Assignment Four: Article Review

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Research Methods in Social Psychology

*Problem 1: identify the independent variables and dependent variables*

In this study, the independent variables are stereotype threat (i.e., the discomfort targets feel when they are at risk of fulfilling a negative stereotype about their group), and pacing conditions (i.e., whether the training design is timed or self-paced), the interaction effect from negative age-related stereotype threat and pacing conditions. The dependent variables are older adults’ performance on practice exercises, performance on post-training test, and participants’ reaction to the training they received.

Both independent variables stereotype and pacing conditions are manipulated. All the dependent variables older adults’ performance on practice exercises, performance on post-training test, and participants’ reaction to the training they received are measured.

*Problem 2: hypotheses*

The 6 original hypotheses in this paper is proposed as:

1. Stereotype threat will result in poorer training performance for older adults.

* This hypothesis is testing the main effect from stereotype on training performance (on both practice exercises and post-training test).
* Problems: a) unclear about the object of reference for “poorer” (poorer than what?) b) unclear about the training performance is refer to which measurement, practice exercise or post-training test?
* Rewrite: For older adults, their training performance on both practice exercise and post-training test will decrease when they have stereotype threat than when they do not have stereotype threat.

1. Self-pacing will improve training performance for older adults.

* This hypothesis is testing the main effect of pacing condition on training performance (on both practice exercises and post-training test).
* Problems: a) unclear about the object of reference for “improve” (improve from what?) b) unclear about the training performance is refer to which measurement, practice exercise or post-training test?
* Rewrite: For older adults, their training performance on both practice exercise and post-training test will increase when the training is self-pacing than when the training is not self-pacing (timed);

1. Stereotype threat and pacing will interact to affect training performance, such that older adults exposed to stereotype threat and strict time constraints will perform less well during training than would be expected by the main effects of the two variables.

* This hypothesis is testing the interaction effect of pacing condition on training performance (on both practice exercises and post-training test).
* Problems: a) unclear about the object of reference for “interact to affect”. Not mention clearly how it affect? b) unclear about the training performance is refer to which measurement, practice exercise or post-training test?
* Rewrite: For older adult, they will have lower performance in the self-paced training when they have stereotype threat. Similarly, adult will have lower performance in the timed training when they have stereotype threat. However, the magnitude of the stereotype threat effect is more significant in timed training than self-paced training

1. Older adults who can self-pace during training will be more satisfied with the course than will those who are provided with strict time constraints.

* This hypothesis is testing the main effect of pacing condition on the participants’ reaction to the training.
* Problems: a) unclear about the object of reference for “more satisfied” (more satisfied than what?). And, it is not clear enough for the relationship between satisfaction and reaction. b) unclear about strictness about the time constraints. Three levels, five levels, or just compared with self-pacing?
* Rewrite: For older adults, they will have more positive reaction to the training when the course is self-pacing then when the course is not self-pacing (with time constraints);

1. Stereotype threat will reduce older adults’ positive reactions to training.

* This hypothesis is testing the main effect of stereotype threat on the participants’ reaction to the training.
* Problems: a) unclear about the object of reference for “more satisfied” (more satisfied than what?). And, it is not clear enough for the relationship between satisfaction and reaction.
* Rewrite: For older adults, they will have less positive reaction to the training when they have stereotype threat than when they do not have stereotype threat.

1. Stereotype threat and pacing will interact to affect training reactions, such that older adults exposed to stereotype threat and strict time constraints will have extremely negative reactions to training.

* This hypothesis is testing the interaction effect of stereotype threat and pacing condition on the participants’ reaction to the training.
* Problems: a) unclear about the object of reference for “more satisfied” (more satisfied than what?). And, it is not clear enough for the relationship between satisfaction and reaction.
* Rewrite: For older adult, they will have less positive reaction to the self-paced training when they have stereotype threat. Similarly, adult will have less positive reaction to the timed training when they have stereotype threat. However, the magnitude of the stereotype threat effect is more significant in timed training than self-paced training.

