ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202203_5(3).0069

Obedience to Authority: Anxiety Status and Authority Type

Xinhe Shen[1, a]

[1]Berkshire School, Sheffield, 01257-9672, United States

[a]maggie_shenn@outlook.com

Abstract

The COVID-19 pandemic increases public anxiety levels and inclinations to seek guidance from authorities, both political leadership and charismatic celebrities. This paper explores the correlation between authority types and public obedient behaviors and anxiety levels. Though Stanley Milgram explored the relationship between obedience and authority as early as 1965, it was conducted under complex social and cultural background as well as numerous confounding factors. This work is a replication of the Milgram experiment under the cover of sensory punishment's influence on working memory. Moreover, to address the ethical issue, this experiment replaces electric shock in the Milgram experiment with a milder punishment of taking bitter drinks so that participants are not exposed to psychological struggles presented in the original experiment. Considering charismatic and legal-rational leaders as the two most effective authority types, we hypothesized: 1) under legal-rational leadership, people will perform a higher degree of obedience than under charismatic leadership; 2) people with higher anxiety level will perform a higher obedient rate under both authority types; 3) when people are living at high anxiety states, they will be more willing to obey charismatic leadership.

Keywords

Obedience; Authority Type; Public anxiety level.

1. Introduction

The ongoing pandemic, COVID-19, is much more than a health crisis—it is a human, economic, and social crisis [1]. Facing a new disease and public health actions such as social distancing significantly increase public anxiety levels and inclinations to seek for authorities [2]. As political leadership has a great impact on the public, people are also increasingly obedient to charismatic celebrities under the context of digitalization. Lady Gaga attended the MTV VMAs 2020 with theatrical masks and advocated "masking up", which received more positive responses than the public health policies made by the government [3]. Moreover, celebrity-led initiatives are also as effective, if not more, as political officials' policies at soothing the public's anxiety [4]. Authority types seem to have an impact on public obedient behaviors as well as public anxiety levels.

As early as 1965 when Stanley Milgram conducted the Milgram experiment, social scientists have been enthusiastic about the relationship between obedience and authority. At the same time, numerous replications of the Milgram experiment have been conducted; questions and concerns have been raised about the experiment. In his original experiment, Milgram concluded that people tended to obey authority, who in this case is identified as a legitimate authority, to the extent of killing another innocent human being [5]. However, a later study suggests that the outcomes of Milgram's experiment are distorted by the intellectual, cultural, and gender contexts of Cold War America under which it was conducted [6]. This finding leads many social scientists to reconsider the deficiencies of settings and contexts of Milgram's experiment. Many

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202203_5(3).0069

factors are found to be potential outcome-influencers in Milgram's experiment, such as the authority's directiveness, legitimacy, and consistency [7]. Authority's personality traits, which can be categorized into different authority types, and its correlation with obedience is therefore brought into the discussion. Rather than the traditional stereotype of aggressive, demanding, dominant, and critical authority type, charismatic leadership, depicted as supportive, nurturing, and considerate, is claimed to influence followers in ways that are "quantitatively greater and qualitatively different" [8]. However, in an experiment asking participants to associate obedient behavior with possible explanations, expert and legitimate power is still considered to be the most likely explanation for the compliance of a subject [9].

In this work, we analyze the correlation between authority type and public anxiety and obedience level. As charismatic and legal-rational leaders are two effective leadership types, the anxiety level is intertwined with authority types as well, leading to our three hypotheses: 1) under legal-rational leadership, people will perform a higher degree of obedience than under charismatic leadership; 2) people with higher anxiety level will perform a higher obedient rate under both authority types; 3) when people are living at high anxiety states, they will be more willing to obey charismatic leadership. This experiment is a replication of the Milgram experiment under the cover of sensory punishment's influence on working memory (Oever, Weerd & Sack, 2020). To address the ethical issue, we replace electric shock in the Milgram experiment with a milder punishment of taking bitter drinks so that participants are not exposed to psychological struggles presented in the Milgram experiment.

2. Method

2.1. Participants

In order to avoid participants' existing knowledge of Milgram's experiment as a confounding variable, we exclude all participants of social science major, including anthropology, integrated social sciences, LSJ (Law, Societies & Justice), history, political science, psychology, philosophy, and sociology. Participants are told that they are engaging in an experiment studying whether sensory punishment can promote working memory [10]. Zung Self-rating Anxiety level Scale by Zung is used in this experiment to stratify all our participants, college students age 18 to 24, into different level groups based on their anxiety level in the past several days [11]. Five anxiety levels are presented as a result. We randomly select 30 participants of each anxiety level from each gender group as our participants, which makes up a final sample containing 150 female and 150 male college students age 18 to 24. Each gender group contains 5 level groups of 30 participants. Then we randomly assigned each group of 30 participants to two subgroups of 15 participants based on authority types—charismatic authority and legal-rational authority.

