Gratitude:

A study of gratitude's short-term impact on intentions and perceptions

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AGENDA

- Literature Review & Motivation
- Research Design
- Findings
- Potential Next Steps
- Q & A

Literature Review + Motivation

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Prior Literature Review

- The systematic study of gratitude within psychology only began around the year 2000
- A handful of those have shown that gratitude has a measurable impact on an individual's level of happiness and other indicators of wellbeing.
- However, most of these studies have applied their treatment (mostly nightly journaling) and measured their outcomes over a prolonged period (one week to nine months).

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Experiment: ‘Gratitude’

to test whether engaging in a non-trivial gratitude exercise has a short-term impact on people’s intentions and their perceptions of the world around them

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Research Design

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Tools

Survey: Qualtrics survey administered through Amazon Mechanical Turk

Analysis: R

Visualisation: Tableau

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Treatment

Split 150 respondents into 3 groups (~50 each): two experimental, one control.

- **Gratitude treatment:** *Think of a person who has had a significant positive impact in your life. It could be a relative, mentor, parent, friend, etc. In the space below, write them a thank you note (45 words or more) in which you express appreciation for the specific role they played in your life and explain how it has impacted you.*
- **Anti-Gratitude treatment:** *Describe something in your life that you find most frustrating at the moment. Please use at least 45 words.*
- **Control:** *In 45 words or more, describe this picture.*

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Outcome measures

Outcome variables were the responses to 12 questions.

- Answered on a 7-point Likert scale (strongly disagree to strongly agree)
- Worded such that for half, *strongly agree* is the "generous" answer.
- Broken into two batteries:
  - **Intentions**:
    - **Assistance**: If someone in the parking lot needed assistance that I was able to provide, I would help them.
    - **Conversation:** I would not be interested in engaging in a conversation with someone who has different opinions/beliefs than me.
    - **Mentor:** If given the opportunity, I would like to be involved in mentoring youth in my community.
    - **Forgive**: I would not be willing to forgive someone if they have shown no remorse.
    - **Respect**: I would like to make it a goal to treat people with greater care and respect.
    - **Give:** If I were given an additional $5 dollars right now and given the opportunity to donate it to a reliable charity or keep it for myself, I would keep it
  - **Beliefs:**
    - **Community:** I believe people in my community have generally good intentions.
    - **Country:** I believe people in my country have generally good intentions.
    - **Race intelligence:** People of other races are less likely to be intelligent than people of my race.
    - **Gender intelligence:** People of the opposite gender are less likely to be intelligent than people of my gender.
    - **Choices:** In general, I believe people who are worse off than me are so because of personal choices they've made.
    - **Race intentions:**People of other races are just as likely to have good intentions as people of my race.

Randomization and balance

Question	p-value
Gender	0.8512
Political Affiliation	0.1186
Race	0.3739
Religious Attendance	0.7144
Donate in Natural Disaster	0.3004
Donate Yearly to charity	0.1384

- The chosen format of qualtrics and mechanical turk did not allow for us to specify the randomization since turkers are recruited on the fly.
- Administered pretreatment questions including: gender, race, year of birth, religious attendance, political ideology, whether somebody would donate after a natural disaster, and if they donate to a charitable cause once a year.
- Used a 2 sided Asymptotic General Independence Test. A failure to reject the sharp null hypothesis of no difference between groups implies balanced randomization between treatment groups.