*Problem 3:*

The stereotype threat is manipulated by providing information to participants about research findings suggesting that there are age-related differences in computerized library training and by making age salient to participants. Mainly, two group of participants will receive different statements in the instructions. Besides, a training intervention occurred between the introduction of the stereotype threat and the measurement of test performance.

However, the statement for stereotype threat condition and no-threat condition are different not just about motioning the existence of age-related differences in computerized library training. Statement for stereotype threat condition need to provide the age information. And, they are told that their performance will be compared with other people with different age. But none of these are mentioned for the group of non-threat. These differences may provide alternative explanations. For example, if the participants are aware of their training outcome will be recorded and compared with other people. They may feel nervous and perform badly. Or, the participants feel uncomfortable about providing their age information. This uncomfortableness is not about age-related stereotype threat. It may just a feeling of being offended, like some people ask your income. In particular, some older female may sensitive to show their age. And, this uncomfortable feeling make they perform badly. More importantly, the intervention of training between the introduction of stereotype and measurement of testing brings a lot of uncertainty. For example, the study ability of participants and training ability of the trainer may be also significant factors.

Besides, we cannot guarantee every participant indeed carefully read the instructions, or the information about stereotype threat information. Even they read the information, we cannot guarantee that they all remember stereotype threat information along with all the other information in the instructions during the training. The instruction sheets are required to be returned. During the intervention of training, they cannot review the sheet again. They are aged and given a lot of information at the same time. It is very likely they are not really aware of or remember the stereotype threat. Although, theses issue theoretically can be checked by manipulation check. In addition, I am not sure whether the statement of existence of age-related difference in training is enough or accurate to conclude that the participants will feel the stereotype threat. They may just feel that it is just a previous research finding not a real threat. As the author mentioned, a better way could be let the participants to infer the stereotype from the information or through the interaction. So that we can make sure they are indeed feeling the stereotype threat, not other things.

*Problem 4:*

The manipulation check is designed by the item in the questionnaire after all the training practice, and testing. The item was “Before you began the training here today, you were given instructions about the training. These instructions included information about previous research on training. Previous research has found . . .”. Participants were asked to circle one of three choices: “age-related differences,” “no age-related differences,” or “do not remember.”

I personally think this item is leading. The participants who do not remember the age-related difference statement may also select that there is age-related difference since they do not want to let other people feel they are oblivious. I will instead let them select among “age-related difference”, “sex-related difference”, “education-related difference”, and “race-related difference”.

*Problem 5:*

If the participants do not pass the manipulation check, they are likely to ignore or not notice the stereotype threat the researchers want to manipulate during the study. That means, their difference in the training performance and reaction may not have any relationship with the stereotype threat. Dropping subjects based on the results of a manipulation check following treatment assignment is common practice. However, this practice can lead to serious bias and argue for a focus on what is revealed without discarding subjects. For example, the participants may have significant differences in memory ability. And, this memory ability may be useful to explain their difference in performance and reaction to the training. Similarly, the manipulation check result may also relate to the self-esteem since people are likely to select the age-related difference even if they do not remember. Thus, if we drop the subject who fail the manipulation check, this may only select the people with high self-esteem. This factor may also explain the dependent variable systematically. However, there is no explanation of any potential issues like these in this paper. Consequently, I personally do not recommend to drop the data. Additionally, the data set is relatively small. It may provide more information if we have more data.

*Problem 6: alternative explanations*

I personally think their conclusion about the relationship between stereotype threat and test performance is not reliable. A strong conclusion is build based on reliable data set, reasonable experimental design, careful manipulation and operation, and most times the support from other related research. Their conclusion is already inconsistent with other researches. There is a need to double check with more data. The whole operation and manipulation have some potential issues. There are many operations they designed are not conventional and lack of theorical support. For example, training intervention occurred between the introduction of the stereotype threat and the measurement of test performance. The stereotype threat is introduced by simple statement in the instrumental sheet rather than be inferred by the participants. These issues make a threat to the internal validity of the study. And the small sample size limits the external validity of their research as well.