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**Vision Accuracy: Comparisons**

by  
Mark Roman

A Thesis

Submitted to the  
Department of Educational Services,  
Administration, and Higher Education  
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Thesis Chair:        John Klanderman, Ph.D.

## **Abstract**

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Vision Accuracy: Comparisons  
2010/11  
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Solomon Asch conducted a Line Judgment Task in the 1950s that led researchers to believe that conformity can be assessed through experimentation. The purpose of this study was to modify that of Asch's experiment and to assess the answers that college undergraduate students would give. Twelve trials of line comparison tasks were utilized as well as answers from five confederates. It was hypothesized that out of the 47 participants, more of them would answer incorrectly to the incorrectly answered trials of the confederates than those to those trials that the confederates answered correctly. There were a total of five incorrect trials and seven correct trials that confederates answered correctly. This study does lend support to the notion of conformity based on answers of confederates; there was a higher percentage incorrect for the incorrect trials than compared to the correct trials. The reasoning and explanation of these results are discussed.

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## **Chapter 1**

### **Introduction**

#### 1.1 Why

The topic of conformity has been used throughout our society. It is a subtle mannerism that no one seems to pick up on unless it has been acknowledged by another party. As a society, we usually perform certain actions because someone close to us is doing it or because a group of people are persisting on our completion. The researcher would like to know, in an age of “individualism,” why are so many individuals liable to conform even against their better judgment. In the same situation, will individuals continue to follow a group if their ideas or opinions would not be heard? If an individual has the chance to voice his/her statement without the group finding out, such as over the internet or as an anonymous voice, will the same effect occur?

The major factor that the researcher will attempt to examine is that of group conformity. With this experiment, there will be one individual participant answering a set of 12 trials based on their vision accuracy of the lines. There will only be one condition in which the participant will be expected to be a part of. They will have the ability to declare their answers non-verbally and without the scrutiny of saying their answers aloud. The results found in the experiment will hopefully lend support to those studies already done, mainly to that of Solomon Asch.

The researcher became interested in the topic of conformity while in a class of Social Psychology. The professor explained to the class that there are many forms of conformity; whether it's standing behind a long line unknowing of what it is for or just following a friend in a crowded area. As human beings, we perform actions that help ease

the anxiety we have of going against the grain. When we are in public, being viewed by others, we tend to fit to what they as the majority, would see as being correct. Though, would the same decision be made if you were able to alleviate responsibility? In other words, would human beings be less likely to follow another if there is no chance of others finding out.

There have been many studies done on conformity and it seems that most of the research lends support to the notion that an individual will follow a group rather than having to be an outcast. The researcher wants to take it a step further, thus placing in a non-verbal component that will answer another question.

## 1.2 Purpose

The main purpose of this study is to examine if an individual will be prepared to maintain their ideas or relinquish those ideas in order to be accepted by a group of peers they have never seen before. When an individual has the opportunity to reduce the anxiety of being alone, most will find a supportive outlet. Though, with most of psychology and its therapies leaning more on the side of individualistic ideas, how is it that most people will so easily follow a group when given the choice. This is if an individual is within reach of another's ear or eye. If an individual could make their decision without the worry of judgmental glares, will the conformity subside or remain the same? It's different if a person has to voice their opinions verbally/externally rather than internally/written down.

The researcher is interested in seeing if an individual can withstand the internalized social pressure of a set of answers by a group of participants that they've



never seen. This pressure that the individual may feel will be associated to the internalized pressure that they will be going against a group of answers by peers that they've never met before. In a sense, this will be peer pressure that the participant will have created inside their own mind rather than in the minds of the other members of the experiment. This will hopefully lend support to the notion that the individual will side with the results of the group. Though, in this instance, they will have the opportunity to communicate their answer without feeling the pressure from the group. The individual will then be able to express what they truly feel without having this internalized pressure based on the preconceived ideas of the group members. There are two possibilities to the way that the individual will regard this study. The researcher hopes that they will ultimately conform to the answers that they see before them and answer accordingly.

This will be examined in similar terms to the studies of Solomon Asch as well as other experimenters who also have researched conformity.

### 1.3 Hypothesis

The major idea of group conformity lies in the sole participant who is expected to follow the group. Though they will not follow the groups' answers entirely, they may begin to second guess themselves in order to relieve the possible tension that they feel internally. This tension will be created within the individual and in order to reduce that small amount of anxiety will side with the answers already given. As a result of the study, the sole hypothesis that the researcher wants to examine is:

1. The participating student will more likely answer incorrectly to the trials that are incorrectly answered by confederates compared to the trials that were answered correctly by the confederates.

#### 1.4 Theory/Background

As with any experiment, the way that a researcher comes up with an idea can open doors to other concepts. Aronson (2004) states that “there are many good reasons why, as citizens and as scientists, we should be concerned with studying the ways in which human beings form their opinions and the role that social conditions play” (p. 17).

It seems that the basis of group conformity stems back to hypnotism (Aronson, 2004, p. 17). Jean-Martin Charcot (1890) “noted that hypnotism is a genuine neurosis, not a physiological state; that it has its determinism, judged, in the physical order, particularly by the neuro-muscular superexcitability” (pg. 2). This led to researchers testing those individuals while in a transient state of mind. As mentioned in Freud (1949), Jean-Martin Charcot worked with Sigmund Freud and discussed his ideas of using hypnotism as a form of healing those with mental illness (pg ix). Charcot also noted that hysteria was susceptible to both males and females so there was no difference between the genders (Freud, 1949, pg ix). In other words, hypnosis, according to Aronson (2004), uses monotonous reiteration; hypnosis was able to produce involuntary movements in otherwise normal individuals (p.18). This continuous reiteration of gestures was said to be able to penetrate the individual’s unconscious and might have been able to change a mind set without having to harm the person. Hypnosis, and its lack of a formalized definition, has been stood as just another form of trickery. Are people really being put to

sleep and having their unconscious taken over or is it just mere suggestibility?

Suggestibility, according to the Merriam-Webster dictionary, is the lack of ability to resist some extraneous agent.

With the idea that an individual is unable to resist to another grew a scheme of conformity. Conformity and the assimilation of an individual to another brought upon it endless amounts of proposals. As stated by Aronson (2004), the conformity phenomena grew to where researchers were trying to test out the preferences of college students in social means. The results, when confronted with contrary opinions, seemed to shift their judgments to that of the group majority (Aronson, 2004, p. 18). With each individual having to think for themselves, it became uniform to go against their better judgment and side with the group answer. Aronson (2004) proclaims, “the sheer weight of numbers or authority sufficed to change opinions, even when no arguments for the opinions themselves were provided” (p. 18). Solomon Asch provided us with evidence that this occurrence does happen when an individual is placed in this situation.

Asch studied the effects of group pressure and how it forced the participant to shift their ideas to fit the group majority to maintain a balance within the group (Aronson, 2004, p. 18). Aronson (2004) states that this phenomenon leads to the notion that a person will readily change their ideas based on external manipulation and place comfort in the idea that the group is correct (p.18).

## 1.5 Definitions

Conformity – as stated on Dictionary.com as part of the Cultural Dictionary, conformity is an “agreement between an individual's behavior and a group's standards or expectations. A conformist is one who follows the majority's desires or standards.”

Peer Pressure – as stated on Dictionary.com, “social pressure by members of one's peer group to take a certain action, adopt certain values, or otherwise conform in order to be accepted.” Another definition on the same site provides that it is a “social influence a peer group exerts on its individual members, as each member attempts to conform to the expectations of the group.”

Internal – as stated by Dictionary.com, internal means “existing solely within the individual mind” or “coming from, produced, or motivated by the psyche or inner recesses of the mind.”

External – as stated by Dictionary.com, external means “arising or acting from outside: having an outside origin” or “relating to, or consisting of something outside the mind: having existence independent of the mind.”

## 1.6 Assumption

As with any experiment, there are bound to be unforeseeable events that will skew results. These variables may lead to an experiment being deemed unusable. The researcher will try to limit the amount of confounding variables.

One major problem with this experiment, that the researcher can see, is if the lone participant has knowledge of what is taking place. In other words, the participant has an idea of what is going on within the experiment and knowingly answers questions correctly or incorrectly. The researcher will eliminate data as he sees fit if this problem were to occur.