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Findings

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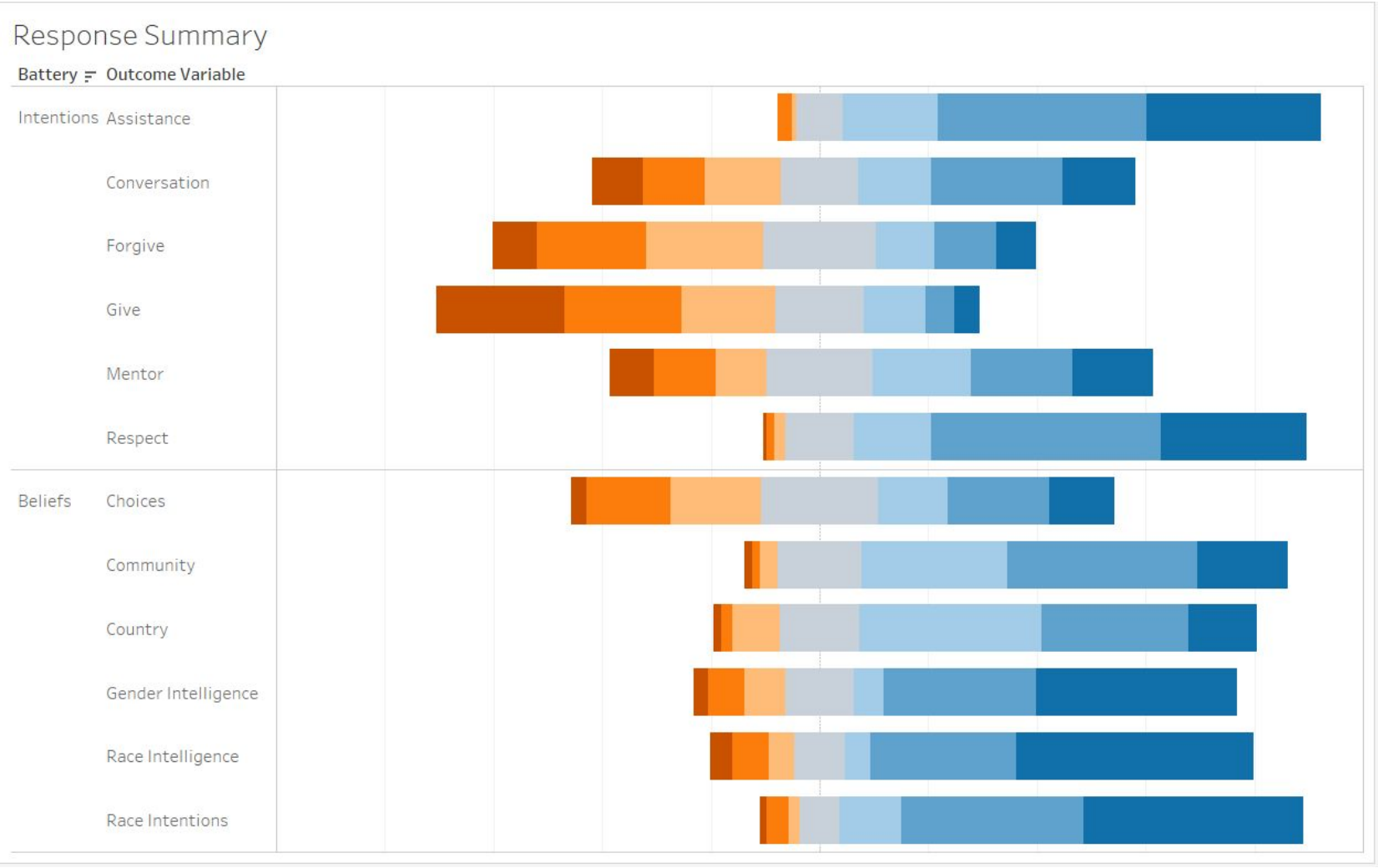
Findings: All responses



