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The Multi-Group Experiment

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Psychology Education Title:
The Multi-Group Experiment

Overview: A multi-group design is an experimental design that had 3 or more conditions/group of the same independent variable. This video demonstrates a multi-group experiment that examines how different interethnic ideology (multiculturalism and color-blind) influence feelings about diversity and actions toward and out-group member. In providing an overview of how a researcher conducts a multi-group experiment, this video shows viewers how to distinguish levels in variables, common types of conditions/groups to use (including placebo and empty-control conditions/groups), the process of conducting the study, the collection of results, and the consideration their implications.

Procedure:

1. Introduction of Topic/Research Question

- 1.1. Research Question: People are unique and different, but yet mostly the same. When it comes to interacting with other ethnicities, which perspective is better? We could focus on and appreciate our differences (a multicultural perspective), or focus on the many similarities we share (a color blind perspective). If one is more effective, does it have to be explicit (i.e., does the person need to realize it)? The researcher then forms a hypothesis based on educated guesses about potential answers.
- 1.2. Research Hypothesis: Those who are exposed to the multicultural perspective will display more favorable attitudes toward an outgroup member than those who are exposed to the colorblind perspective.

2. Key Variables

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- 2.1. Variable- Anything that changes in a study.
- 2.2. Independent Variable – The cause or what the researcher manipulates/changes in order to detect changes in the participant

2.2.1. Based on the hypothesis, interethnic ideology is the independent variable

2.3. Dependent Variable – The effect or the outcome that the researcher measures in the participant.

2.3.1. Based on the hypothesis, attitudes toward an outgroup member is the dependent variable

3. Defining the Variables

3.1. Interethnic Ideology – To manipulate the independent variable of interethnic ideology the researcher will have participants perform a word search (word search so that participant's will not explicitly know they are being exposed to the different ideologies).

3.2. Attitudes toward an Outgroup Member – To measure the dependent variable of perceived attractiveness the researcher will have the participant choose a seat (near or far from the outgroup member).

4. Establishing Conditions

4.1. Levels – the independent variable's number of conditions or groups

4.1.1. In simple experiment there are two levels (experimental group and control group)

4.1.2. In a multi-group experiment there are more than two levels

4.2. Potential Conditions/Groups

4.2.1.1. Two or more types of treatment (such as this study)

4.2.1.2. Placebo

4.2.1.3. Empty-Control groups (included in this study)

4.3. Experimental Conditions – groups who receive different types of the key ingredient

4.3.1. Multicultural Group – word search with multicultural terms as well as 5 distractor words to minimize hypothesis guessing

4.3.1.1. Hypothesis guessing- when a participant actively tries to figure out what the study is about, which can lead to unnatural responses

4.3.2. Color Blind Group – word search with color blind terms as well as 5 distractor words (same ones as the multicultural group) to minimize hypothesis guessing

4.4. Placebo Condition – a condition that doesn't receive any treatment, but participant's believe they are

4.4.1. Explanation - "Though we won't include one in this study because participants likely won't realize that they are in an experimental group, a placebo condition is often useful if we want to see how participants act if they believe they are receiving a treatment, but actually aren't. Placebo groups generally help us get a handle on how participants' expectations influence outcomes in our dependent variable."

4.5. Control Condition – this group does the same thing as experimental groups without the key ingredient.

4.5.1. (They will do a word search with common everyday words that aren't associated with multicultural or colorblind perspectives)

4.6. Empty Control Condition – a group that does not receive any type of treatment or "key ingredient." This provides a baseline that shows how participants act without any treatment.

4.6.1. (They will not do any word search.)

5. Confounds

5.1. What It Is – anything the researcher accidentally changes along with manipulation

5.2. It's Importance – the presence of a confound makes it impossible to know if the treatment or “key ingredient” is responsible for the changes in the dependent variable.

5.3. Application to Study – In the present study the researcher must be careful that the word searches are all as similar as possible. If one had 10 words to find, while another had 5. That would be a confound. If one was on white paper, while another was on yellow, that would be a confound.