Another problem is that the participant, in order to alleviate stress as well as answer the questions to the liking of the researcher, will answer according to the groups' responses entirely. Though, this is important, it may tip the results a little more to one end.

## 1.7 Limitation

Many researchers tend to create questions that can be experimented on. When results are tallied, the researcher tries to imply that the sample population was random enough to generalize to the rest of the population. As with this experiment, the researcher hopes to gain knowledge on the thought process that goes on with conformity. Though it will be unlikely to call the experiment generalized entirely, it may be more useful in certain societies rather than in others. Unless the researcher is able to reach all of the different cultures and societal norms, the experiment's results will remain generalized in

the means of a certain culture; that culture being a college campus within the ideal of a Western society.

More experiments will be needed as well as continuous research to broaden the idea of conformity. Though it will be unlikely that the entire world will fit into this assumption, the results could examine an affect of conformity more often than not.

## 1.8 Summary

Within the next few chapters, the researcher will explore more into the idea of conformity. The phenomenon of conformity has been researched throughout the century and many researchers have expanded on its affects. The next chapter will try to enumerate a mass of different research conducted based around the idea of conformity. The amount of research that has been conducted will be nowhere near the amount of research found in the next chapter. Chapter two (2) will consist of some of the most well-known experiments throughout the era of conformity. With all the information placed here, the following chapter will lead into the researcher's planned experiment.

The third chapter will be where the researcher will execute the experiment. The experiment will consist of using five confederates and one participant. It will consist of participants taking the line judgment task in a survey-type format. The one box will have one line on it with varying lengths on the left side and on the right side of the first box will have three (3) lines on it with one matching the line on the left side of the box and two lines of varying lengths. Next to each of the boxes of lines will be another box with the answers of five (5) confederates answering the same vision trials; there will be twelve (12) total trials. All five of the answers will be exactly the same and will express correct

and incorrect answers during certain trials. The sixth participant will then have to make his or her decision. Once the experiment is concluded, the experimenter will detail the results in the following chapter.

The fourth chapter will consist of providing the results along with the use of tables and graphs. This is where the experiment will either lend support to previous research or debunk it with newly found information. That will lead us to the researcher's last chapter in where he will review the findings.

The fifth chapter will interpret the findings, state any further limitations, and imply for more research. This chapter will consist of taking the results found in the previous chapter and have them examined to either fit or nullify the hypothesis. The researcher will discuss the importance of the experiment as well as the results.

## Chapter 2

### Literature Review

With many authors trying to validate or discard the notion of social conformity, the researcher will illustrate some of the experiments that use conformity as a point of interest. The researcher is going to look at conformity through cultural norms, the thoughts of having another participant present, use of supervision, use of witnesses, use of confederates, and the study of line judgment as done by Solomon Asch.

#### 2.1 Conformity based around Cultural Norms

Many people believe that conformity would be more likely to occur in a culture where people are taught to act as a group rather than individually. The next study by Jeanne Ho-ying Fu, Sau-lai Lee, Michael Morris, Melody Chao, Chi-yue Chiu, and Ying-yi Hong (2007):

“cross-cultural findings with several measures of judgment and behavior converge on the general theme that Chinese, compared with Americans, have a greater preference for relationship-preserving modes of conflict resolution” (p. 191). The research by Jeanne Ho-ying Fu et al. (2007) “sought to distinguish the specific epistemic closure motives that foster cultural conformity” (Fu, 2007, p. 191). The research deals with the concept of need for closure (NFC); it “emphasizes that people high in overall need for closure are particularly eager to reach judgments in line with a consensus of ingroups” (Fu, 2007, p. 192). The study utilized 58 participants from a university in Hong Kong and 57 participants from a university in the United States. The



participants were given a description of four possible managers; 2 of the scenarios dealt with the manager previously knowing the people that they will work with and the other 2 scenarios dealt with the manager not knowing those that they work with (Fu, 2007, p. 195). Results found that Chinese answered that they would want a manager who has a connectedness previously than someone new while Americans would chose to have an unconnected manager (Fu, 2007, p. 196). It was implied that the Chinese would like to have a manager who knows the people and has worked with them previously rather than someone new who might disrupt relationships. There are other studies that claim conformity amongst cultural groups is evident.

The cultural tendencies of a person should relate to how they were taught. The purpose of the study conducted by Marco Cinnirella and Ben Green (2007):

“Is to explore cultural differences in group conformity to CMC (computer-mediated communication) and face-to-face decision-making” (p. 2013).

The study was conducted to see there are differences between conformity through the use of computers and through face-to-face interaction (Cinnirella, 2007, p. 2013). The researchers used the line judgment task used in Solomon Asch’s study of the 1950’s (will be explained a little later on in this chapter) but through the use of computers (Cinnirella, 2007, p. 2013). There were two independent variables at play; one was whether the participant was face-to-face or communicating through the computer and the second was whether the participant was considered individualistic or collectivistic (Cinnirella, 2007, p. 2016). Each group had 4 members, 3 of which were confederates and used the line judgment task on each trial. The researchers developed four experimental conditions; (1) face-to-face and individualistic tendencies, (2) face-to-face and collectivistic tendencies,

(3) CMC and individualistic and (4) CMC and collectivistic (Cinnirella, 2007, p. 2017). The results showed that overall conformity was higher in the face-to-face situations than with the computer-mediated communication (Cinnirella, 2007, p. 2019). Also, it was shown that those participants who associated with collectivistic tendencies conformed more than those who were individualistic (Cinnirella, 2007, p. 2019). The use of cultural differences provides only slight insight to conforming questions since some Western society individuals would rather conform than stay independent.

Another look into the cultural aspect of conformity comes in a study conducted by Killen, Crystal, and Watanabe (2002), they used 513 Japanese participants and 544 U.S. participants ranging from the fourth grade, seventh grade, and tenth grade (p. 1791). The students were given six possible reasons why they would exclude another child from activity (Killen, 2002, p. 1792). Those reasons are: (1) aggressive behavior, (2) unconventional dress, (3) unconventional public behavior, (4) cross-gender behavior, (5) slow in sports, and (6) personality (Killen, 2002, p. 1792). The results showed that there were no significant differences between the American and Japanese children's evaluations (Killen, 2002, p. 1792). Though, there was a gender difference; boys were more willing to exclude girls from their groups and American boys were more willing to exclude than the boys from Japan were (Killen, 2002, p. 1793).

## 2.2 Thought of Conformity as stated by the Participant

When someone takes a survey or questionnaire in the presence of another, our answers may change based on the perceptions we want others to have of us. There are times we do certain tasks just to make it through the day. In this study, 34 part-time

masters of business administration (MBA) students took part in the experiment; 23 of them were in the first phase while 11 were in the second phase (Hewlin, 2009, p.731). Phase one of the experiment consisted of a written survey; the survey asked the respondents to think about their work experiences and to write down certain instances where an employee would act in a way that would find their true feelings (Hewlin, 2009, p.731). The second phase dealt with a face-to-face interview with the researcher of the study; the interview was said to last about 30-45 minutes and used the answers gained from Phase One to see if they were valid (Hewlin, 2009, p. 732). The majority of the votes were when employees felt that they were a perceived minority; some examples are through ethnicity, age, sex, religion, and lifestyle (Hewlin, 2009, p. 733). Other examples were when they perceived employees were self-monitoring, showing a collectivistic attitude, just emotionally exhausted, and just their overall need to leave (Hewlin, 2009, p.733). When the results were shown, the majority of the students chose perceived minority status, self-monitoring, and collectivism as the major aspects to why employees decide to conform (Hewlin, 2009, p. 734). There also seemed to be correlations forming between that of conformity and wanting to leave as well as being emotionally exhausted and wanting to leave (Hewlin, 2009, p. 734). In the presence of others, we tend to formulate their ideas without knowing what they are thinking and act in certain ways to please them.

In the next study, participants behave in certain ways during certain ages to be accepted. In the study conducted by Margo Gardner and Laurence Steinberg (2005), they took:

“306 individuals in 3 age groups—adolescents (13-16), youths (18-22), and adults (24 and older) –completed 2 questionnaire measures assessing risk preference and risky decision making, and 1 behavioral task measuring risk taking” (p. 625).