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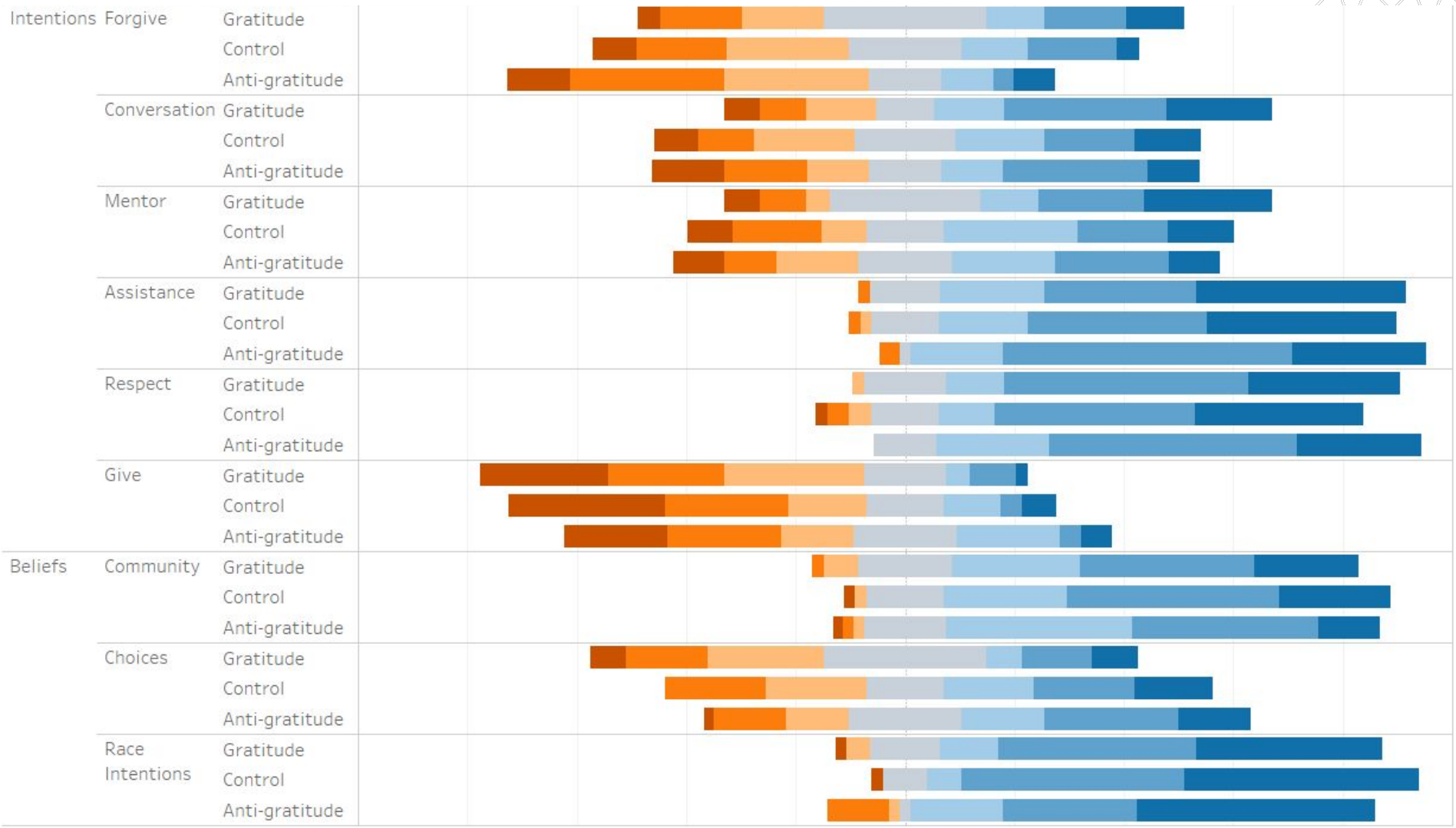
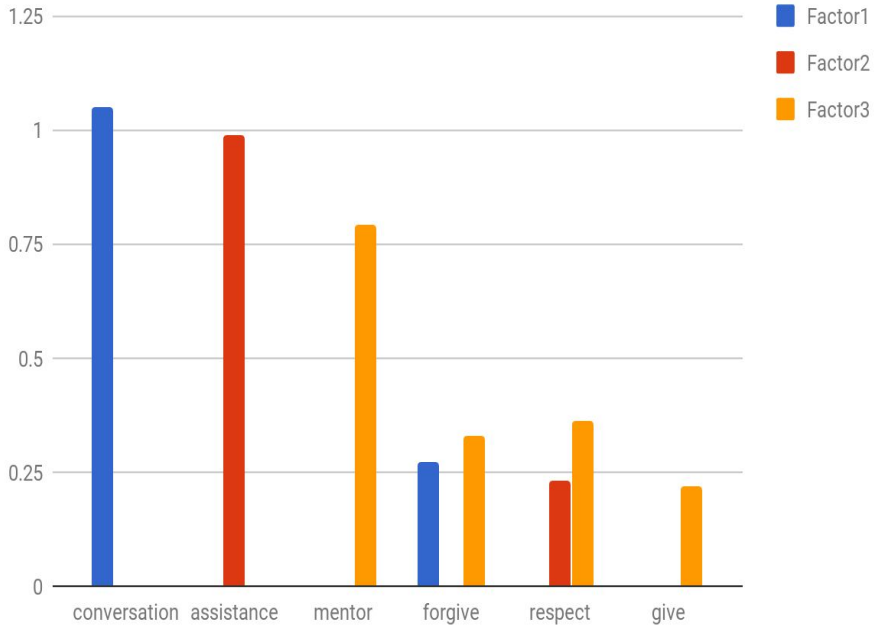
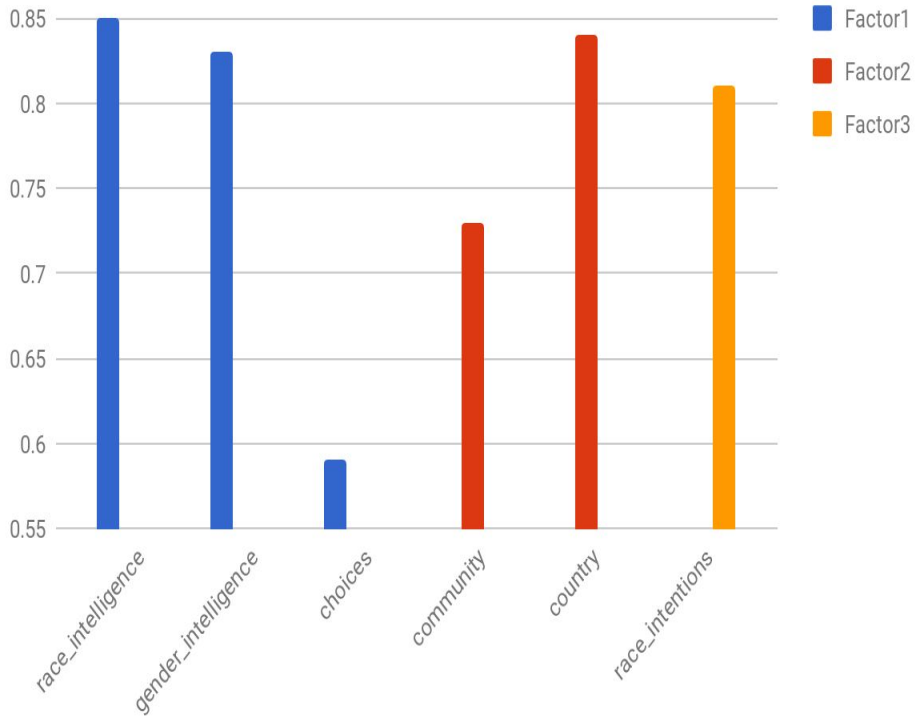
Findings: Statistically Significant Treatment Effects



