Overview and Predictions

Janis' groupthink theory and other previous studies provide the basic support for this research. The purpose of this research is to investigate how groupthink affects the accuracy of collective decision making when time is limited. Firstly, we wanted to verify that groupthink is more likely to occur under time constraints, and this would be achieved by validating the antecedents of the collective thinking mentioned in Janis' groupthink theory. Secondly, we wanted to prove that groupthink leads to the illusion of extreme risk adoption and unanimity, thus affecting the accuracy of collective decision-making. This question was tested by analyzing the experimental questionnaire data.

Hypothesis 1: Groupthink is more likely to happen under time pressure (leader, established procedure, confidence to find alternative solution)

Hypothesis 2: Groupthink lead to extreme risk taking because of the limited time.

Hypothesis 3: Groupthink lead to illusion of unanimity that some members have no time to convince others.

A same-sex trio was asked to act as a survivor of a plane crash in the desert, and they were asked to rank 15 useful items by importance to increase their chances of survival. First, the participants were arranged to complete the sorting tasks independently, and all participants were given the same length of time in the process. The three participants were then asked to discuss the given problem and get the group’s unanimous results at the end of the discussion. We set different time pressure levels by controlling the duration of the group discussion, and we will investigate participants’ feelings of time pressure in the questionnaire at the end of the experiment to ensure the effectiveness of the control. There were pre - experiments before the start of the formal experiment, in order to find the most reasonable ranking task completion time for individuals and groups. At this most reasonable time, the participants would not feel that the time is not enough, or the time is too loose. On this basis, we adjusted the time to achieve the purpose of controlling the time pressure. After the instructions were completed, the researcher exited the room without any intervention in the discussion process. After the group discussion was completed, each participant was asked to fill out a questionnaire about the personal feelings and other related issues during the discussion. The task completion quality of individuals and groups is represented by their ranking result scores. The specific score algorithm formula is explained in detail in the next section.

Method

Participants and Design

Participants were 60 college students in Beijing University (30 males and 30 females) who are about to graduate and going to enter social work. In order to research the performance of participants under different time pressures and whether the test results are related to gender, the study employs a 3 × 2 between - groups design. Three time limits (according to the pre - experiment described later, the three time limits were set to: 10 minutes, 15 minutes, no time limit), and two gender compositions (groups of 3 women or 3 men) were used.

Selection of task

Desert Survival Situation is a case study that is widely used in the world to research collective decision making. It is often used to measure whether a team achieves synergy. In our study, it can demonstrate the quality of group decisions under time pressure quickly and objectively through score calculations, thus providing data supporting for further analysis to test our hypotheses.

Desert Survival Situation describes a scenario in which a flight just crashed in the Sonoran Desert in the southwestern United States around 10 o’clock in the morning on a mid-August day. Except for some items that can still be used that were salvaged from the aircraft, there are only barren desert environments around the survivors. Participants were asked to play roles as survivors, ranking the 15 items salvaged from the plane in order of importance to the survival of the team. (Details can be found in the "Desert Survival Activity" in the appendix)

Pre - experiment

The purpose of the pre - experiment is to find the most reasonable time for task completion, which means the participants will not feel pressure due to lack of time, nor will they feel that the time is too redundant when they are required to complete the task within this given time.

Four groups of participants (two groups of men and two groups of women) participated in the pre - experiment. When they were required to complete the task of ranking 15 items in the Desert Survival Exercise alone, they were told that there was enough time to complete the form, but it should be as fast as possible. The table showing the time taken by the 12 participants to complete the sorting task is as follows:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Participant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Time (min) | 12 | 17 | 13 | 13 | 14 | 18 | 17 | 16 | 14 | 15 | 16 | 15 |

Table 1 Time to complete the task independently

As can be seen from Table 1, the most reasonable time to complete the sorting task alone is 15 minutes (mean=15, median=15).