The actual sample size for each was: 106 adolescents, 105 youths, and 95 adults (Gardner, 2005, p. 626). They were then randomly assigned to either work individually or in a group (Gardner, 2005, p. 627). The first condition dealt with risk taking; this was assessed through playing a computer game call “Chicken” (Gardner, 2005, p. 627). The game required that participants make decisions on whether they were going to stop their virtual car when the street light turned yellow and if they didn’t, a brick wall would appear and they would crash (Gardner, 2005, p. 627). The second condition was risk preference; the Benthin Risk Perception Measure was used and it assesses both perception and risk preference of an individual (Gardner, 2005, p. 628). After they filled out the scale, they were given 5 hypothetical scenarios of risky behavior (such as having sex without a condom or getting into a vehicle with a drunk driver) (Gardner, 2005, p. 628). The last condition was risky decision making; this was just a questionnaire about risky behavior. This was a 2-part questionnaire; the first part allowed the participant to answer as they pleased but the second part contained the negative consequences attached with the scenario (Gardner, 2005, p. 629). The results showed that the younger the individual, the more likely they are going to follow through with risky behavior (Gardner, 2005, p. 629). Also, those participants in a group were more likely to take chances, such as in the car driving simulation, than if they were alone (Gardner, 2005, p. 629-630). People almost always think they perform actions because it is what they wanted to do yet

nearly none accept the idea that they may have done it because of another person's involvement.

In the next study conducted by Pronin, Molouki, and Berger (2007), they used 44 participants for their first experiment (p. 587). The participants were asked to answer a survey based on their own conformity; some examples in the questionnaire dealt with gestures of partners, celebrities' attitudes, attire, risky behaviors, etc. (Pronin, 2007, p. 587). The results of the first study showed that the participants view themselves as less susceptible than their peers to various forms of social influence (Pronin, 2007, p. 587). The researchers concluded after the first experiment that "people think they are less susceptible than others to conformity pressures" (Pronin, 2007, p. 587). The second experiment used 40 participants; the researchers approached students who had an iPod and asked them to complete a questionnaire (Pronin, 2007, p. 588). The results showed that the participants showed higher assessment of social desirability yet they also believed that they were less likely to be socially influenced than their peers (Pronin, 2007, p. 588).

The idea of conformity creates this uneasy feeling within most people, to ease that tension, we tend to seek comfort in the thoughts of others. The experiment conducted by Endler (1961) sought to assess conformity among college students after being given a series of personality tests (p. 273). There were four phases that each of the participant went through. The first phase was the participants' reactions to items on the conformity scale. The second phase, they were subjected to social pressure which all four of the confederates answered differently than the participant. The third phase was nearly the same as the second but the answers of the confederates were not shown. The last phase

allowed the participant to answer questions individually (Endler, 1961, p. 274). The results showed that in the second phase, conformity was at its highest followed by the third phase (Endler, 1961, p. 277). Also, the shocking part is, when the participant answered individually for the second time, the reactions to conformity were higher than in the first testing (Endler, 1961, p. 277). We tend to believe that we are individuals and that the presence of another makes no difference in the way we are to act.

When asked to think about certain aspects, we tend to look for the conformation of others in those times. In one of the studies conducted by Garcia, Weaver, Darley, and Moskowitz (2002), they wanted to see if an individual would provide helping behavior (p. 845). The first scenario dealt with a questionnaire of winning a dinner; the three conditions were, (1) the dinner was for you and 30 friends or (2) the dinner was for you and 10 friends, or (3) the dinner was for you and just 1 friend (Garcia, 2002, p. 845). At the end of the questionnaire, they were asked if they would donate money to charity (as a hypothetical question) and what percentage would they donate (Garcia, 2002, p. 846). The results showed that the more friends a person had with them, the less they would be willing to donate (Garcia, 2002, p. 846).

### 2.3 Use of Witnesses to Distort Answers

The first study is by Fiona Gabbert, Amina Memon, and Kevin Allan (2003), and they stated that the study:

“Explore [a] particular form of post-event information (PEI), namely, the PEI that may be acquired during a conversation with another witness to the same event”  
(p. 1).

The researchers deemed this notion, “memory conformity” (Gabbert, 2003, p. 1). There were two conditions in which participants could have been in; the first condition, they were alone for the video or, for the second condition, with another participant present (Gabbert, 2003, p. 3). There were 120 total participants; 60 were college-aged while the other 60 were older adults recruited from the nearby community (Gabbert, 2003, p. 3). The video of the same staged crime which consisted of two perspectives, both versions had parts that the other version didn’t contain (Gabbert, 2003, p. 3). In the dyad group, each participant viewed one of the two versions of the video; though they believed they viewed the same video, they actually saw both versions of it (Gabbert, 2003, p. 3). Questionnaires were used to gauge where the participants stood on their views; the individual participants completed the survey alone while those in dyads were told to work together (Gabbert, 2003, p. 4). In both situations of the co-witness condition, there was a lot more conformity to the view of the partner just because they had information they didn’t (Gabbert, 2003, p. 5). Also, with the co-witness condition, more participants thought that the individual in the video was guilty of a crime even if they had not witnessed that version of the video (Gabbert, 2003, p. 6). There have been other attempts to recreate this phenomenon, even on different levels.

This next study wanted to utilize the idea of Gabbert et al. (2003) that states that a person will unknowingly add information to their results based on the sayings of a witness. Wilson and French (2004) wanted to:

“Investigate the possibility that believers in the paranormal might show greater susceptibility to such memory distortion effects even when viewing non-paranormal events” (p. 470).

The experiment used a video with two different viewpoints of the same situation. There were two participants in each trial and each one got to see a different version of the video (Wilson, 2004, p. 470). The results showed that participants in a co-witness condition are more likely to add at least item into their answers (Wilson, 2004, p. 470). Also, most participants reported incorrect items of information because they could have only obtained that information through discussion with their partner (Wilson, 2004, p. 470).

To confirm the idea of witnesses playing a role in another's sense of reality, Fiona Gabbert examined the phenomenon again. In the next study, the researchers Fiona Gabbert, Amina Memon, and Daniel Wright (2006) try:

“To examine whether any characteristics of a dialogue (such as who mentioned discrepant post-event information first and whether this was disputed) would predict memory conformity” (p. 480).

This goes along with the previous study of Gabbert et al. (2003) in which the participants viewed a movie with a co-witness. In this study though, 66 participants were chosen and placed in a dyad (Gabbert, 2006, p. 481). There were two pictures being used and both members of the dyad saw a different version of the picture; both pictures were essentially the same with two distant differences (Gabbert, 2006, p. 481). There were a total of four different scenes with two different versions of all four scenes totaling eight cards. The participants were to look at the picture for 30 seconds then place the card faced down; neither participant knew that their partner had seen a different version of the scene (Gabbert, 2006, p. 481). They were then given a filler task for about 10 minutes and were brought together afterwards to discussing the pictures in detail. The participants then individually took a recall test for that particular scene that they just viewed; this went one



with all four scenes (Gabbert, 2006, p.481). There were four possible ways that the answers could have went, (1) the participant could correctly recall the item they've seen, (2) report both items in both pictures, (3) report neither item, or (4) incorrectly report the item that the partner had (p. 481). The results showed that if the participant spoke about their item in the picture first they were more likely to correctly report that item which contradicts the participant who received the information, it showed 35% of the time, they were more likely to report the item from their partner rather than their own (Gabbert, 2006, p.482). Gabbert et al. (2006) stated that "response order and conformity seem to have a strong association" (p. 482). More studies need to be done but the idea of having a co-witness seems to leave an unmistakable result.

Another test was done shortly after this experiment by other researchers to see if their findings would resemble those of previous experiments. The experiment conducted by James Ost, Hossein Ghonouie, Lorna Cook, and Aldert Vrij (2008):

"Was to examine whether confident co-witnesses (e.g. confederates) would lead to witnesses to incorporate inaccurate information into their post-event recall of a criminal event" (p. 25).

There were 2 factors used in each of the conditions; first was how many confederates would be with the participant (either one or three) and how confident those confederates were (either low or high) (Ost, 2008, p. 27). Sixty participants were chosen for the study; 12 males and 48 females. If one confederate was chosen for the trial, he/she entered the experiment room after the participant while if there were three confederates, one confederates entered first while the other two waited until the participant was in (Ost, 2008, p. 27). They were all to watch a video of a staged crime and were asked 8 questions

at the end of video (Ost, 2008, p. 27). After the video had concluded, the participant and the confederates were given a distractor task of a word search (Ost, 2008, p. 27).