Factor Analysis: Loadings





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Findings: Factor Analysis

	Gratitude Vs. Anti-Gratitude	Gratitude Vs. Control
Openness	Yes**	Yes*
Treat Well	No	No
Give Back	No	No
In Group Superiority	No	No
Good Intentions	No	No
Race Intentions	No	No
	*=0.1, **=0.05, ***=0.001	

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Subpopulation Analysis

- Because there was balance across demographic variables, we were able to do analysis on subpopulations.
- The next several slides highlight some of the most interesting differences found in these analyses.
  - There were notable differences both in how the subpopulations answered in general (e.g. women more likely to answer generously on the "Gender Intelligence" measure) and in subpopulations' sensitivity to treatment and control.
  - Because the latter is more aligned with the purposes of our experiment, we will focus there.

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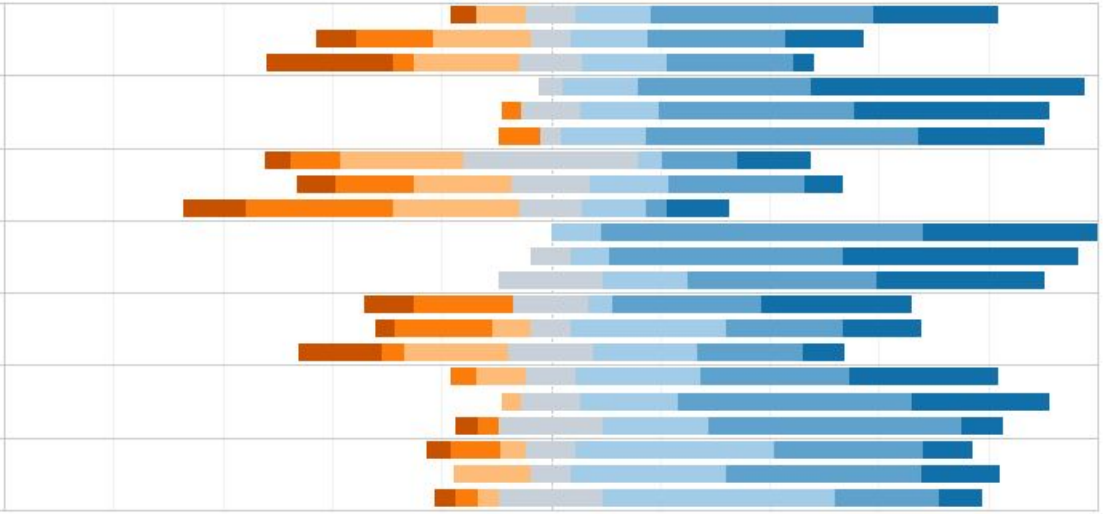
Subpopulation Analysis: Gender