The four groups of participants conducted the group discussion after completing the ranking task independently. They were asked to agree on the order of importance of the items within a certain period of time. Again, they were told that there was enough time to discuss and complete the form, but it should be as fast as possible. During their discussion, the researcher did not implement any intervention, but only recorded the time spent by each group from the start of the discussion to the end of the discussion. The table presenting the time spent by the four groups to complete the discussion and the form is as follows:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Group | 1 | 2 | 3 | 4 |
| Time (min) | 17 | 18 | 25 | 19 |

Table 2 Time to complete the task by group discussion

As can be seen from Table 2, the most reasonable time for group discussion should be around 20 minutes (mean=19.75). In the formal experiment, the time pressure was set to three levels (low time pressure, high time pressure, no time pressure), and the artificial control of time pressure is based on the most reasonable discussion time in the pre-experiment, which is explained in detail below.

Time pressure Manipulation

Time pressure manipulation is based on the results of pre-experiments. In order to divide the time pressure into three levels of high time pressure, low time pressure and no time pressure, we set the time limits for the group discussion to 10 minutes, 15 minutes and no time limit. At the same time, the question "To what extent do you feel the pressure of time?" was set in the questionnaire at the end of the experiment to confirm that the purpose of time pressure differentiation was achieved.

In the pre-experiment we found that participants tended to ignore subtle time-stress scenarios, so in addition to the necessary introductions about the situation, the following information was presented to the group under time pressure during the formal experiment:

We would like to simulate the pressures felt under real desert survival scenarios. Therefore, we hope that you can imagine that you are a real member trapped in the desert because of an airplane accident., and the choice of your group will determine the chances of survival for the entire group. The desert environment is dangerous, so it makes sense for your team to come to a decision as quickly as possible.

Procedure

Participants volunteered to participate in a study called “Desert Survival Activity”, which was described as a study that participants should rank 15 items by importance to increase the likelihood of survival. Same-sex volunteers were randomly divided into eight groups (including eight groups of men and eight groups of women), three in each group. Three male trios were assigned to high-time stress conditions; three male trios were assigned to low-time stress conditions; the remaining two male trios were assigned to no-time stress conditions as control groups. The allocation process was random. The eight female trios were assigned in the same way as men.

Once the participants were seated, they were informed information about the entire experimental process, which explained that they would play the role being trapped in the desert because of a plane crash, and the main task was to rank the related items. They were told that they had the right to stop or withdraw at any time if they felt any discomfort before the start of the experiment and during the discussion. At the same time, the anonymity of participation and the confidentiality of experimental data were also guaranteed to participants. In order to prevent participants from losing patience during the experiment and affecting the results of the experiment, they were told that the whole process would last for about half an hour before the experiment started.

Each participant was given a piece of material detailing some of the practical information, the plane crash, the desert environment, and the resources available around. The document also described the task that the participants needed to accomplish, sorting out 15 items that had been salvaged from the wreckage of the aircraft. Participants were given 15 minutes to complete the sorting form independently and were told that they could not communicate with each other during the period.

When all the participants completed the personal sorting form, they began to enter the group discussion session. The groups assigned to the high time stress condition were given a discussion time of 10 minutes, while the groups assigned to the low time stress condition were given 15 minutes to discuss. The control groups did not have a time limit and were told that "you can spend enough time to discuss until the final result is reached." All the groups were told that "you should be rational and objective in your discussions, not be easily convinced by others, but you should not blindly stick to your own opinions; in addition, the decisions of you and your group are crucial to whether you can survive in the desert." Once the discussion began, the investigator no longer intervened in the discussion process until the end of the given discussion time. Finally, participants were asked to complete a questionnaire that included the participant's group number, gender, participants' perceptions during the discussion, and process recall. Then the participants are dismissed.

Reference

J. Clayton Lafferty, Patrick Eady & Alonzo W. Pond (1974). The Desert survival problem: a group decision making experience for examining and increasing individual and team effectiveness: manual. Plymouth, Mich. : Human Synergistics. 7th ed.