Confederates were instructed to give correct answers to only four of the eight questions; they were also told previously how they were to answer depending on confidence (low confidence would answer 1 or 2 while high confidence would answer 6 or 7) (Ost, 2008, p. 27). The results stated that participants answered more correctly when the confederates answered correctly while there was a slight decrease when confederates answered incorrectly (Ost, 2008, p. 28). Also, participants considered themselves more confident with incorrect information if the confederates were also highly confident with their incorrect answers (Ost, 2008, p. 28).

#### 2.4 Conformity under Supervision

One of the most controversial studies done has to be the Milgram experiment. Its use of pain and distortion has raised ethical dilemmas since the beginning. Though, it has proven to be an extremely valuable asset to the idea of conformity. Stanley Milgram and his experiment on obedience are still widely used as a form of conformity. Milgram (1974) states, "Obedience is as basic an element in the structure of social life as one can point to" (p. 1). Milgram (1974) had an experiment set up at Yale University in order to test how much pain an ordinary person would inflict onto another under the direct instruction of an experimental scientist. In this experiment two people were to walk into a room where one would be assigned as a "teacher" and the other as a "learner" (Milgram, 1974, p. 1). They were told that they will be conducting an experiment on the effects of punishment on learning (Milgram, 1974, p. 1). The teacher was to administer an electric

shock to the learner every time a wrong answer (or no answer) was given and would have to increase the voltage on the machine. The teacher would always be the oblivious participant while the learner would be a confederate (Milgram, 1974, p. 1). In each case, the learner would be strapped to a chair hooked up to a machine that was said will shock the individual; though no actual shock was administered to the learner, the teacher believed that there was (Milgram, 1974, p. 2). As the experiment was under way, the learner would continually get wrong answers thus having the teacher to increase the amount of volts. Milgram (1974) would have the confederate (the learner) grunt at 75 volts; at 120 volts, have them complain loudly; at 150, this is where they would demand to be released; at 285 volts, the response would be an agonized scream. There were more effects allotted after each increase of voltage but too many to enumerate. Milgram states, “For the teacher, the situation becomes one of gripping tension. The manifest suffering of the learner presses him to quit: but each time he hesitates to administer a shock, the experimenter orders him to continue.” Milgram (1974) tried this experiment out at first with Yale undergraduates and found startlingly results, about 60 percent of them fully obeyed. He then wanted to test it out with “ordinary” people but soon found out that they too fully obeyed about 65 percent of the time (Milgram, 1974, p. 7). This obedience was in the face of an experimental researcher within distance of the teacher demanding that they continue on with the experiment. Though the experiment has a bad reputation, it has assisted psychology in ways that no one could have predicted. Its use of deception creates this illusion where normal people would “hurt” another based solely on the idea that they would not be responsible.

Another study that lent the idea of leadership controls behavior was that of Philip Zimbardo and his Prison Experiment. The research conducted by Philip Zimbardo (1971) was to take participants and place them into roles of either prison guards or prisoners (p. 243). Zimbardo (1971) stated:

“This research represents one of the most extreme experimental demonstrations of power of situational determinants in both shaping behavior and predominating over personality, attitudes and individual values” (p. 243).

The participants who played the role of guard were on for eight hours over three shifts while the prisoner was to play the role for 24 straight hours (Zimbardo, 1971, p. 244). The participants were normal, healthy American college males who were chosen after extensive interviews and tests (Zimbardo, 1971, p. 244). Uniforms were given to each set so as to become apart of the actual scenario. The results showed that the guards began to display physical and verbal aggression towards the prisoners and the prisoners that can be characterized as learned helplessness (Zimbardo, 1971, p. 245). The study was stopped prematurely because of the effects that the participants were displaying; it was ethically smart to have them stop it before one of the participants was injured. As stated by Reicher and Haslam (2006):

“Very quickly, some of the guards began to act brutally. They set out to humiliate the prisoners and to deprive them of their rights. Within days, some of the prisoners began to develop psychological disorders. So severe were the consequences that a study scheduled to last a fortnight had to be terminated after only six days” (p. 146).

The participants stated that “they learned many new and valuable lessons about themselves because the situation elicited reactions they believed to be ego-alien”

(Zimbardo, 1971, p. 249). Reicher and Haslam (2006) also stated that:

“...it illustrated a general tendency for people in groups to lose their capacity for judgment and agency and hence to become helpless to resist antisocial impulses.

Groups are inevitably bad for you. Groups with power inevitably abuse it”

(Reicher, 2006, p. 146).

A leader is a powerful person, especially when they accept full responsibility of what will occur. The dynamic shifts when a person is not at fault and the tendency to fulfill certain acts go unwarranted.

## 2.5 Conformity with the Thought of other Participants

Having to think about other participants in the room is a tough task to deal with, but when the other participants are just illusions created by an experimenter, it should create less of an anxious feeling. As stated by the researcher, Joseph Madden (1960), the study was:

“Designed to test judgments of beauty, a kind of judgment that would seem to be influenced extensively by personal considerations. This type of judgment obviously would be affected by social factors but would also seem to be strongly influenced by inner factors” (p. 269).

There were 80 male and female students chosen for the study (Madden, 1960, p. 271).

The experiment consisted of showing the participants a picture of a female face with varying levels of ‘attractiveness’ from homely being the lowest and beautiful being the

highest. The conformity portion came from having previous answers recorded on the cards that had the faces on them (Madden, 1960, p. 271). There were 2 conditions, the first one had 3 ratings of the picture and the second had 5 ratings before the participant had their turn (Madden, 1960, pgs. 273-274). It was found that when previous ratings were low, the participants were more likely to vote lower (Madden, 1960, p. 275). Having believed that other participants were involved is one form of deception that researchers use to allow conformity to show through.

The thought of having participants in a study is hard to manipulate, especially when the experimenter has to control all the results themselves. The study done by Gary Schulman (1967):

“Was designed to examine the effect of this characteristic [that of an experimenter being an authority figure and evaluating the participant’s behavior] in the Asch conformity situation” (p. 26).

Each participant was the last of four to respond; the experiment consisted of pressing buttons on a panel (Schulman, 1967, p. 28). The experiment consisted of three lines with one line matching; there were 30 trials in total with varying answers from the other three confederates (which were just answers by the experimenter and not real confederates) (Schulman, 1967, p. 28). The experimental conditions were, I: informational influence only, IG: both informational and group influence, IE: informational and experimenter influence, and IEG: informational, group, and experimenter influenced the participant (Schulman, 1967, pgs. 28-29). The results showed that when information is given and no experimenter or group members are viewing the participant, they will more likely conform to group answers. Also, when an experimenter is in view, the participant again is

more likely to conform to answers (Schulman, 1967, p. 32). It also showed that males, more than females, conform more in certain trials (Schulman, 1967, pgs. 31-32).

The study conducted by Santee and Maslach (1982) utilized 54 male and 64 female students as participants (p. 693). The participants were given a booklet at the beginning of the academic year dealing with an individuation scale (Santee, 1982, p. 693). The scale consisted of questions on self-esteem, private and public self-consciousness, social anxiety, and one's willingness to call attention to one's self (Santee, 1982, p. 693). After a few weeks later, they were brought back and placed in soundproof booths and there, they could only communicate through headphones (Santee, 1982, p. 693). At this time, 20 stories were introduced to them and the participants were asked to pick the best solution for the story out of three given solutions or they could add their own in (Santee, 1982, p. 694). The participants believed that they were the last to answer in that certain trial but were all last because the three answers that were given before theirs were pre-recorded. The results showed that when a participant believed he/she was given the answer of a peer, their conformity greatly increased (Santee, 1982, p. 694). Also, it seemed like females tended to conform more than the males did in this study (Santee, 1982, p. 694).

## 2.6 Conformity based on the Answers of Others

Conformity seems to be more relevant with other people having a say in the proceedings. Whether the person is correct or not leaves no difference on the mind of those who want to alleviate stress. The next study by Burzynski and Bayer (1977) deals with:

“Retaining a high level of experimental realism while, at the same time, increasing mundane realism by experimenting conformity in the environment of an urban motion picture theatre” (p. 216).