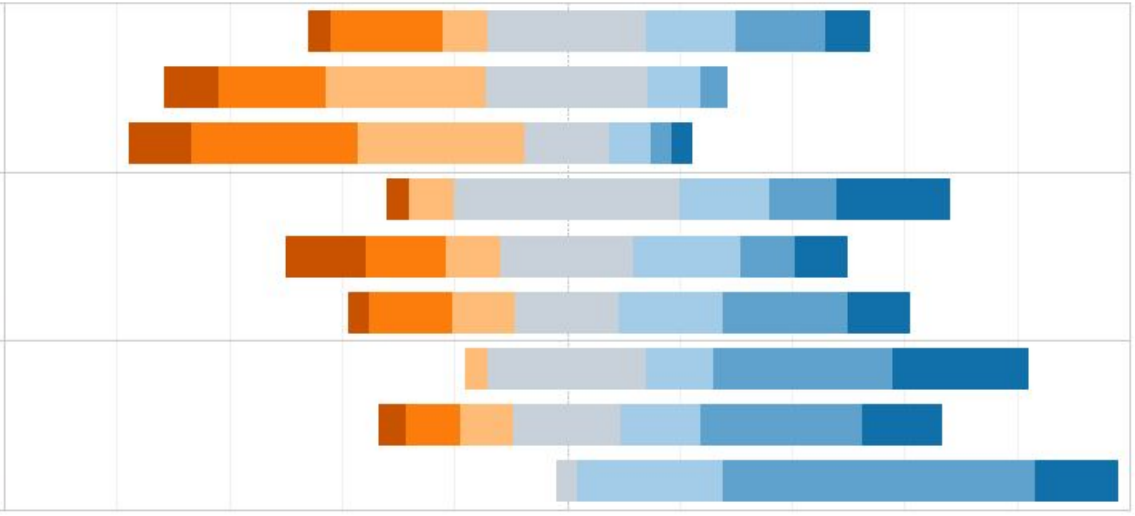
Women

Battery	Outcome Va..	Treatment C..
Intentions	Conversation	Gratitude
		Control
		Anti-gratitude
	Assistance	Gratitude
		Control
		Anti-gratitude
	Forgive	Gratitude
		Control
		Anti-gratitude
	Respect	Gratitude
		Control
		Anti-gratitude
	Mentor	Gratitude
		Control
		Anti-gratitude
Beliefs	Community	Gratitude
		Control
		Anti-gratitude
	Country	Gratitude
		Control
		Anti-gratitude



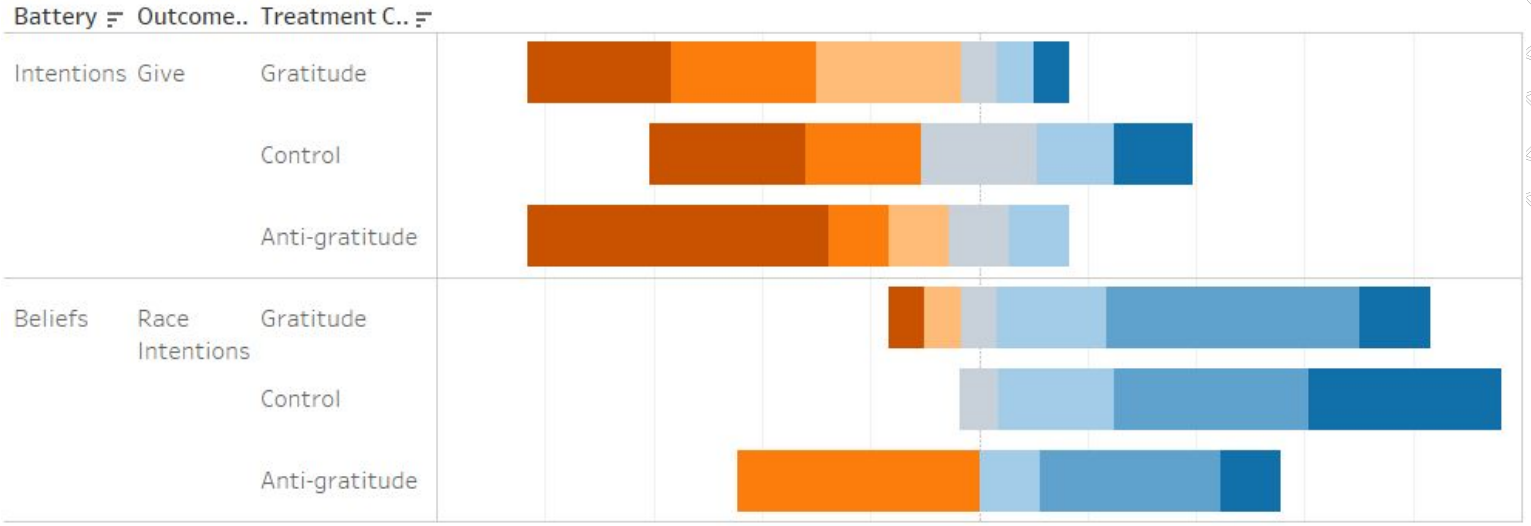
Men

Battery	Outcome..	Treatment C..
Intentions	Forgive	Gratitude
		Control
		Anti-gratitude
	Mentor	Gratitude
		Control
		Anti-gratitude
	Respect	Gratitude
		Control
		Anti-gratitude

