studies. Further, Sargeant and Bond (2015) argued that youth’s attitudes toward police are often shaped by family contexts not just by encounters with the police. Therefore, changing adults’ attitudes toward police will probably similarly affect youth’s attitudes. Attitudes associated with such police behaviors or tactics as traffic stops or stop-and-frisk programs were too specific to validly respond to the original scoping review question. Non-English papers were excluded because of a lack of funding for their translation. Finally, retrieved qualitative studies, although saved and used as interpretive adjuncts, were excluded from the full scoping review and exploratory meta-analysis because they did not meet what became the primary inclusion criterion of being able to estimate race and/or contact associations with attitudes toward police.

Search strategy and study selection process

The first author searched the following published research and unpublished literature databases until May 1, 2017: Campbell Collaboration Library, JSTOR, PsycINFO, Social Services Abstracts, Social Work Abstracts, Sociological Abstracts, ProQuest (41 interdisciplinary databases including Dissertations and Theses) and Google Scholar. An outline of the keyword search scheme is in the Appendix (Table A1). Searches were assisted by an experienced, master’s-level library scientist (Arksey and O’Malley, 2005). After sifting through approximately 2,500 articles, the Decker (1981) review emerged in the reference list of a tangential systematic review found in the Campbell Collaboration Library (Mazerolle *et al.*, 2013). Further searches located the

Brown and Benedict (2002) review in Google Scholar. Thinking our search complete, we began to plan a systematic update of Brown and Benedict's (2002) non-systematic review. At this point, another inclusion criterion emerged. Given the volume of literature and that fact that it had been reviewed until 2002, studies published in 2002 or more recently would be included in this review. All searches were augmented with searches of the reference lists and authors of retrieved manuscripts. When the first author was not certain about a study inclusion decision both authors reviewed the decision, ultimately agreeing to either include or exclude the study.

The Peck (2015) review was identified through a reference list search. Consequently, the question guiding this review became:

RQ2. What are the associations of race, contact and their interaction on attitudes toward police?

Despite Decker's (1981) presentation of evidence more than three decades earlier, it seemed that not enough emphasis was being placed on the influence of police contacts and behaviors on citizens' attitudes toward police. Peck confirmed this gap. As previously noted, there was no mention in her systematic review of how the race attitudes toward police relationship might be affected by various types of contacts: positive vs negative, voluntary vs involuntary or citizen- vs police-initiated. Development of a comprehensive and coherent plan to fill this significant knowledge gap is the primary objective of this scoping review and exploratory meta-analysis. At this point, the published and unpublished database searches were systematically replicated, focusing on the final research question.

It became apparent through replication searches that fewer studies accounted for both race and contacts. This inclusion criterion was balanced by another that expanded the sample of studies. This synthesis extended Peck's (2015) sampling frame of American studies by including Canadian studies. For cultural reasons as well as the modestly funded, the exploratory nature of this scoping review, studies accomplished in other countries were excluded. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) diagram outlining the study selection process is displayed in Figure 1 (Aromataris and Riitano, 2014; Peters *et al.*, 2015). A total of 33 studies met all criteria including 31 journal articles, one doctoral dissertation and one master's thesis. The 19 that allowed for the calculation of a race or contact association with attitudes toward police were also included in the exploratory meta-analysis. Studies included in the scoping review are noted in the reference list with (a). Those also included in the meta-analysis are noted with (b).

Results

A descriptive overview of the 33 studies included in the scoping review and meta-analysis is presented in Table I. More detailed data from the studies were reviewed and charted on a spreadsheet. Data included: authors, year of publication, study sampling frame and response rate, conceptualization of race and contact variables, operational definitions of attitudes toward police measures, key findings and study limitations (Table AII of the Appendix). The information displayed in these two tables will be presented in tandem.

There were 29 American and four Canadian studies, all surveys, that observed the associations of race and contact with attitudes toward police. Five studies sampled university students – the remainder sampled general populations of adults. Participants seemed generally youthful. Four of the six studies that reported enough demographic detail had samples with average ages of 25 or younger (median 22). Study samples ranged from 232 to 25,876 participants, the most typical being close to 1,000. However, more than a quarter of the studies had total samples of less than 500 as had all the racial and contact subsamples that were reported. Many were likely underpowered, some grossly so, to detect meaningful and