6. Measuring the Dependent Variable (Attitudes toward an Outgroup Member)

6.1. Seat Choice

6.1.1. Key Measurement Considerations – Need to set up 8 chairs in a room with the outgroup member's belongings on the far left chair. This gives the participant 7 seats to choose from.

6.1.2. Higher score indicates more positive attitude toward outgroup member (Table 1).

7. The Procedure/Conducting the Study

7.1. Setting = Research Lab and Adjoining Room with 8 chairs

7.2. Informed Consent

7.2.1. In a research lab, Researcher/actor meets participant/actor for study on “Word Searches”

7.2.2. Researcher goes through Informed Consent “here is the informed consent which outlines what the study is basically about, any

risks/benefits of participation, and lets you know that you are free to quit at any time”

7.3. Random Assignment to Condition

7.3.1. The researcher randomly ordered the packets so that the participant's condition (multicultural, colorblind, control, empty control) isn't based on anything other than chance. Otherwise the researcher may subconsciously be more likely to assign certain participants (e.g., those who look physically fit) to certain conditions (e.g., running).

7.4. Running the Study

7.4.1. Participant receives randomly assigned Word Search (would want to highlight the words they are searching for to show the ones associated with multicultural and colorblind, as well as the distractor words—in italics. Also how the control group has all mundane words)

7.4.1.1. Multicultural - culture, variety, difference, diversity, multi, *flowers, stars, artistic, world, music*

7.4.1.2. Color-Blind - equality, unity, sameness, similarity, blind, *flowers, stars, artistic, world, music*

7.4.1.3. Control - practical, relaxed, logic, creativity, friendship, *flowers, stars, artistic, world, music*

7.4.1.4. Empty Control – (nothing) (research says they ran out of word searches for the first part)

*Should film/show all 4 conditions

7.4.2. Measure of Attitudes toward an Outgroup Member

7.4.2.1. Researcher escorts participant to adjoining room for Part 2.

7.4.2.2. “For the next part of this study, you are going to work together with the following partner (hands participant a picture) on additional word search tasks. They’ve already arrived, but had to run out to their car to get something. Please have a seat.”

7.4.2.3. Researcher walks to a different part of the room, notes the participant’s seat selection.

7.5. Debriefing

7.5.1. Researcher explains the purpose of the study to the participant reads from debriefing sheet “Thank you for participating. In this study I was trying to determine if different interethnic ideologies influenced attitudes toward someone different than you. Specifically I focused on multicultural perspective, which is the idea that we should celebrate differences and the colorblind perspective which is the idea that we should ignore differences and focus on shared similarities. I manipulated those based on the words participants searched for in Part 1. There were also control groups, one who searched for neutral words, and one who didn’t search for any. Do you have any questions?”

7.5.2. Address Deception

7.5.2.1. Researcher/actor explains “It is important that we get a natural performance, not one that the participant feels is expected. If participants were to know the true reasoning and hypothesis behind the study they may perform in an unnatural way by trying to live up to the experimenters perceived expectations. To eliminate this problem it is necessary for me to mislead you about the true nature of the word search and the fact that there was an outgroup member who you were paired with in Part 2. In actuality the word searches were part of my manipulation and there wasn’t anyone in Part 2. Rather, we used the same picture of another participant for everyone. Because of the nature of how we did the study, it is quite natural for

participants to have believed there was another person, but rest assured there wasn't."

8. Results

8.1. Figure

8.2. Explanation of Results & Statistical Analysis

8.2.1. After collecting data from 88 people, the researcher ran a one-way analysis of variance (ANOVA) comparing the 4 conditions/groups (multicultural, colorblind, control, empty control) to see how they influenced attitudes toward the outgroup member. As the viewer can see from the figure, those in the multicultural group had the most favorable attitude compared to all other conditions.

9. Discussion/Implication

9.1. Relate "present study" back to previous research

9.1.1. "The results of this study replicate previous research showing the benefits of a multicultural perspective. This study adds to existing literature by showing how it can be manipulated in a non-explicit way and can influence an overt behavior like choosing where to sit."

