Group Size vs. Conformity Frequency (Based on the Asch Experiment) – Correlation Study

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**Abstract**

Conformity is a phenomenon seen throughout both individuals and societies alike. It has many forms and can be either rational or irrational. Conformity requires something for it to be conformed to and this is where conformity can be affected by other influences quite easily. One believed effect is the idea that when a number of people who choose one option out of a collection of options, a majority consensus is formed and because of the innate desire for humans to be accepted, they will conform to that consensus. After the experiment, it was found that the group size effect seems to increase but then reaches a peak at which it is most effect, but then decreases after reaching that peak thus creating a curvilinear relationship.

**Introduction**

Conformity is a part of everyone’s life and can affect in many obvious and subtle ways. Being able to understand and analyze the conformities of society and individuals is a powerful tool and can give valuable insights as to why people behave, think, and feel the way they do. The importance of this ability lies in the fact that it can explain the behaviors of a person. One factor that may influence conformity is the group size that is establishing a consensus for one to conform to, thus studying the relationship that exists between the group size and conformity becomes quite important. This paper will begin by defining what conformity is, a discussion of some of the relationships that could exist between group size and conformity, some of the flaws that the previous experiments contain that tested these variables, and a study which eliminates the flaws contained in the previous experiment. The paper concludes with a correlation study studying the effects of small group sizes and its effects on conformity.

**Literature Review**

Coon and Mitterer (2012) explain the Asch experiment and some of the factors that are involved in conformity. The explain that some factors involved in group conformity include group sanctions, or positive or negative reactions by the group, the importance of the group to an individual who is conforming, and the size of the group (Coon & Mitterer, 2012). As for the group size, Coon and Mitterer (2012) imply that this affects the conformity percentage only so much, but then after wards tends to have less of an effect or an equal effect to larger group numbers. Specifically, they found that the consensus created by three people had the same effect as the consensus created by as much as eight people, suggesting that the group size effect only works to a certain extent.

Guandong, Qinhai, Fangfei, & Lin (2012) explained that conformity is the change of actions or attitudes caused by the pressure from some real or notional groups. In the case of this study, the action or attitudes will belong to the subject who will be conforming, and the pressure will come from the group of confederates or actors. Guandong et al. (2012) continued by explaining that there are two types of conformity and several forces involved with each type; the first type being a rational conformity, which is driven by thinking, judgment or reason, and the second being an irrational conformity, which is driven by intuitionistic and instinctive activities and is primary influenced by the behavior of the group (i.e. the confederates). One type of rational conformity is compliance and explains the conformity as the subject feeling a desire to feel a part of the group as a whole and will conform to comply the majority consensus; one type of irrational conformity is herd behavior and explains the conformity as being instinctive or biological and is unconscious (Guandong et al., 2012).

Stang (1976) performed several experiments testing the relationships involved in group size and its effect on conformity. Stang proposed two relationships that could exist: first, the influence on the subject decreases with increases in group size, thus being a negative correlation; second, the relationship could be a curvilinear or concave down, that could peak at a point and then decrease after reaching that point (Stang, 1976). Once Stang had performed his experiment, he found that the conformity increased from the second, third and fourth group, but from the fourth to fifth group the conformity decreased (Stand, 1976). These findings suggests that the second relationship is the correct one and also that the peak occurs when there are about four confederates and decreases on either side of the graph. Stang (1976) suggested that the location at which the conformity is the highest is dependent upon several factors including the experimental conditions, the situation or context involved, and the society’s culture.

The findings in Stang’s experiment support an earlier study performed by Rosenberg 1967. Rosenberg (1967) performed an experiment very similar to Asch’s procedure in hopes of being able to find the relationship that was involved with conformity. Once again, after performing the experiment Rosenberg found that conformity definitely did occur in all groups but peaked at a certain value as suggested by both Stand and in Asch’s original study (Rosenburg, 1967). One important difference though is that Rosenburg found that after the peak, is decreased in conformity rather than leveling-off like in Asch’s experiment (Rosenburg, 1967). This is one thing that this experiment is trying to verify; that is what the relationship will be between the group size and the conformity frequency.

After all these experiments occurred, Mori and Arai (2010) point out that “one intrinsic problem is that they (the confederates) behave in a manner that is somewhat unnatural and artificial,” and continue by suggesting that this fakeness in the experiment affects the conformity that is trying to be studied in the experiments. Mori and Arai (2010) also say that another factor may be involved is that the participants may tend to answer by taking into account their assumptions of the expectations of the experimenter. These are important things that will be considered while conducting the experiment in hopes on minimizing their effect on the conformity.

Kivlighan, London, and Miles (2012) examined the effect of the number of group leaders on the group of confederates and the participant. They discovered that the more leaders that were involved more conflict arose in the group and among the leaders and also that there was less cooperation amongst all of the individuals involved (Kivlighan et al., 2012). Although our experiment is not explicitly testing this, it is important to consider its effect on the conformity on the experiment. Thus it is included to allow others to know why the experiment method was developed the way it was. The purpose is to try and minimize the effect that the number of perceived experimenters has on the conformity effect.

**Methods**

The motivation of this experiment is driven by the observation that people conform to a majority consensus as a part of life, but what is the effect of the group size involved on the creation of that majority consensus? The purpose of this experiment is to hopefully give some insight into the relationship involved with these two variables.

One thing that could be problematic is that a participant could choose to conform or not based on that awareness of expected behavior rather than the effect that the confederates are to have on the participant. To address this issue, the participants were deceived into believing that the experiment was completely different entirely, but the participants were immediately debriefed following the end of a trial.