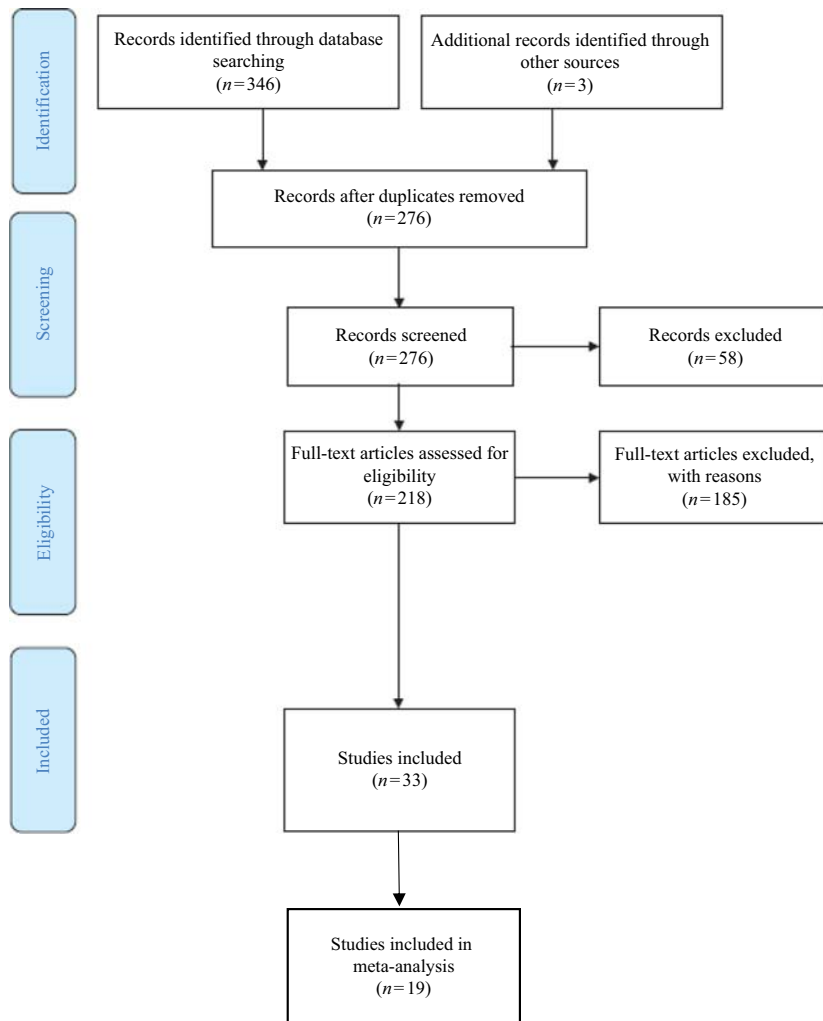


Figure 1.
PRISMA flow
diagram for the
scoping review
process

typical associations (Faul *et al.*, 2007; Fleiss *et al.*, 2003). Nearly three-quarters of the studies were based in one community or city while there was one state-wide and two national studies, both Canadian. Others studied regions or composites of locales. Response rates ranged from 7 to 70 percent (median 45 percent), more than half of the studies not reporting response rates.

The conceptualization of race varied across studies, but tended to be non-specific. More than half merely dichotomized race as racial majority vs minority group members. In eight of the studies, African American and Hispanic people were independently compared to non-Hispanic white people. A few other studies added Asian American and/or “other” categories to this conceptualization. One study conceptualized race as the Aboriginal people and other visible minorities vs white Canadians. As for statistical findings, race significantly predicted attitudes toward police in eight of the ten studies that considered race independently. More than three-quarters of the studies observed the association of race with attitudes toward police adjusted for contact. Two-thirds of those reported a significant

	Number of studies	%
<i>Country</i>		
USA	29	87.9
Canada	4	12.1
<i>Sample size</i>		
< 500	9	27.3
500-999	8	24.2
1,000-4,999	13	39.4
≥5,000	3	9.1
<i>Minority racial group sample size</i>		
< 100	5	15.2
100-199	2	6.1
200-499	5	15.2
≥500	7	21.2
Missing data	14	42.4
<i>Contact with police group sample size^a</i>		
< 100	1	3.0
100-199	2	6.1
200-499	6	18.2
≥500	2	6.1
Missing data	22	66.7
<i>Conceptualization of contact</i>		
No contact/contact	9	27.3
Positive (satisfied)/negative (dissatisfied)	10	30.3
Citizen-initiated/police-initiated	8	24.2
Voluntary/involuntary	6	18.2
<i>Conceptualization of attitudes toward police^b</i>		
General positive vs negative attitude	13	39.4
Satisfaction	12	36.4
Confidence	4	12.1
Trust	2	6.1
Effectiveness	2	6.1
Cynicism	1	3.0

Notes: ^aThe smaller of the two study groups is displayed; ^bsummary percentage is more than 100 percent because one study conceptualized the attitudes toward police in two ways

Table I.
Description of 33 studies included in scoping review

adjusted association. Relatedly, eight of the studies did not account for socio-economic factors, personal or contextual. This is an important interpretive limitation given their demonstrated predictive significance (Brown and Benedict, 2002; Decker, 1981).