The researchers examined the idea that a person’s rating of a movie will be affected by the views of those who just witnessed the movie (Burzynski, 1977, p.216). There were 60 total participants, 30 male and 30 female, who were broken into the three experimental conditions. The first condition was the Positive Prior Information group; this had 6 confederates walk out of the movie theatre in front of the participants and give positive reviews about the movie as they left. The second condition was the Negative Prior Information group; this also had 6 confederates walk out in front of the participants but they gave negative reviews about the movie as they left. The last condition was the No Prior Information group; this had 2 confederates leave the theatre and stand in front of the movie poster of the movie while talking amongst themselves. The difference in the last condition was that the participants were unable to hear what the confederates were saying about the movie (Burzynski, 1977, p. 216). After that, the researcher distributed a questionnaire to the participants after the movie was complete (Burzynski, 1977, p.216). The results stated that those who have positive reviews prior to the movie liked the movie more than those who had negative reviews before the movie (Burzynski, 1977, p.217). The no prior knowledge group fell in between the positive and negative feelings group (Burzynski, 1977, p.217). Another face-to-face example comes from having to be apart of a group that must work together for a common answer. Yet, when some of the participants are confederates, having a say will mean little.



Having to face a group based on a decision is difficult in itself, but if the other group members are there to throw you off, it can be an ever greater task. With the next article, the author also tries to utilize the idea of conformity according to Solomon Asch. Venkatesan (1966) states:

“A number of experiments have demonstrated that with sufficient group pressure it is possible to influence what the individual believes he perceives” (p. 384).

The hypotheses of his experiment state that when no objective standards are presented, the individual will conform when exposed to a group while when an individual is induced to compliance, the individual will have a tendency to conform less (Venkatesan, 1966, p. 385). The experiment consisted of showing participants three suits. Each suit was exactly the same but had all identification means removed (Venkatesan, 1966, p. 385). The participants were told that the three suits were from three different manufactures, that there were quality differences between them, experienced tailors were able to tell which was best, and to see if consumers would be able to pick the best one (Venkatesan, 1966, p. 386). There were three conditions; the first was the Control Condition, individuals would work on their own and pick their choice of the best suit. The second condition was the Conformity Condition where one participant and three confederates would look at the suits but confederates were told to pick a certain suit when asked. The last condition was the Reactance Condition where the participant was again partnered with three confederates but the responses of the confederates were different. The confederates here were told to give their certain answer to the group before actually stating it to the experimenter (Venkatesan, 1966, p. 386). The results showed that those in the control group randomly picked a suit without pressure form the group. With the conformity

group, the participant picked the group's answer about 50 percent of the time. Within the reactance group, the participant deviated from the group answer more times than not with the chance of picking one of the other two suits being very high (Venkatesan, 1966, p. 386-387). As the results show, a face-to-face interaction can definitely stir the participant to follow certain pathways most of the time.

The study conducted by Joel Savell and Gary Healey (1969) dealt with participants being paired with a confederate for what they thought was a test of visual discrimination (p. 318). The figures presented were in pairs such as in straight lines, triangles, or rectangles that were seen on a wall 10 feet away through an overhead projector (Savell, 1969, p. 319). The participants were asked to assess whether figure A or B was larger or longer. The first independent variable was whether the partner would agree or disagree with the participant; the second was how many times the confederate agreed with the participant; and the third dealt with the public notice of the participant conforming or not conforming (Savell, 1969, pgs. 319-320). The results showed that the confederates who disagreed with the participant were seen as less favorable than those who agreed (Savell, 1969, p. 322). It's always difficult to answer a person face-to-face but what happens when an individual is in the same room with others but cannot see them.

This next study uses both the face-to-face concept as well as an anonymous ideal. When comparing the two, the idea of conformity could show a difference. The study conducted by Toby Robertson (2006) had participants engage in a computer-mediated group discussion (p. 687). The participants were either identified through a picture of themselves or anonymously without having a picture up during the time in front of the

computer (Robertson, 2006, p. 687). The first condition the participants had to unscramble sentences; the second condition, the participants had to estimate the amount of squares on paper; the third wanted to measure the strength of identity; the fourth dealt with manipulating anonymity among a computerized discussion; and the last condition was just to prepare the researcher for future considerations (Robertson, 2006, pgs. 689-690). The results showed that participants who were anonymous or unidentifiable were less likely to conform to the group (Robertson, 2006, p. 691). Also, attitudes changed from when the participant was anonymous to the time they were being seen by the group (Robertson, 2006, p. 692). Now, let's look at when participants are just focused on the anonymous rather than the face-to-face aspect.

The first experiment conducted by Bem (1975) wanted to examine if more masculine and androgynous participants would conform to more masculine behavior than feminine participants (p. 637). The experiment dealt with humor; participants were placed in soundproof booths that contained microphones and earphones (Bem, 1975, p. 637). They were to rate cartoons on their funniness and they would be called at different points during each trial (Bem, 1975, p. 637). When asked, each participant had to say their answer into the microphone and by pressing a button on a panel within the booth. The participants would hear the answers of the other participants through their earphones though the other participants were confederates (Bem, 1975, p. 637). There were 36 trials in which confederates would answer incorrectly to see if the participant would conform. The results showed that the masculine and androgynous participants conformed less than the feminine participants (Bem, 1975, p. 638).

The next study dealt with how a participant's level of validation is affected by the reactions to certain members (called targets in this study) based on either agreement or disagreement (Levine, 1977, p. 214). The study dealt with four individuals; one was the participant, two were confederates that either agreed or disagreed, and one target who (1) constantly agreed, (2) constantly disagreed, (3) disagreed then agreed, or (4) agreed then disagreed with the participant (Levine, 1977, p. 216). The experiment was conducted with the use of "an electrical signaling device which simulated the group members' responses" (Levine, 1977, p. 217). The four booths were adjacent to one another and on them had four rows of nine lights which signaled on the agreement-disagreement scale (Levine, 1977, p. 217). The procedure dealt with the participant watching a video about a troubled youth who was constantly in trouble with the law. Afterwards, the participants then answered a question about the video that stated that the child in the video would benefit more from psychological help than imprisonment (Levine, 1977, p. 217). Each member would cast their vote along the guidelines that they were to follow, except the participant who voted as they pleased. There were 154 participants who took part in the study. The results showed that when the 2 confederates agreed with the participant, the attractiveness of the target (the other confederate) was higher when they constantly agreed (Levine, 1977, p. 219). Also, when the 2 confederates were told to disagree with the participant, the attractiveness of the target was higher when they constantly agreed again (Levine, 1977, p. 219).

In the study conducted by Eva Walther, Herbert Bless, Fritz Strack, Patsy Rackstraw, Doris Wagner, and Lioba Werth (2002) wanted to:

“Investigate how false memory reports provided by anonymous group members affect individuals’ recognition. Participants were presented with a series of salient and non-salient objects and recognition memory was subsequently assessed...” (p. 793).

The researchers stated that the judgments of others would be more highly effective if there is no other information that could resolve uncertainty for the participant (Walther, 2002, p. 794). The experiment consisted of a set of black and white slides with non-salient items such as kitchen utensils or tools (e.g. whisk or hammer) while the salient items (e.g. banana, shoe, or radio) were used at other times (Walther, 2002, p. 798). The slide was presented for 1.4 seconds; each slide was presented on a computer screen with the answers of confederates already indicated. The results showed that if one of the confederates would disagree with one of the answers, the participant would be likely to answer incorrectly (Walther, 2002, p. 802). Also, if all confederates answered correctly, the likelihood of the participant also answering correctly greatly increased (Walther, 2002, p. 802).

## 2.7 The Line Judgment Task

Solomon Asch has been one of the most influential researchers of the idea of conformity. Though he may not have had the idea in mind when proceeding with some experiments, his findings are nothing short of a new phenomenon that have left people wanting to try and duplicate those findings. When a person is placed in an experiment with a bunch of other participants, or so they think, will the individual stay in line with their assumptions or buckle under the pressure. Asch (1955) states:

“The tests not only demonstrate the operations of group pressure upon individuals but also illustrate a new kind of attack on the problem...” (p. 19).