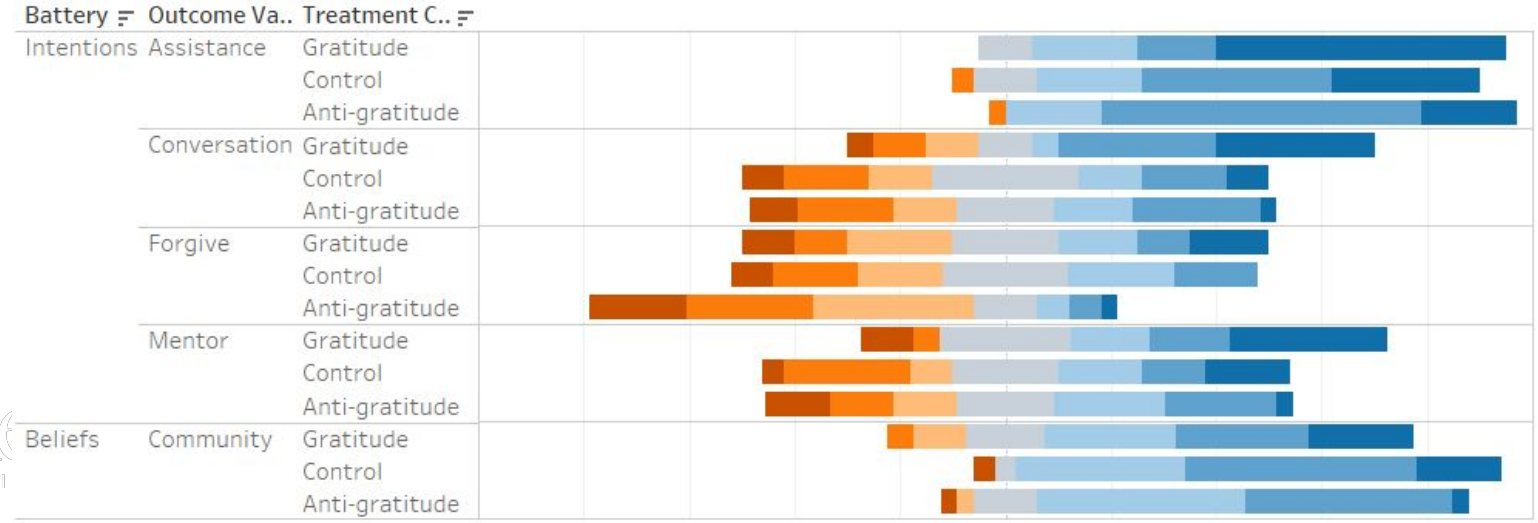


Subpopulation Analysis: Politics

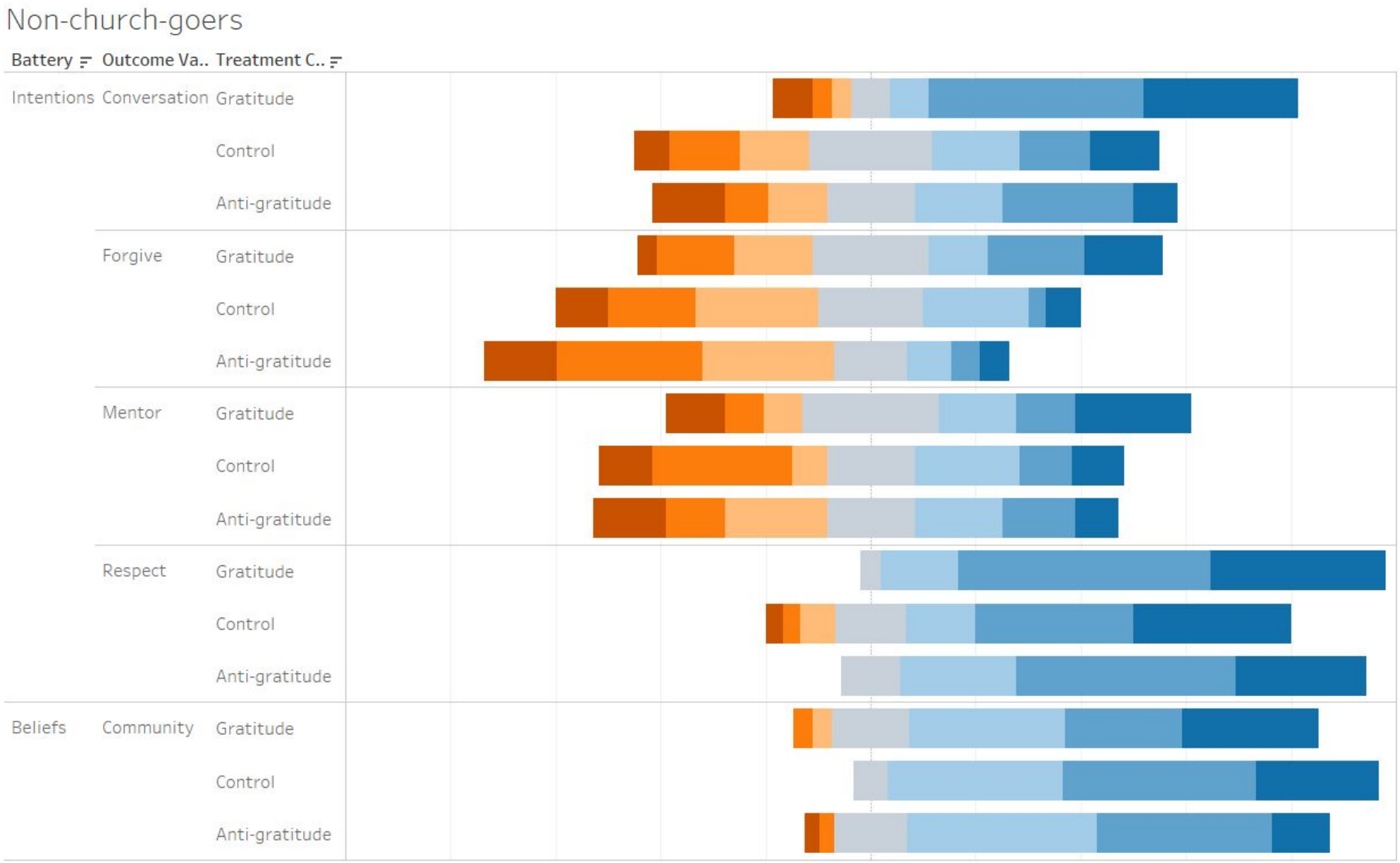
Conservatives



Progressives



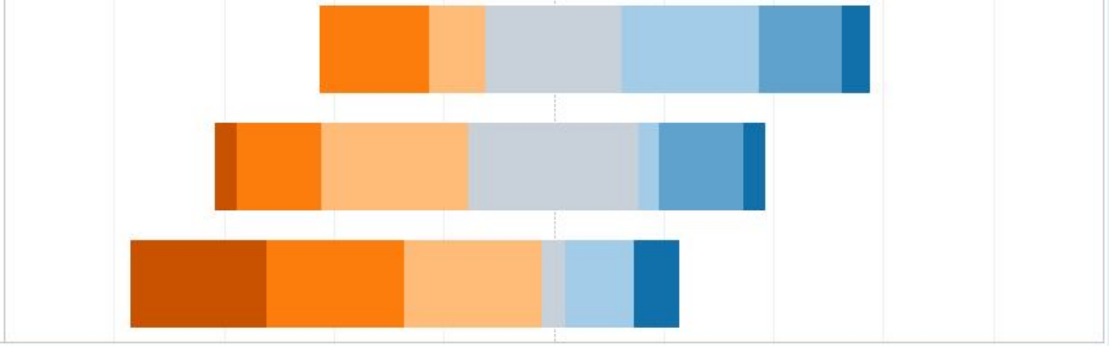
Subpopulation Analysis: Religion



Subpopulation Analysis: Age

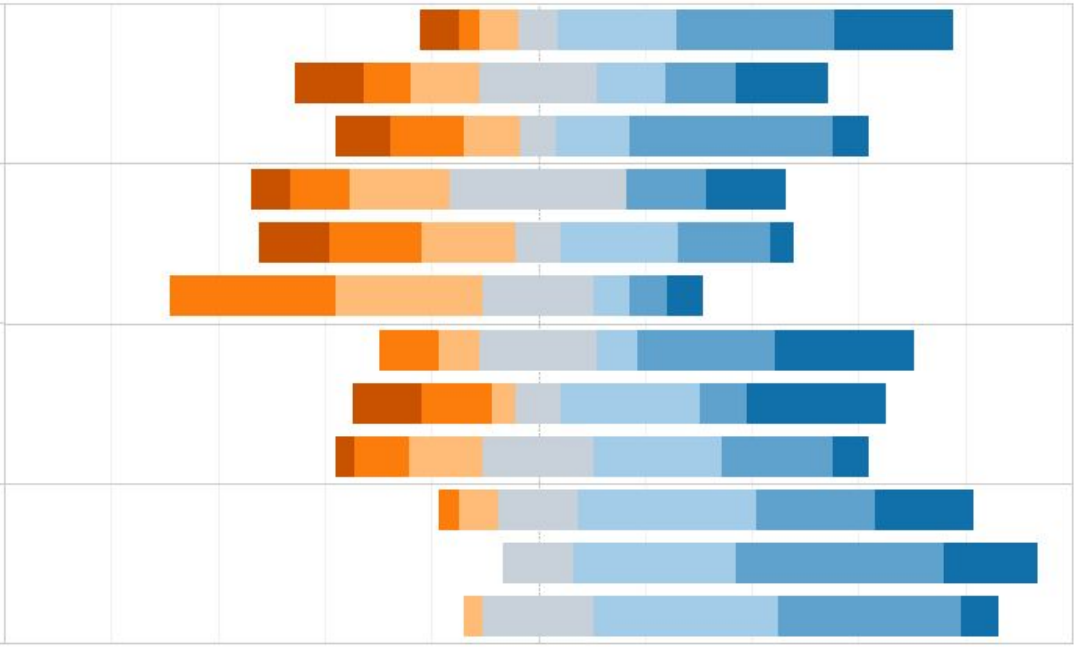
30 and under

Battery	Outcome..	Treatment C..
Intentions	Forgive	Gratitude
		Control
		Anti-gratitude



31 and up

Battery	Outcome Va..	Treatment C..
Intentions	Conversation	Gratitude
		Control
		Anti-gratitude
	Forgive	Gratitude
		Control
		Anti-gratitude
	Mentor	Gratitude
		Control
		Anti-gratitude
Beliefs	Community	Gratitude
		Control
		Anti-gratitude



Findings: Summary

- Findings of statistical significance exceeded what we would expect from random chance:
  - Of well-powered comparisons, 14% were significant at p = 0.1
  - 6.5% were significant at 0.05
  - 30%–40% more significant findings than we would expect by random chance
- Findings of practical significance were smaller: 10% of the above had a meaningful effect size.