Like race, the conceptualization of contact varied. Despite recognition that the type of contact matters in predicting attitudes toward police (Brown and Benedict, 2002; Decker, 1981), more than a quarter of the studies merely defined contact as some vs none. A similarly vague conceptualization (positive vs negative) was used in another third of the studies. More specifically informing conceptualizations of contact, citizen vs police-initiated or voluntary vs involuntary were used in eight and six studies, respectively. Two of the three studies that assessed the effect of contact independently were significant. While two-thirds of the 27 studies that observed race-adjusted contact attitudes toward police associations found those associations to be statistically significant. Although five of the studies suggested an interaction of race and contact, only two tested and observed significant interactions and only one reported the interaction in such a way that it could be depicted.

Finally, all 33 of the studies used non-standardized measures of attitudes toward police, and again, in more than half of the instances these were quite general measures of positive or satisfied vs negative or unsatisfied perceptions of police. Two-thirds of the measures were comprised of five items or less and one-third were very simple, one-item measures that inherently call into question their reliability. All their operational definitions, especially the more specific measures of such constructs as trust and confidence, seemed to have much face validity. However, little seems known about their construct or predictive validities.

Exploratory meta-analysis

Though not commonly included in a scoping review, we thought that an expedited, exploratory meta-analysis might serve as an informed starting point for a future, more rigorous, hypothesis testing meta-analysis as part of a full systematic research review. Four exploratory hypotheses were statistically and practically significant associations of these predictors with attitudes toward police: race, race, adjusted for contact, contact and contact, adjusted for race. Hypothesized directions were such that racial minority group status and less desirable (police-initiated or involuntary) or negative contacts were associated with more negative attitudes (less trust or confidence) toward police. Alternative hypothesized directions were such that racial majority group status and more desirable (citizen-initiated or voluntary) or positive contacts were associated with more positive attitudes (more trust or confidence) toward police. The fifth exploratory hypothesis was a significant race by contact interaction on attitudes toward police.

The d -index was the central meta-analytic statistic (Cohen, 1988). It can be calculated from study group means (M) and standard deviations (SD) ($d = M_1 - M_2 / (SD_1 + SD_2) / 2$) or derived from a host of parametric or nonparametric statistics (Cooper, 2017). In this meta-analysis, it characterizes the size of the attitudes toward police gap between racial minority and majority group members or those who have experienced more negative or positive contacts. The larger the respective gaps, the stronger the race- or contact-attitudes toward police associations. Pooled associations were weighted by their inverse variances so that larger, more precise studies influenced the synthesis more than smaller studies and combined statistical significance was estimated with 95 percent confidence intervals (CIs) (Cooper, 2017). CIs that do not include the null value of 0.00 indicated that the synthetic finding is statistically significant at $p < 0.05$. Cohen's U_3 aided practical significance assessments (1988). U_3 is intuitively appealing because it compares all the participants' scores in one study group with the median or typical participant's score in another. It puts the emphasis on people rather than on statistics. For example, a hypothetically supportive study U_3 of 65 percent if it resulted from a comparison of African American and non-Hispanic white people on a measure of trust in the police would be interpreted as follows: Approximately two-thirds of the African American people scored lower on the trust measure than did the typical non-Hispanic white person. The first author led the meta-analysis. A sample of a third of the d -index calculations were replicated by the second author and the entire weighted meta-analysis was independently cross-validated by both authors. It should be noted that the two largest studies were excluded from this exploration. Our rationales follow. First, to confidently (95 percent confidence) and powerfully (power of 80 percent) detect many of the associations included in this meta-analysis (d s of 0.20 to 0.40) would have required total study samples that ranged from around 150 to 625 participants. Second, to similarly detect the smaller associations that clustered around a d of 0.15 would have required aggregate study samples of around 1,000 (Cohen, 1988; Faul *et al.*, 2007; Fleiss *et al.*, 2003). Third, two of the studies' analytic samples that were very large multiples of this requirement, ranging from close to 15,000 to more than 25,000, were grossly overpowered. Finally, because their

influence would therefore have been overwhelming, unfair and likely invalid, they were excluded. Sensitivity analyses substantiated this decision. A meta-analytic replication that included these two very large studies essentially mirrored a meta-analysis of only those two studies, in a sense making the findings of the other 19 studies moot. Alternatively, a replication that included these two very large studies, but hypothetically weighted them as adequately powered (i.e. aggregate study samples of 1,000), near exactly replicated the meta-analysis that excluded them (pooled *d*s did not differ statistically or practically by more than one-hundredths of a decimal).