9.2. Apply findings from "present study" to everyday life

9.2.1. "Considering the potential benefits of seeing others differences, it is easy to see how this might apply in a variety of contexts such as attitudes toward sexual minorities, anti-bullying efforts in schools, divorce mediation, and perhaps even in international relations. It also suggests a more general need to recognize and appreciate differences rather than ignoring or avoiding them."

Results:

Figure 1.

Related Articles/Additional Reading:

- Ehrke, F., Berthold, A., & Steffens, M. C. (2014). How diversity training can change attitudes: Increasing perceived complexity of superordinate groups to improve intergroup relations. *Journal of Experimental Social Psychology*, 53, 193-206. doi:10.1016/j.jesp.2014.03.013
- Richeson, J. A., & Nussbaum, R. J. (2004). The impact of multiculturalism versus color-blindness on racial bias. *Journal of Experimental Social Psychology*, 40(3), 417-423. doi:10.1016/j.jesp.2003.09.002
- Van den Bos, K., Euwema, M. C. Poortvliet, P. M., & Maas, M. (2007). Uncertainty management and social issues: Uncertainty as an important determinant of reactions to socially deviating people. *Journal of Applied Social Psychology*, 37, 1726-1756.

Class Demonstration Idea:

- Instructors could randomly assign students to one of three groups. One group gets a small Dixie cup with either Gummi Bears, Sour Patch Kids, or Nothing. Everyone is instructed to eat whatever is in their cup, then everyone sees a series of cute pictures (puppies, kittens, etc.) presented via PowerPoint (or something similar). Students would rate how “sweet” they thought each animal was in the picture. The instructor could then discuss key components of the study, compare the groups’ data, and discuss ways to improve the study.

Design Your Own:

- Ask students to design a multi-group experiment to test the effectiveness of different types of therapy for treating depression. Their design should include at least one placebo and one empty control group. Have students identify potential confounds to avoid.

Legend:

Figure 1. Mean Attitude Toward Outgroup Member by Interethnic Ideology Condition

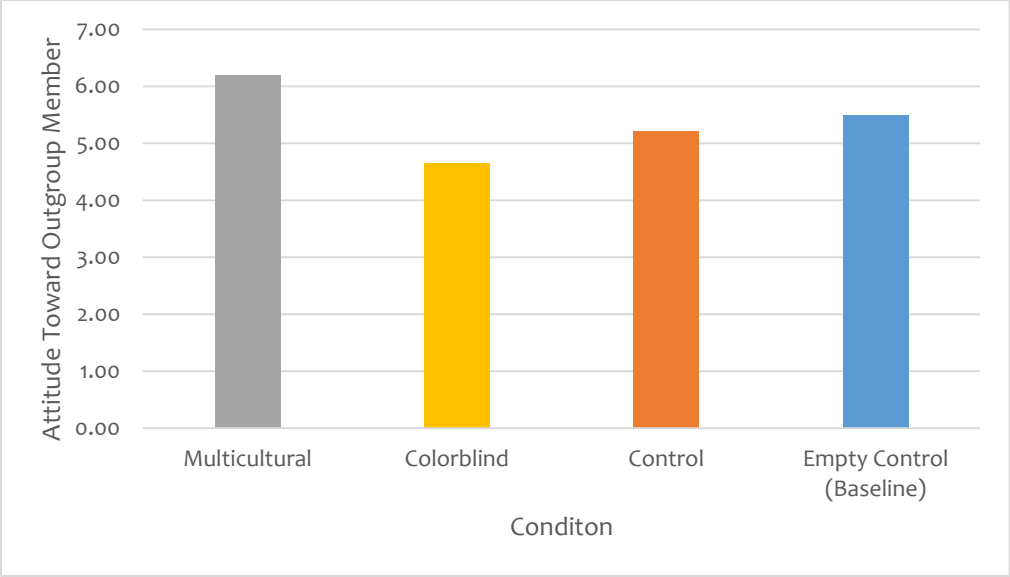


Photo or Graphic File

[Click here to download Photo or Graphic File: Lewandowski_multigroup_table1.docx](#)

Chair with Belongings	Empty Chair	Empty Chair	Empty Chair	Empty Chair	Empty Chair	Empty Chair	Empty Chair
	7 points	6 points	5 points	4 points	3 points	2 points	1 point