We hypothesize that the more confederates that are involved in creating the majority consensus, the stronger the effect will for the participant to conform; thus the participant’s conformity frequency or percentage will increase as well.

In this experiment, the independent variable is the size of the confederate group and the dependent variable is the number of times that the participant conforms to the majority consensus. Some extraneous variables that will be minimized that way there affect will be minimized include: the participant discovering the true purpose of the experiment, the way the confederates set the majority consensus, the order in which the cards are presented, and other unknown variables. In order to address these, we will present the cards in the same order for all trials, try to keep the creation of the majority consensus consistent amongst all trials, and etc.

To collect data to test the hypothesis, we performed a similar experiment to the original Asch study. We performed five trials all varying in the number of confederates that were used to set the majority consensus and with one participant that was being observed. The first trial had one confederate member with one participant; the second trial had two confederate members with one participant and so forth to the fifth trial which had five confederate members and one participant. Now, at the beginning of a trial, the experimenter stood in the front of the room with a collection of nine unique cards. On the left side of the card (from the participants view) was a line segment and on the either side there were three line segments varying in length that were labeled as A, B, and C beneath the line. The experimenter explained that they were going to ask the participants, of the fake experiment, which line with the label appeared to match in length with the line presented on the left as part of a visual test; the experimenter then explained that they were going to do this twice with each of the nine cards thus resulting in 18 sub trials in each trial run. The participant was asked last for each time that way the confederates could create the majority consensus for which line matched in length with the given line segment. We then counted the number of times which the participant conformed to the false consensus created by the majority group. With this count we were then able to calculate a percentage of the number of times that a participant conformed to the consensus created by the confederates.

After the false experiment was conducted, the participant was told the true purpose of the experiment and was asked if it was acceptable to continue and use their results for the experiment. In this study, all participants accepted this request.

**Results**

The graph above shows the data that we collected along with the correlation coefficient squared. This shows that the data that we were able to collect suggests a curvilinear relationship. This graph has an R2 value of 0.8748 which means that the correlation coefficient is 93.5%. This indicates that the correlation is statistically significant and that it is a positive correlation. But this does not quite convince me primarily because since of the curvilinear nature of the relationship. Rather, we would say that there is a strong correlation amongst the first four trials, but after that it would begin to decrease. We learned that conformity, as suggested from some of the published literature, that there was a peak and then decreased after that peak.

**Discussion**

The results that we collected match but also disagree with some of studies discussed in the sources. Our results seem to match the findings of Coon and Mitterer (2012) which includes the idea that the effect of the third group is similar to those groups with more members. The effect seems to have worked to a certain extent but then after that reached a peak and subsequent trials seem to average out at that conformity percentage. Stang (1976) originally proposed two relationships that could exist. The relationship that our study suggests is comparative to Stang’s second suggested one which was a concave down or curvilinear relationship. It also contrasts Stang’s first proposed one in which he stated that it would be a negative correlation, or as one increases, the other decreases.

Rosenberg (1961) also suggests the same relationship that was found in this study, that being a curvilinear relationship. What is interesting is that the peaks in both out study and the one performed by Rosenberg match in the number of confederates who had set the majority consensus. As well, Rosenberg (1961) suggested that beyond the peak it could either decease or level-off and because of lack of trials beyond that, he was unable to determine which one it does, and we too experienced that.

We observed that the primary type of conformity that was present in our study was the irrational herd behavior type. The main drive of this conformity is instinct and unconscious forces (Guandong et al., 2012). The primary reason we think that this was the main type of conformity involved in this study was primarily because of some of the reaction of participants once they were told what the true purpose of the study was. The first several trials participants (trial participants 1-3) explained that they did not really think about the consequences that would be involved in either choice of conforming or selecting the correct answer. One interesting thing that the trial four’s participant stated is that they actually logically thought through what they wanted and they consciously did not want to stand out from the rest of the group thus the participated in a rational compliance conformity which main motive is to comply with the consensus set by the other confederates (Guandong et al., 2012). This may explain why trial four had a comparatively higher conformity percentage than the other trials. As for the fifth trial, we think that it went down primarily because there was more variance within the consensus set by the confederates thus the effect that it had was lessened which suggests that the participant would feel less obligated to conform.

*Extra things on rubric that did not have a proper place in the template provided.* Overall, everyone participated equally and deserves full points. To reduce the researcher bias that could have been involved in the experiment, we had one member perform the experiment and one put together this paper so that we could try and be objective and have no prior motivations that could skew the data that was collected in any way.

As for the research participant bias, we tested people who we know were not aware of the Asch experiment previously in hopes that a self-fulfilling prophecy factor would be minimized. As well, deceiving the participants into thinking that we were performing a different experiment than the true one was also a means of distracting the participant from the true purpose and helped create a more realistic environment in which the effect of conformity could influence with as few disturbances as possible.

One relative advantage of using a correlation study was the fact that we did not have to explicitly state that the group size was the cause of the conformity observed from the participants. Another advantage comes from the intrinsic complexity of the conformity phenomenon and the number of factors that are involved in with it. Finding and studying a correlation is much easier than finding a cause and effect relationship.

Some disadvantages involved with using a correlation study mostly comes from the fact that there may have been some unknown variables that were also affecting the results of the study. As well, it could be easily confused as this study as causation rather than a correlation which must not be done to truly understand the results of the experiment.

**Conclusion**

The ability to understand and analyze conformity and the various factors, such as group size, that affect it is a valuable skill to acquire. Its value lies in the fact that people can become aware things that try to conform them to, such as social norms, myths, and otherwise false premises created by any organization. This allows people to know why they think, believe and behave the way they do without blind obedience and creates a unified and educated populous.

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