In total, 19 studies provided 30 outcomes on three of the meta-analytic hypotheses (Table II). Two of the hypotheses could not be legitimately explored meta-analytically as they only had one study outcome each. In total, 14 of the 33 studies (42 percent) could not be included in the meta-analysis either because their findings were not presented in enough detail to allow the calculation of associations or *d*-indexes or because they did not report subsample sizes necessary for the sample-weighted analysis. These were missing for nearly half of the racial group comparisons and two-thirds of the contact ones (Table I). Such ought to be instructive in the planning of a future, hypothesis testing, meta-analysis. Findings of the exploratory meta-analysis are presented in Table II.

The hypothesized association of race with attitudes toward police remained statistically significant though seemingly small after adjustment for contact. The associated U_3 of 55 percent means, in aggregate, that 55 percent of the racial minority group members had more negative attitudes toward police than did the typical non-Hispanic white person. Given that the “typical” person represents the 50th percentile, this could represent a 5 percent difference in the rate of specific attitudes such as “lacks trust or confidence in police” between racial minority and majority group members. At the population level, a 5 percent rate difference could be quite significant. The adjusted contact association on the other hand was approximately three times larger than that of race. The U_3 of 64 percent could represent a 14 percent relative increase in the rates of positive attitudes toward police among those who have had voluntary vs involuntary, police-initiated contacts. Again, at the population or community level, a rate difference of 14 percent suggests a great preventive potential, affecting perhaps hundreds of thousands to millions of people nationwide. As hypothesized, relative protections and risks were observed to be associated with positive and negative contacts with police, respectively. However, the relative strength of these associations could not be determined for a lack of meta-analytic power due to missing data and the diversity of contact measures used in the primary studies.

Discussion

To our knowledge, this is the first scoping review and exploratory meta-analysis of empirical studies of the association of race with attitudes toward police that also incorporated contacts with the police. It is also novel in the extension of its synthesis beyond the USA to include Canada. It set out to explore complex interactions of race and contacts in predicting attitudes toward the police. Its developmental theory suggested, for example, that the character of contacts with the police and so their potential effects, may differ between racial minority and

Study outcomes	Summary of associations		U_3 (%)
	<i>d</i>	(95% CI)	
Race	8	0.12 (0.06, 0.18)	54.8
Race adjusted for contact	13	0.12 (0.07, 0.17)	54.8
Contact adjusted for race	9	0.35 (0.30, 0.40)	63.7

Notes: CI, confidence interval. All associations were weighted by primary study sample sizes

Table II.
Meta-analysis of race and contact as predictors of attitudes toward police

majority group members. This makes naturalistic sense because of the quite different life experiences and neighborhood environments that, for example, African American and non-Hispanic white people have experienced, on average, in America. Exploratory hypotheses were that negative, involuntary, police-initiated contacts may be even more risky for racial minority group members. Alternative hypothetically, perhaps positive, voluntary, citizen-initiated ones are even more protective for them. Specific knowledge of this sort would be most useful in planning preventive community interventions. Regrettably though, we have essentially no knowledge yet about such specific racial group by specific type of contact interactions. Such is the central knowledge gap that this scoping review exposed. Furthermore, this knowledge gap was as glaring in Canada as the USA.

Further findings and knowledge gaps

Overall, the 33 studies included in this scoping review and the 19 included in this exploratory meta-analysis, consistent with much previous research, primary and synthetic, affirmed in both statistical and practical senses that race matters in the prediction of attitudes toward police. However, this synthesis also found that previous contacts with the police matter much more. In fact, the meta-analytic association of contact with attitudes toward the police was estimated to be about three times larger than the race attitudes toward police association. Such is the central novel knowledge produced by this scoping review. However, because it was generated by an exploratory review, it is probably best thought of as a developed hypothesis that remains to be tested with future synthetic and primary research.