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Potential Next Steps

- Tweak the experiment:
  - Use a "lab"-type environment, to promote authentic and focused responses to treatment
  - Refine/expand questions:
    - Expand questions on topics that were most statistically significant (forgive, assistance, mentor, conversation)
    - Refine questions where question structure may not have enabled a treatment effect to be measured
      - Test generosity by giving the subjects money and telling them they can decide how much to keep vs. give to charity
- Block on pre-treatment variables found to be impactful
- Seek a larger sample size to increase power

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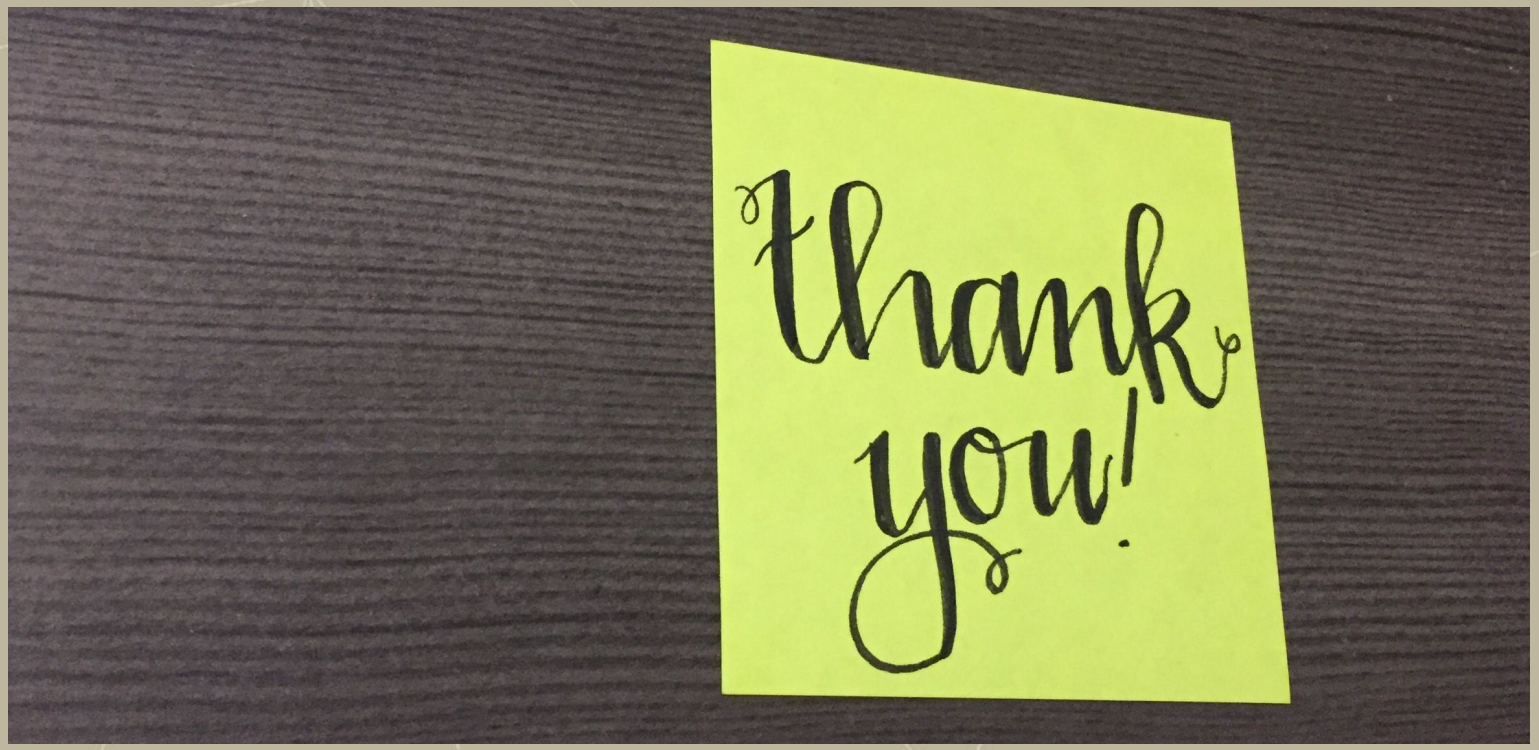

Questions?

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