The line judgment experiment used 7 to 9 confederates; all males and of college age (Asch, 1955, p. 19). The experiment was to take place in a classroom and informed the participants of the reason for the experiment; Asch states that they will be comparing lines. On one of the card, there is a black vertical line and on the other card are three black vertical lines of varying lengths (Asch, 1955, p. 19). One of the three lines matches the one line on the opposite card; the lengths of the lines vary between three quarters of an inch to an inch and three quarters (Asch, 1955, p. 19). The first and second trials open as if nothing is wrong but on the third trial, the confederates begin to answer incorrectly. The participant begins to question himself as the majority continues to vote in unanimous fashion while he is the lone dissenter (Asch, 1955, p. 20). The participant must know choose between what he knows to be correct or go against a large majority.

In all, there are 18 total trials; 12 of the trials, the majority have been instructed to answer incorrectly (Asch, 1955, p. 20). Of the 123 participants that were tested, about 37% of the time, the participant went against their judgment and agreed with the majority (Asch, 1955, p. 20). There were about 25% of participants who never conformed to the majority (Asch, 1955, p. 20). It shows that people, when faced with a large opposition, will most likely shy away from certainty in order to relieve an inner tension.

There have been a few researchers who've tried to replicate the Asch line judgment task. In the study conducted by Amir (1984), he mirrored the Asch line judgment task that was done in the 1950's (p. 188). He had two groups; one was the experimental group which consisted of 40 males and 40 females and a control group,

which consisted of 60 males and 60 females (Amir, 1984, p. 188). The results showed that the control group conformed only about 5% of the time while the experimental group conformed more than 29% of the time (Amir, 1984, p. 188). The researcher also noted that neither males nor females were more susceptible to conformity; both showed near equal levels of conformity (Amir, 1984, p. 188).

Another example, Frager (1970) found 128 participants from an elite school in Japan to volunteer in his study (p. 204). The one participant, prior to the experiment, was asked to answer a survey; this being done while three confederates were also answering a survey in a common area (Frager, 1970, p. 205). The experiment was similar to Asch's line judgment task done in the 1950's; there were 10 comparison trials with one line matching one of three lines of varying lengths (Frager, 1970, p. 205). It was found that 54 participants yielded three or more times; 20 participants yielded twice; 20 more subjects yielded once; and 34 participants did not conform at all (Frager, 1970, p. 206).

The experiment conducted by Larsen, Triplett, Brant, and Langenberg (1979) used the procedures and methods just as followed by Asch (p. 260). The difference was that they stated that there will be a difference between conformity and a person's locus of control; an internal locus of control states that control resides within them while the external locus of control is determined by factors such as luck or fate (Larsen, 1979, p. 260). The results showed that those who had an external locus of control conformed more than those who had an internal one (Larsen, 1979, p. 261).

Many believe that Asch's study would be unable to work across different age groups and the next study sought to examine that idea. Walker and Andrade (1996) followed the concept of Asch's line judgment task with different age groups; the age

groups were 3-5 years old, 6-8 years old, 9-11 years old, 12-14 years old, and 15-17 years old (p. 369). Their results showed that as the age groups got older so did the lowering of conformity levels. The 3-5 age group conformed about 85% of the time; the 6-8 age group conformed about 42% of the time; the 9-11 age group conformed about 38% of the time; the 12-14 age group conformed about 9% of the time; the last group, the 15-17 age group, never conformed (Walker, 1996, p. 371).

While some replicate the experiment exactly, others attempt to use deceit in the way the confederates are used. The participants in the study conducted by Lamb (1980) were led to believe that they were to take part in an experiment with 6 others participants but they were alone (p. 14). The participant was placed into a cubicle and heard taped responses from confederates who they believed to be the other participants (Lamb, 1980, p. 14). The experiment consisted of Asch's line judgment task in the 1950's. The results showed that a good majority of the participants conformed at least once and that more males than females conformed more (Lamb, 1980, p. 15).

With the next experiment, the authors Mussen and Kagan (1958) attempted to recreate the exact study of Solomon Asch and his line judgment. The authors not only wanted to see if the study could examine similar results but also incorporate the use of parenting styles that the people grew up with (Mussen, 1958, p. 57). As stated by Paul Mussen and Jerome Kagan (1958):

“Extreme conformists are more authoritarian; more submissive, compliant, and accepting of authority; less tolerant, less socially active, and less able to accept responsibility” (pg. 57).



The method of the experiment started with the subjects filling out answers to stories based around themes of neglect or punishment; this placed the students into one of two groupings, whether they are independent or conformists (Mussen, 1958, p. 58). Then one participant was to enter a room with four other individuals who were confederates. The four confederates were told which of the twelve trials they were to get wrong and which they were to answer correctly; there were five trials in which they answered correctly and seven when they answered incorrectly (Mussen, 1958, p. 58). The experiment consisted of two cards, the one card had a line of a certain length and another card had three lines of varying lengths with one line matching the line on the opposite card. The results showed that most of the participants had little to no parental punishment though conformity did seem to follow those who had at least a little bit of parental punishment (Mussen, 1958, p. 60). Those with zero parental punishment were more likely to be independent than those who didn't (Mussen, 1958, p. 60).

Here the authors attempted to utilize the Asch line judgment experiment but with different nations being involved. Bond and Smith (1996) states that:

“He [Solomon Asch] felt that conformity can ‘pollute’ the social process and that it is important for a society to foster values of independence of its citizens” (pg.

111).

Since the Western society is deemed to be an individualistic culture, we should in theory, show individualistic tendencies when any type of conformity should arise. The authors did a general research of previous experiments that have included many of the articles that dealt with Asch and his line judgment. They researched back from 1952 until 1994. To be included in their finding, articles have to meet certain criteria; (a) judging which of

three comparison lines was the same length as the standard, (b) used group pressure in which the participant was confronted with erroneous responses by the majority, (c) the participant is alone against a group majority, etc. (Bond, 1996, p. 116). The most interesting findings of their research claims that “conformity was significantly higher [when], (a) the larger the size of the majority, (b) the greater proportion of female respondents, (c) when the majority did not consist of out-group members, and (d) the more ambiguous the stimulus” (Bond, 1996, p. 124). They also found that, since the start of Solomon Asch’s study, the number of conformists in the Western societies has declined (Bond, 1996, p. 124). The last portions of the authors’ research, “revealed [that] significant relationships confirming the general hypothesis that conformity would be higher in collectivistic cultures than in individualistic cultures” (Bond, 1996, p. 124).

Confederates could be used in multiple ways. The next study attempts to try different scenarios with them. The authors Allen and Levine (1968) state that:

“When one stooge [confederate] dissented from the incorrect group by giving the correct answer, conformity decreased significantly from approximately 32 percent to 5 percent” (p. 138).

In their research, they used five experimental conditions (Allen, 1968, p. 140). In four of their conditions, the fourth confederate would deviate from the group norm and the first three confederates would always answer the same way in all trials (Allen, 1968, p. 140). The first condition consisted of no dissent; in the second condition, the fourth confederate would answer correctly; the third condition, the fourth confederate would answer incorrectly; the fourth condition, the fourth confederate would answer more correctly than not; and in the last condition, the fourth confederate would answer more incorrectly

than not (Allen, 1968, p. 140, chart). The results showed that when the confederate answered correctly or incorrectly, the participant (always seated last) would most likely answer to his/her true beliefs (Allen, 1968, p. 143).

There have been a few researchers who have agreed with the idea of conformity. As stated by Ridgeway (1978):

“...all other things being equal, a group will be more willing to award status to a member perceived as group-oriented in motivation than to one seen as self-oriented” (p. 177).

It is claimed that when most people are given the chance to conform, they will to reduce the inner tension that they experience. Scheff (1988) states it best with his claim that:

“There is wide agreement that conformity is encouraged by a system of sanctions: we usually conform because we expect to be rewarded when we do and punished when we don't” (p. 395).

When a participant is found to be against conformity, the emotions play a huge role.

Scheff (1988) stated:

“...played by emotions: subjects who yielded to the majority were attempting to avoid the embarrassment (shame) of appearing different from the group” (p. 403).

Also, Ridgeway (1978) states it best when he claims:

“...it seems reasonable that, under most circumstances, nonconformity, either of the anticonformity or independence type, will be interpreted as more self- than group-oriented in intention. On this basis, nonconformity would have a more negative than positive impact on status attainment” (p. 178).