This scope identified several other knowledge gaps that probably ought to be seriously considered in planning future research. First, most typically all the non-white participants were aggregated in analyses. For example, studies in the USA typically aggregated African American, Asian American, Hispanic and all other racial or ethnic minority people of color into one homogeneous group. But much sociological research has told us unequivocally that such diverse people are anything but homogeneous. Similarly, Canadian studies typically aggregated all Indigenous peoples; First Nations, Inuit and Métis people along with all other visible minorities into one minority racial grouping. Clearly, such non-specific analytic strategies have resulted in the profound loss of knowledge. For example, relative to this review's central findings that race matters, but that contact probably matters threefold more; we do not yet have any idea how well this pattern holds or even if it holds for any specific racialized, ethnic or cultural group in Canada or the USA. This matter is made even worse by the fact that in most instances the racial minority subsamples were too small to inspire scientific confidence or their subsample sizes were not reported. Future testing meta-analysts will need to address this prevalent limitation of primary studies. Relatedly, about a quarter of the studies did not incorporate socio-economic factors into their designs in any way. Given the well-known personal (income) and ecological (neighborhood poverty) importance of such factors as well as their intimate relationships with race and ethnicity in North America, future studies, synthetic and primary, ought to incorporate them.

The second major knowledge gap identified by this scope is our lack of generalizable knowledge. Much of the research was accomplished in restricted locales, including small towns and individual cities, each with their own sociocultural context. Some even took place in unique university contexts. Given such knowledge gaps as well as the scholarly, human and political significance of relationships between various racialized minority communities and the police in North America it seems high time for well-funded, national studies in Canada and especially in the USA, where none have yet been accomplished. Such national studies ought to amply oversample and study specific racial and ethnic groups. In this regard, there are lessons to be learned from the UK. The Crime Survey of England and

Wales (formerly the British Crime Survey) has asked questions related to the effect of race/ethnicity and contact on attitudes toward police since the 1980s (Bradford *et al.*, 2009). Contact conceptualizations ought to be similarly specific and attitudinal measures, validated. Building upon this scoping review and exploratory meta-analysis, a full systematic research review with a testing meta-analysis seem naturally needed next steps in the planning of that international research agenda. Thus far, research has effectively advanced our understandings of racial minority vs majority group members' experiences within specific, diverse communities in North America. Our field's research limitations and its resultant knowledge gaps are, in fact, quite understandable given the practicalities of conducting policing research. It seems time though for all of us, researchers and knowledge users, to collaborate in conducting the next generation of research that well represents the experiences of specific racial and ethnic groups across the USA and Canada.

Conclusion

This exploratory review identified the needs for a full systematic research review and a formal meta-analysis to affirm or refute its developed hypotheses and to plan future primary research. Building upon this modestly funded scope, a well-endowed systematic review might consider expanding its sampling frame to all studies of race and/or contact and attitudes toward police published for all years. In addition to perhaps finding more studies of the complex interactions of specific racial or ethnic groups and specific types of contact with the police, it would certainly allow for the construction of a much more powerful meta-analytic database, including many more studies of each relationship: race- or contact with attitudes toward the police. Network meta-analysis might then allow for the testing of unique meta-regression-based interactions (Hoaglin *et al.*, 2011). Future systematic reviewers might also consider especially expanding their unpublished research sampling frames, for example, searching relevant professional and scientific conferences for the findings not only of researchers, but of knowledge users such as police administrators and municipal decision makers as well. It also seems strongly recommended that future synthetic analysts incorporate a survey of all identified authors, researchers, and knowledge users. Perhaps with e-mail and telephone components, such a survey could bolster both the internal and external validity of the review process. It could collect any critical data that was missing from primary study reports and it could essentially search "file drawers," that is, identify any unpublished studies or reports that the respondents were aware of.

This scoping review is the first in a four-step process, including the above suggested systematic review and hypothesis testing meta-analysis, culminating with two national probability studies. The ultimate objective is confident knowledge about factors that would support (or impede) trusted relationships between police and people in the communities they aim to serve. Large multinational studies that are truly representative of Canada and the USA' diversity will undoubtedly be quite expensive. But given the likely important knowledge dividends such a commitment seems timely.

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Further reading

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Appendix

A state-of-the-art review

Search terms	Databases (no. of hits)	Results and description
Attitude* AND toward* AND law enforce* OR police	(1) Social service abstracts (43) (2) Social work abstracts (7) (3) Sociological abstracts (320)	29 articles saved
su(attitude*) AND toward* AND su(("law enforcement" OR "law enforcer" OR police)) AND Attitude AND police	(4) ProQuest: 41 available databases (1,038) (5) Campbell Collaboration (2) (6) PsycINFO (1,550) (7) Google Scholar (2,110)	157 articles saved
"attitudes toward police" police OR "law enforcer" OR "law enforcement" AND attitude* AND toward* AND "north America" OR Canada OR "united states" AND contact* AND race OR ethnicity	(8) JSTOR (5,239)	142 articles saved 18 articles saved

