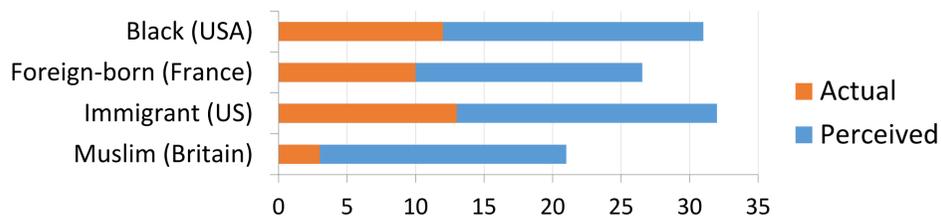


# Perceiving Lots of “Them” and Being Threatened by that Number: The Role of Numerical Ability and Right-Wing Adherence

## INTRODUCTION

- Surveys show gross overestimation of minority population sizes, but its predictors and consequences are largely unknown

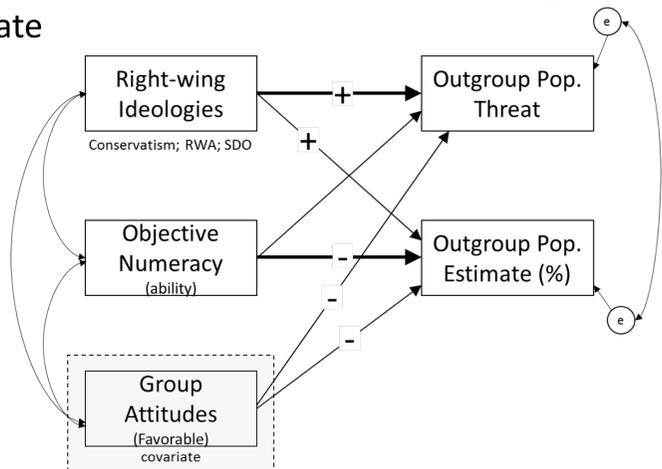
### Past surveys show:



- Worse objective numeracy (i.e. lower math ability) predicts more inaccurate estimates of the number of, and ratios between, dots shown on a screen (Chesney et al., 2015)
- Right-wing ideologies (conservatism, Right-Wing Authoritarianism [RWA], Social Dominance Orientation [SDO]) are associated with feeling threatened by outgroups, especially ethnic minorities among Whites and immigrants among native-borns (e.g. Hodson & Esses, 2005; Jost et al., 2007)

### Current Study Hypotheses

- H1: Those with worse numeracy will give larger minority group size estimates
- H2: Greater right-wing adherence will predict greater threat reactions to perceived outgroup size
- We also explored whether greater right-wing adherence predicts larger estimates and whether numeracy predicts threat (cross-over paths in hypothesized model)
- Because of past relations between group attitudes, right-wing adherence, and threat, and because group dislike might predict larger group size estimates, we included outgroup attitudes as a covariate



## METHOD

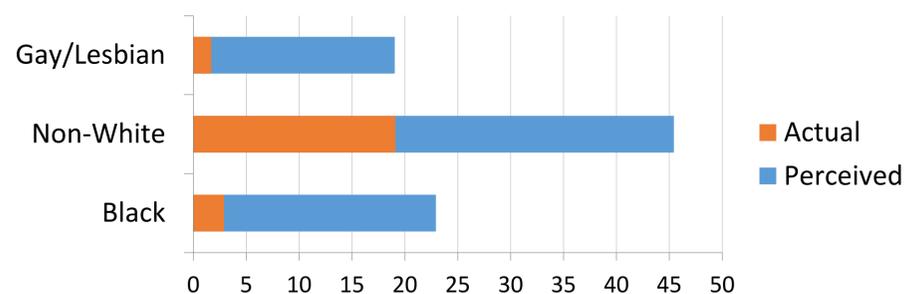
- Participants.** 187 Canadian undergraduates (154 women, 32 men, 1 unknown,  $M_{age} = 20.23$ , 67.9% White)
- Procedure.** Participants responded to measures in private computer booths

### Measures

- Conservatism** ([Skitka et al., 2002]  $\alpha = .89$ , ↑ scores = ↑ conservatism)
- RWA** ([Altemeyer, 1996]  $\alpha = .88$ , ↑ scores = ↑ RWA)
- SDO** ([Pratto et al., 1994]  $\alpha = .88$ , ↑ scores = ↑ SDO)
- Objective Numeracy** ([Lipkus et al., 2001]  $\alpha = .52$ , ↑ scores = ↑ ability)
- Size estimates** of the non-White, Black, and gay/lesbian populations given as % of the total Canadian population
- Threat reactions** to size estimates (↑ scores = ↑ threat)
- Attitude thermometer** for each target group (↑ scores = ↑ favourable attitudes)

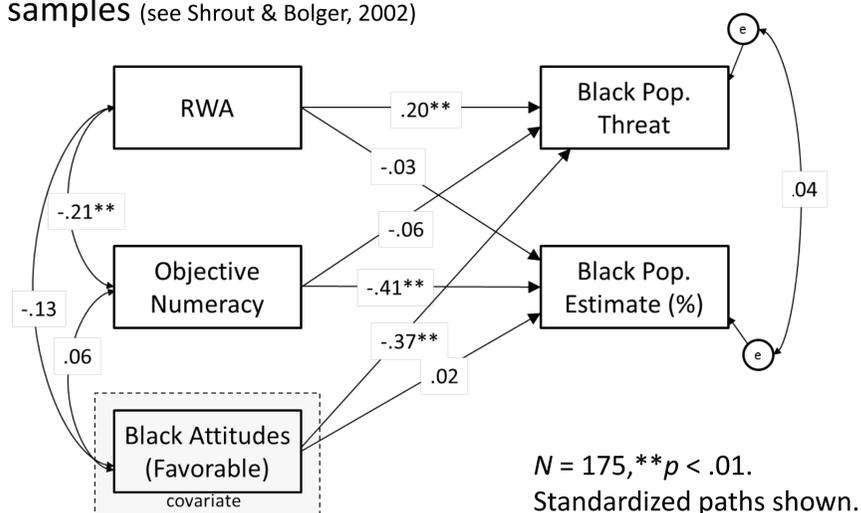
## RESULTS

- Participants grossly overestimated outgroup size



### Model Tests

- AMOS v.22 (Arbuckle, 2006)
- Hypothesized model was tested for each outgroup and each measure of right-wing adherence separately
- All models were fully saturated; predictors and residuals of the criteria were allowed to co-vary
- Across analyses, correlations between residuals ranged from -.10 to .15 ( $ps > .107$ )
- Bias-corrected estimates were derived from 1000 bootstrap samples (see Shrout & Bolger, 2002)



- Less favourable attitudes (covariate) predicted more threat from perceived population size for all groups
- Worse numeracy predicted larger estimates of the Black and non-White populations (H1)
- RWA and SDO were consistently positively associated with threat reactions to outgroup size estimates; higher conservatism predicted greater threat reactions to non-White and Black population size estimates (H2)
- Numeracy did not predict threat in any model
- Right-wing adherence did not predict estimates in any model (except for conservatism in the gay/lesbian model)

## DISCUSSION

- Educators can emphasize mathematical skills, particularly understanding ratios and probability
- Media can de-emphasize minority group size and growth, status quo, and hierarchy in intergroup relations to attenuate threat
- Future directions**
  - Contextual pressures that impact population size estimates
  - Relevance for conservative-leaning targets (e.g. military)
  - Moderators of the relation between population estimates and threat reactions