Not everyone will agree with the thoughts of conformity. There have been skeptics of this study since it first came about. Though, of course, with any study, there will be critiques of it and some have tried to debunk his findings. There have been some critics that refute Asch's findings simply because those findings weren't exactly what Asch was looking for. As stated in an article by Friend, Rafferty, and Bramel (1990):

“Ironically, many accounts of Asch's work draw from it the very assertions he was intending to refute. He concluded that he had convincingly demonstrated powers of independence under certain highly demanding conditions. What we find, though, is that most writers have portrayed his findings as evidence that individuals are predominantly weak in the face of the social pressures he studied” (p. 30).

The researchers also claim that most textbooks and articles only reported the percentages of those participants who conformed (33%) and not the 67% that didn't (Friend, 1990, p. 36 chart).

## **Chapter 3**

### **Methodology**

#### 3.1 Introduction

With this particular experiment, the researcher wanted to see if participants would conform to the group response even though the answers may be incorrect. The 47 participants chosen for this study were undergraduate students at Rowan University who were taking a psychology course. The researcher contacted two psychology professors and went into their classrooms at Rowan University. The researcher asked the students within those classes to participate in his study; the researcher's study was a modified version of Solomon Asch's Line Judgment Task. It consisted of twelve trials of line comparisons in which some of the answers that confederates gave were correct and others were incorrect. The study was conducted in paper format and had five confederate answers within each of the twelve trials. Each participant within the class was informed about the study prior to the packet of trials being passed out. The use of the confederate answers was to gauge how the participant would answer based on the group majority. The sole condition that the participants could be in was the paper format of the modified Asch study. The only condition dealt with a non-verbal answering of the questions and each participant worked individually. The results were tallied and placed into SPSS with the analytic use of the Dependent Samples/Repeated Measures t-test.

### 3.2 Participants/ Subjects

The 47 participants were undergraduate students from Rowan University. The participants were students within the classrooms of both of the psychology professors. Each participant was 18 years of age or older; to assure that they are of age, they needed to check a box that declared them being of age. Every student within the class had the opportunity to participate (and were the given the option not to participate). All participants were asked to sign an informed consent that did not contain any personal information about them (except for their age and their signature).

### 3.3 Design

#### Variables

Independent Variable: (1) The packet of line comparison tasks within the twelve trials.

- The packet of trials had answers that were from five confederates that were told by the researcher when to answer correctly and when to answer incorrectly.

Dependent Variable: (1) The answers that each participant wrote down to each of the twelve trials within the packet.

- The results depended on how many times that the participants answered incorrectly to the incorrect trials compared to the incorrect answers of the correct trials.

#### Reliability/Validity of the measures

Reliability, according to psychology.about.com, refers to the consistency of a measure. A test is considered reliable if we get the same result repeatedly. With this

experiment, reliability has been inconsistent throughout the time, especially since it first began in the 1950's. Some researchers have found similar results to that of Asch (which states that people conform more when in the presence of the group) while other researchers have debunked those same findings. There has been a steady decrease in conformity since the time the experiment started. With the researcher's study being modified to nearly the same as Solomon Asch, the results were affected by the knowledge of the participant. Some questions that did arise when conducting the experiment were: Did the participant know about the Asch experiment previously? Did they conform because they wanted the researcher to be happy? Did they purposely answer correctly/incorrectly all the time because they knew the experiment?

Validity, according to [psychology.about.com](http://psychology.about.com), is the extent to which a test measures what it claims to measure. For the purpose, the measure of the results was based on the number of incorrect responses by a participant as compared to the answers given by the five confederates. To say that the incorrect responses of the participant were solely because of the answers of the other group members is entirely false. The researcher expected that most of the answers of the participants would be incorrect based on the answers of the confederates yet there could have been other confounding variables that were unaccounted for. Some variables that the researcher could not account for are: personality traits (whether they were followers or leaders), family ideal (individualistic or collectivistic), or even the mood they were in (whether they just wanted to get the experiment finished or if they were truly participating).

### 3.4 Procedures

The researcher started the study by creating a set of lines within the Paint program found on most computers. The researcher created twelve unique line comparison tasks and placed them in PowerPoint. Once all trials were set, he created another slide within PowerPoint to use as the answer key (this was numbered from 1 to 6 with spots underneath them so participants would be able to write their answers). The researcher then alternated the trial and answer key portion within the PowerPoint program. The researcher then printed out the slides (four slides to a page so it looked as if two trials and two answer keys were next to one another). Once the trials were all printed out (six pages in total), he set up an answer list of correct and incorrect answers to the trials. The answers the researcher wrote down were then given to five of his friends to place those answers (in different handwriting) in one of the five slots in each of the answer keys. Once those trials were completed, the researcher made copies of the packet. The researcher then had to find a way to distribute the packets and emailed two professors who taught psychology at Rowan University.

After the researcher was given permission to use certain classrooms by the professors, he made an appointment with them to visit their classrooms. Once he arrived at their classrooms, he described the purpose of his study without giving the information revolving around the deceit he needed to use. The researcher stated that the study was for his master's thesis and began describing the packet. The researcher stated that the packet contained twelve trials of line comparisons. The researcher stated that the trials were separated two to a page; there were two boxes per trial, one box had a target line and then three lines to the right of it with one of those three lines matching the target line. When



the participant found the line that matched the target line, the participant then found the corresponding letter (found underneath the matching line) and placed the letter in the answer key.

The box directly to the right of the targeted line was the answer key box. This is where the participant had to write down the answer they believed to match the target line. Within the answer key box were five answers by confederates. The answers were numbered 1 through 5 and the 6<sup>th</sup> spot was vacant for the answer of the participant. For each of the trials, the confederates were told when to give correct answers and when to give incorrect answers. The total number of incorrect answers totaled at five while the total of correct answers was seven.

The researcher then handed out the informed consent which asked the participants if they were at least 18 years of age or older and if they agreed to the terms of the study, they signed their names and dated it at the bottom of the page. Once all the informed consents were picked up by the researcher, he then passed out the line comparison packet to those who filled out the informed consent. Once all the participants were finished with their packet, the researcher then retrieved them from the participants.

Once all the line comparison packets were retrieved, the researcher passed out the debriefing statement. This is the portion where the participants were informed about the real reason for the study and how the study was a modified version of the Solomon Asch studies done in the 1950s. Also within the debriefing statement was the option for counseling just in case some anxiety or depressive feelings arose from the study.

### 3.5 Type of analysis

The type of analysis that was used was the Dependent Samples/Repeated Measures t-test. Since the participants were measured separately from one another, their results were compared against one another thus the independent factor. Also, this analysis was chosen because the results were separated into two types of answers, those the participants got incorrect based on the incorrect trials of the confederates and those the participants got incorrect to the trials that the confederates answered correctly. The results were presented in percentage form; the number incorrect out of both scenarios was calculated.

### 3.6 Summary

The participants and their answers are what made this experiment. If they allow for the group pressure to succumb then the results will be more similar to those that Solomon Asch found in the 1950's. If not and they answer more individualistic, then the results will provide the researcher with information on how more modern college-aged students answer based around the incorrect responses of others. The experiment was set to have the participant conform to the responses of the confederates yet not every unseen variable could go unnoticed. With reliability and validity of this experiment having been questioned in the past, the basis of this experiment will go along with those results found previously. The results of the condition will hopefully show a difference and will lend support to those experiments previously done that have shown that a lone participant will conform to a group majority.

## Chapter 4

### Findings

As stated in Chapter 3, the researcher used a Dependent Samples/Repeated Measures t-test to assess the data collected from the participants. The way the data shows the results are through the mean (averaged) scores and by Dependent Samples/Repeated Measures t-test scores. In Table 1, the scores represented are showing the mean percentages of each of the scores. The first variable represented in Table 1 was the number of incorrect responses by the participants to the trials that were incorrectly answered by the confederates. Table 1 indicates that there was an average of 33.617% of incorrect responses to the trials by the participants that were incorrectly answered by the confederates. Variable 2 represents the number of incorrect answers by the participants to the trials that were correctly answered by the confederates. Table 1 indicates that there was an average of 12.767% of incorrect responses to the trials by the participants that the confederates answered correctly.