Table AI.
Computerized
research literature
databases searched
until May 1, 2017

Table AII.
Detailed description of
33 studies included in
the scoping review

Citation	Conceptualization			Operational definition			
	Sampling frame	Response rate	Race	Type of contact	Attitudes toward police (ATP)	Key findings ^b prediction of ATP	Limitations
Avdija (2010)	304 Ages 18-54 University students USA	NR	White vs non-white	Citizen-initiated vs police- initiated	General positive vs negative attitude (trust, satisfaction, confidence, fear) Non-standard 30 items, continuous Score range = 30-150	Race, contact adjusted significant Contact, race adjusted significant	All non-white groups aggregated Probably underpowered Limited external validity Untested ATP measure
Bridenball and Jesilow (2008)	535 Age 18 or older Santa Ana, CA	40.0-50.0%	White vs non-white	No contact vs contact	General positive vs negative attitude Non-standard, discrete Open-ended questions Frequency of complaints and praises	Race, contact adjusted null Contact, race adjusted significant	All non-white groups aggregated Selection bias probable Limited external validity Untested ATP measure Associations not calculable
Cao (2014) ^a	14,033 Age 15 or older Canada, national	NR	White vs Aboriginal people or visible minorities	Crime witness, Crime victim, Traffic violation, Arrested	Confidence Non-standard 6 items, continuous Score range = 6-18	Race, contact adjusted significant Contact, race adjusted significant	All non-white groups aggregated Untested ATP measure
Cheng (2015)	400 Age 18 or older Saskatoon, SK	NR	Non-Aboriginal vs Aboriginal	Voluntary vs involuntary	Satisfaction Non-standard 1 item, continuous Score range = 1-4	Race, contact adjusted significant Contact, race adjusted significant	Probably underpowered Limited external validity Untested ATP measure Associations not calculable
Chow (2012)	321 Mean age 21 Regina, SK	NR	White vs non-white	Satisfaction with recent contact, Police harassment or mistreatment	Satisfaction Non-standard 1 item, continuous Score range = 1-5	Race, contact adjusted null Contact, race adjusted significant	All non-white groups aggregated Probably underpowered Limited external validity Untested ATP measure

(continued)

Citation	Conceptualization			Type of contact	Attitudes toward police (ATP)	Operational definition	
	Sampling frame	Response rate	Race			Key findings ^b	Limitations
Cosaro <i>et al.</i> (2015)	479 Age 18 or older Cincinnati, OH	53.3%	White vs non-white	No contact vs contact	Cynicism of police performance Non-standard 3 items, continuous	Race significant Race, contact adjusted significant Contact, race adjusted significant	All non-white groups aggregated Probably underpowered Limited external validity
Dai and Johnson (2008)	614 Age 18 or older Cincinnati, OH	53.3%	African American vs others	Satisfaction with most recent contact	Satisfaction Non-standard 3 items, continuous Score range = 3-12	Race, contact adjusted significant Contact, race adjusted significant	Untested ATP measure Limited external validity
De Angelis and Wolf (2016)	3,725 Age 18 or older Western USA	28.0%	White vs Latino or Black or others	No contact vs contact with municipal employee including police	Satisfaction Non-standard 1 item, continuous Score range = 1-4	Race, contact adjusted null Contact, race adjusted null	Selection bias probable Untested ATP measure Associations not calculable
Dowler and Sparks (2008)	14,000 – Chicago, IL, Kansas City, MO, Knoxville, TN, Los Angeles, CA, Madison, WI, New York, NY, San Diego, CA, Savannah, GA, Springfield, MA, Tucson, AZ, and Washington, DC	NR	White vs African American or Hispanic or others	No contact vs contact	Satisfaction Non-standard 1 item, continuous Score range = 1-4	Race by contact significant	Untested ATP measure Associations not calculable

(continued)

A state-of-the-art review

Table AII.

Citation	Conceptualization			Operational definition			
	Sampling frame	Response rate	Race	Type of contact	Attitudes toward police (ATP)	Key findings ^b prediction of ATP	Limitations
Frank <i>et al.</i> (2005)	613 Age 18 or older Cincinnati, OH	53.3%	White vs African American	Satisfaction with most recent contact	Satisfaction Non-standard 1 item, continuous Score range = 1-4	Race significant	Limited external validity Untested ATP measure Associations not calculable
Garcia and Cao (2005)	232 – Northeastern city USA	NR	White vs African American or Hispanic	Victimization, Crime suspect, Has a police friend	Satisfaction Non-standard 1-item, continuous Score range = 1-4	Race, contact adjusted significant Contact, race adjusted null	Probably underpowered Limited external validity Untested ATP measure
He <i>et al.</i> (2017)	1,437 Age 18 or older Houston, TX	18.5%	White vs African American or Hispanic or Asian and others	Voluntary vs involuntary	Effectiveness Non-standard 10-items, continuous Score range = 5-50	Race, contact adjusted significant Contact, race adjusted null	Selection bias probable Limited external validity Untested ATP measure
Huebner <i>et al.</i> (2004)	1,166 Age 18 or older Midwestern community, USA	NR	White vs African American	Voluntary (satisfied vs dissatisfied) vs involuntary (satisfied vs dissatisfied)	Global satisfaction Non-standard 1 item, continuous Score range = 1-4	Race by contact significant	Limited external validity Untested ATP measure
Lai (2011)	1,314 All ages Houston, TX	37.0%	White vs African American or Hispanic	Citizen-initiated vs police- initiated	General positive vs negative attitude Non-standard 4 items, continuous Score range = 4-20	Race, contact adjusted significant Contact, race adjusted significant	Selection bias probable Limited external validity Untested ATP measure Associations not calculable

(continued)

Citation	Conceptualization			Operational definition		Limitations
	Sampling frame	Response rate	Race	Type of contact	Key findings ^b prediction of ATP	
Lai and Zhao (2010)	756 All ages Houston, TX	NR	White vs African American or Hispanic or others	No contact vs contact	General positive vs negative attitude, Trust Non-standard 4-items, 3 items, continuous Score ranges = 4-16, 3-15	Limited external validity Untested ATP measure
Lee and Gibbs (2015)	532 Mean age 21 University students Northeastern USA	35.0%	White vs non-white	Positive contact vs negative contact	Confidence Non-standard 3 items, continuous Score range = 3-15	All non-white groups aggregated Selection bias probable Socio-economic factors unaccounted for Limited external validity
Li <i>et al.</i> (2016)	1,197 Age 18 or older Houston, TX	27.0%	White vs African American or Hispanic	Citizen-initiated (positive vs negative) vs police-initiated (positive vs negative)	Effectiveness Non-standard 10 items, continuous Score range = 10-50	Untested ATP measure Selection bias probable Socio-economic factors unaccounted for Limited external validity
Luo <i>et al.</i> (2017)	2,393 All ages Houston, TX	NR	White vs African American or Hispanic	Voluntary vs involuntary	General positive vs negative attitude Non-standard 5 items, continuous Score range = 5-25	Untested ATP measure Socio-economic factors unaccounted for Limited external validity Untested ATP measure

(continued)

Table AII.

Citation	Conceptualization			Type of contact	Attitudes toward police (ATP)	Operational definition Key findings ^b prediction of ATP	Limitations
	Sampling frame	Response rate	Race				
Mbuba (2010)	333 Mean age 20 University students Midwestern USA	NR	White vs non-white	Prior negative encounter with police	General positive vs negative attitude Non-standard 14 items, continuous Score range = 14-70	Race significant Contact significant	All non-white groups aggregated Probably underpowered Socio-economic factors unaccounted for Limited external validity Untested ATP measure
McLean (2012)	1,187 Mean age 25 University students University of Montana	7.4%	White vs non-white	Citizen-initiated vs police- initiated	General positive vs negative attitude (satisfaction and effectiveness) Non-standard 14-items, continuous Score range = 14-70	Race significant Race, contact adjusted significant Contact, race adjusted significant	All non-white groups aggregated Selection bias probable Limited external validity Untested ATP measure Associations not calculable
Nix <i>et al.</i> (2014)	1,681 Mean age 58 Southeastern USA	45.7%	White vs non-white	No contact vs contact	Trust Non-standard 1-item, continuous Score range = 1-4	Race, contact adjusted null Contact, race adjusted null	All non-white groups aggregated Selection bias probable Socio-economic factors unaccounted for Untested ATP measure
Nofziger and Williams (2005)	301 Age 18 or older General population & university students Small Midwestern town, USA	NR	African American vs others	Positive contact vs negative contact	Confidence Non-standard 4-items, continuous Score range = 4-16	Race, contact adjusted null Contact, race adjusted null	Probably underpowered Socio-economic factors unaccounted for Limited external validity Untested ATP measure

(continued)