Table 1: Mean Scores

		Paired Samples Statistics			
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	VAR00001	33.6170	47	23.99507	3.50004
	VAR00002	12.7670	47	19.58634	2.85696

Using the data in Table 1 alone indicates that there is a significant difference between the answers of the participants on the incorrect trials to the answers of the participants on the correct trials. Table 1 alone cannot prove that there was a significant discrepancy between the answers of participants in either the correct or incorrect trials. With Table 2, the results show that this was in fact a significant discrepancy in the two scores. As seen in Table 2, the significance was .000 (significance is .05 or less). Table 2 states that participants answered an average of 20.85% incorrectly to all the trials in the packet and not just to the trials answered incorrectly by the confederates. With Table 2 also stating the t-score as being 5.2 along with the significance being  $<.05$ , the hypothesis can be confirmed.

Table 2: Dependent Samples/Repeated Measures t-test

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	VAR00001	20.85000	27.48867	4.00963	12.77902	28.92098	5.200	46	.000
	VAR00002								

The results will be further explained in the next chapter along with reasoning for further exploration into the subject of conformity.

## **Chapter 5**

### **Summary and Conclusions**

#### 5.1 Summary

With the idea of being within a Western society and thinking more in individualistic terms, the notion of conformity should be highly reduced. We often fail to realize that the power of another has a greater impact on our thought processes than we give credit for. We assume we won't answer according to another person because we feel that we are less susceptible to the ideas of another. In most instances, when a person has to go against a group of peers, they will tend to stay quiet more times than not.

With the results of Solomon Asch's Line Judgment Task in the 1950s stating that about 30% of people would side with a group majority is astounding. Asch's study was conducted over 60 years ago so the researcher wanted to see if similar results would occur if the task were modified slightly to fit the new era.

#### 5.2 Conclusions

With the results showing a much greater significance between the participants' answers to the incorrect trials compared to the correct trials, the results lend support to those results found by previous Solomon Asch studies of the 1950s. Using Table 1, the percentages of both trialed sections seem to lend support to the hypothesis stated earlier; the hypothesis stated that the participants would be more likely to answer incorrectly to

the trials answered incorrectly by the confederates as compared to the incorrect responses to the trials where confederates answered correctly.

With nearly 34% of the incorrect responses by participants to the incorrect trials by the confederates, the results can lend support to the previous studies of Solomon Asch. This is compared to the near 13% of incorrect responses of the participants to the correctly answered trials of the confederates. The 34% represents an average of one and half incorrect answers by the participants out of the totaled five trials that were answered incorrectly by the confederates. The 13% represents an average of less than one incorrect answer by participants out of the totaled seen trials that were correctly answered by confederates.

Using Table 2 with the Dependent Samples/Repeated Measures t-test stated that the two-tailed significant level was .000. This is significant using  $<0.5$  since the results show that the significance level was below that threshold. The significance level states that there was a difference between the answers of the participants in the incorrect trials answered by confederates as compared to the correct trials that were answered by the confederates. Along with the significance level, the t-score is 5.2. To make the significance important, the t-score has to be greater than 5 if using the  $<.05$ . With the results found in this study, the significance level on almost all aspects of the measures seem to agree with the hypothesis in the mindset that people will be more likely to conform to the answers of others.

### 5.3 Limitations/Recommendations

This study was limited in scope as well as time. If the amounts of both were scaled more for a generalized population, the results found could be more accurate (in a Western society mostly). With the results, the researcher cannot assume generalized results for a population because continual data will need to be collected in order to gain that knowledge. Since the results were helpful in understanding the mindset of a college student within their undergraduate psychology course yet the idea remains, would the same affective nature occur if the study were done in a setting not classroom based?

One reason that could be seen as a confounding variable within this study was that of the participants being enrolled in a psychology course. The study of Line Judgment done by Solomon Asch is taught in psychology classrooms all over the country. To find that not one student will know the concept of Asch's conformity is hugely impossible. In that mindset, maybe broadening the horizon to participants not associated with the field of psychology would bring about better results. This could lead to more participants assuming the role of a conformist rather than an individualistic thinker. Along with this concept, the researcher wouldn't be just adding diversification of selected majors but also adding to the sample size of the study. With this addition, it still will not be entirely represented within the population since the participants are still students within a college/university setting. Thus, adding in a variety of participants would help generalize the results to a more diverse population.

Another recommendation would be to vary the population. This study was based around the one population of students attending a four-year university. The range of ages probably didn't vary as much as it would have if the study was done in the general population. Being able to expand the population in multiple areas would create a more

generalized results section. Having the ability to expand to different neighborhoods or sections of the state may receive higher or lower levels of conformity just based on the surroundings. To find the effect of conformity from the standpoints of rural/urban, socioeconomic statuses (quality of schools), and diversity (difference in cultural upbringings) would be a good start to following up this type of study. This would help with the sample size as well as varying the age levels within a certain population. The greater the sample size among a population, the better the results will have upon the world of science.

Another variable that could be included if the study were to be done again was that of the verbal aspect. The study did show that there were instances of conformity based on the answers of the confederates on the paper task. In order to get a better analysis of the study, a researcher should try to implement both forms of the verbalized aspect (verbal and non-verbal). This study showed the non-verbal side yet failed to assess the verbal side. If time isn't a factor, maybe a replication of the old Solomon Asch studies would be sufficient (having one participant and 3-5 confederates answering correctly and incorrectly at certain times while all in the same room). This included factor could be used against the verbal aspect and analyzed against one another to show differences between subjects who were apart of the verbal condition and the non-verbal condition.

There have been numerous variations of the Solomon Asch Line Judgment Task all across the world and at different periods of time. The one seemingly constant detail is that individuals will agree with another to help ease their internal pressures. With continual study and experimentation, the results may change over time but until then, the



results of individualistic conformity will remain consistent with the findings of Solomon Asch in the 1950s.

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## Appendix A: Informed Consent

Prior to participating in this study, I agree that I am at least 18 years of age.

Yes, I am at least 18 years old \_\_\_\_\_ No, I am not 18 years old \_\_\_\_\_

If No was checked, please inform the head researcher, Mark Roman, before continuing on with the Informed Consent.

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-

I agree to participate in a study entitled "Vision Accuracy: Comparisons," which is being conducted by Graduate Student Mark Roman under the supervision of Dr. Roberta Dihoff of the Psychology Department, Rowan University.

The purpose of this study is to evaluate the accuracy of vision among college students. The data collected in this study will be combined with data from previous studies and will possibly be submitted for publication in a research journal.

I understand that I will be required to answer questions pertaining to the vision accuracy test, and I will be assigned to work individually. My participation in the study should not exceed 15 minutes.

I understand that my responses will be anonymous and that all the data gathered will be confidential. I agree that any information obtained from this study may be used in any way best for publication or education provided that I am in no way identified and my name is not used.

I understand that there are no physical or psychological risks involved in this study, and that I am free to withdraw my participation at any time without penalty.

I understand that my participation does not imply employment with the state of New Jersey, Rowan University, the principal investigator, or any other project facilitator.

If I have any questions or problems concerning my participation in this study, I may contact Dr. Roberta Dihoff at (856) 256- 4500 Ext. 3783 or the head researcher, Mark Roman, at romanm88@students.rowan.edu.

\_\_\_\_\_  
(Signature of Participant)      (Date)

\_\_\_\_\_  
(Signature of Investigator)      (Date)

### **Appendix B: Debriefing Statement**

Solomon Asch first conducted a similar experiment in the 1950's and this study was a modified version of that experiment.

The five answers that were on the sheet were from confederates (those who were in on the experiment) and were told when to give correct and incorrect answers.

I ask that you do not reveal any information to any peers as they might also be used in my study. If any stress or anxiety from the experiment is present, my supervisor, Dr. Roberta Dihoff, and I ask that you please contact Rowan University's Counseling and Psychological Services Center.

The Center is located on the top floor of the Savitz building. They are available every weekday (Monday through Friday) from the hours of 8:30 a.m. until 4:30 p.m. They are also available during the evening on Wednesdays only from 4:30 p.m. until 7:00 p.m.

The Service Center's phone number is (856) 256-4222.

Also, as a participant, you could withdraw from the study even after the study has been completed and all files of that particular trial will be removed, erased, and/or destroyed.