Citation	Conceptualization			Type of contact	Attitudes toward police (ATP)	Operational definition	
	Sampling frame	Response rate	Race			Key findings ^b	Limitations
O'Connor (2008) ^a	25,876 Age 15 or older Canada, national	NR	White vs non-white	No contact vs contact	General positive vs negative attitude Non-standard 5-items, continuous Score range = 5-15	Race, contact adjusted significant Contact, race adjusted null	All non-white groups aggregated Untested ATP measure
Ren <i>et al.</i> (2005)	838 Mean age 53 Northwestern city, USA	45.0%	White vs non-white	Volunteer, Reported a crime, Information/ Service, Received a traffic ticket	Confidence Non-standard 7-items, continuous Score range = 7-35	Race null Race, contact adjusted null Contact, race adjusted significant	All non-white groups aggregated Selection bias probable Limited external validity Untested ATP measure
Rosenbaum <i>et al.</i> (2005)	2,500 Age 18 or older Chicago, IL	47.0%	White vs African American or Hispanic	No contact vs contact	General positive vs negative attitude Non-standard 3 items, continuous Score range = NR	Race, contact adjusted null Contact significant	Selection bias probable Limited external validity Untested ATP measure Associations not calculable
Schafer <i>et al.</i> (2003)	1,269 Age 18 or older Midwest community, USA	NR	White vs non-white	Voluntary vs involuntary	Satisfaction with global police services Non-standard 1-item, continuous Score range = 1-4	Race significant Race, contact adjusted significant Contact, race adjusted significant	All non-white groups aggregated Limited external validity Untested ATP measure
Schuck and Rosenbaum (2005)	344 – Chicago, IL	NR	White vs African American or Hispanic	Negative contact	General positive vs negative attitude Non-standard 4-items, continuous Score range = 4-16	Race significant Contact, race adjusted null	Probably underpowered Socio-economic factors unaccounted for Limited external validity Untested ATP measure

(continued)

Table AII.

Citation	Conceptualization			Operational definition			
	Sampling frame	Response rate	Race	Type of contact	Attitudes toward police (ATP)	Key findings ^b prediction of ATP	Limitations
Schuck <i>et al.</i> (2008)	479 Age 18 or older Chicago, IL	NR	White vs African American or Hispanic	Negative police-initiated vs negative citizen-initiated	General positive vs negative attitude (neighborhood, global, police services, fear of police) Non-standard	Race, contact adjusted significant Contact, race adjusted significant	Probably underpowered Limited external validity Untested ATP measure Associations not calculable
Shelley <i>et al.</i> (2013)	846 Age 18 or older Colorado, USA	NR	White vs non-white	Reported contact, Involuntary contact, Citation/Arrest, Warning, Accident	Satisfaction Non-standard 1-item, discrete Score range = yes or no	Race null Race, contact adjusted null Contact, race adjusted null	All non-white groups aggregated Limited external validity Untested ATP measure
Skogan (2006)	3,005 Age 18 or older Chicago, IL	35.0%	White vs African American or Latino	Citizen-initiated (positive vs negative) vs police-initiated (positive vs negative)	Confidence Non-standard 6 items, continuous Score range = 6-24	Race significant Race, contact adjusted significant Contact, race adjusted significant	Selection bias probable Limited external validity Untested ATP measure Associations not calculable
Smith (2005)	800 Age 18 or older Washington, DC	NR	White vs African American	No contact vs contact	Satisfaction Non-standard 1-item, continuous Score range = 1-4	Race, contact adjusted significant Contact, race adjusted significant	Socio-economic factors unaccounted for Limited external validity Untested ATP measure Associations not calculable
Vogel (2011)	1,219 Age 18 or older Southern CA	70.4%	White vs Hispanic or Asian or African American	Citizen-initiated vs police- initiated	Perceptions of police Non-standard 6 -items, continuous Score range = 6-30	Race, contact adjusted significant Contact, race adjusted significant	Untested ATP measure Associations not calculable

(continued)

Citation	Conceptualization			Operational definition			
	Sampling frame	Response rate	Race	Type of contact	Attitudes toward police (ATP)	Key findings ^b prediction of ATP	Limitations
Wu <i>et al.</i> (2009)	1,963 Age 18 or older Louisville and Lexington, KY	NR	White vs African American	Police harassment	Satisfaction Non-standard 1 item, discrete Score range = satisfaction or dissatisfaction	Race, contact adjusted significant Contact, race adjusted significant	Limited external validity Untested ATP measure Associations not calculable

Notes: NR, = not reported. ^aExcluded from meta-analyses due to overwhelming statistical power; ^ball significant findings were in the hypothesized direction. Significance refers to statistical significance, minimally $p < 0.05$