2.2. Procedure

After signing a consent form, each participant is led by the assigned authority into a monitoring room with a single-sided mirror, which allows the participant to see the opposite side. Participants and the assigned authorities are on one side while the confederates will be on the other side. The authority's mere presence imposes pressure on the supervisor. The participants are told by the authorities (experimenters) that they are going to be supervisors of the learners (confederate) in this experiment. The supervisor (participant) then read a quote from Shakespeare three times slowly, and the learner has 30 seconds to memorize it and repeat it. Once the learner makes mistake, the supervisor first corrects the mistake, then carries the bitter drink to their room, watches them finishing it, and returns. Based on varying bitterness levels of the drinks, the learner will act out reactions to different extents, including facial expressions, verbal expressions, etc. The participant is able to quit the experiment at any time while the authority makes sure the participants make their choices. If not, the participant repeats the

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202203_5(3).0069

experiment until the learner finishes the last level of the bitter drink. Each mistake leads to a higher level of punishment in terms of the bitterness of the drink; accordingly, the learner's discomfort reaction also intensifies. Since the learner has verbal expressions, to ensure that only one legitimate source of authority is perceived by the participant, the authority (experimenter) stressed that the participant should not be attentive to anything the learner says.

2.3. Measurement

Table 1. Additional obedient rates are added after the completion of each drink action (Drink 1–5). Confederates' facial, body, and verbal reactions are shown during the pauses.

	Measurement			Confederate's reaction
Level 1	0~20% +20%	10ml Bitters + 40ml drinking water = 50ml	1/5	Drink 1 Frown + Sigh
Level 2	20% ~ 40% +10% +10%	20ml Bitters + 30ml drinking water = 50ml	2/5	Drink 1 Pause 1 — Facial expression + eye contact with participant Drink 2
Level 3	40%~60% +6.667% +6.667% +6.667%	30ml Bitters + 20ml drinking water = 50ml	3/5	Drink 1 Pause 1 — Facial expression + eye contact with participant Drink 2 Pause 2 — "This tastes really bad, I really don't want to drink this" Drink 3
Level 4	60%~80% +5% +5% +5% +5%	40ml Bitters + 10ml drinking water = 50ml	4/5	Drink 1 Pause 1 — Facial expression + eye contact with participant Drink 2 Pause 2 — "Can I please stop drinking this? This is horrible." Drink 3 Pause 3 — Retch Drink 4
Level 5	80%~100% +4% +4% +4% +4% +4%	50ml Bitters + 0ml drinking water = 50ml	5/5	Drink 1 Pause 1 — Facial expression + eye contact with participant Drink 2 Pause 2 — "Could you PLEASE stop asking me to drink this? Why don't you try it yourself?" Drink 3 Pause 3 — Retch Drink 4 Pause 4 — Act dizzy and discomfort Drink 5

In order to minimize the potential impact of individual differences, four domains of behavioral indicators are controlled to distinguish the two authority types: posture, communication, tone, and contact. For each domain, the authority (experimenter) performed as stated in its authority type's corresponding criteria. The criteria for the first domain, posture, is: Charismatic authority— pace back and forth confidently, lively facial expression; Legal-Rational authority— sit rigidly with a commanding look, neutral facial expression. The criteria for the second domain of measurement, communication, are: 1. Charismatic authority—when giving instructions at

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202203_5(3).0069

the beginning, emphasize the authority's trust in the participants' completion of the entire experiment and the importance of each participant's role in the sensory punishment and memory experiment; Legal-rational authority—when giving instructions at the beginning, emphasize the importance of discipline to the participants by asking them to follow the instruction. 2. Charismatic authority—emphasize the value of this experiment when making sure the participants' choice to continue or to quit; Legal Rational authority—emphasize the rules of this experiment when making sure the participants' choice to continue or to quit. The criteria for the third domain of measurement, tone, are: 1. Charismatic authority— speak with a vivid and theatrical tone; Legal-rational authority— speak in a monotone. 2. Charismatic authority— conversational tone; Legal-rational authority— commanding tone. The criteria for the fourth domain of measurement, contact, are: 1. Charismatic authority— participant-centered, meaning this type of authority's main concerns are for participants' emotional and physical well-being; Legal-rational authority— instruction-centered, meaning this type of authority's main concerns are for participants' ability to follow instructions 2. Charismatic authority— direct eye contacts; Legal-rational authority— avoidance of direct eye contacts [12]. All domains of measurement are demonstrated throughout the entire experiment if not noted.

The measurement of obedient behavior in this experiment consists of 5 levels, corresponding to fifty-milliliter-drinks with an increasing amount of bitters, as shown in Table 1. At each obedience level, the learner takes increasing numbers of sips and responds to the drink with intensifying discomfort reactions. Level 1 is the lowest level and the least bitter drink with 10 milliliters of bitters and 40 milliliters of drinking water, adding up to a fifty-milliliter-mixture (proportion of bitters to the final solution=1/5). In level 1, the learner (confederate) takes 1 sip to finish the drink, then sighs and frowns after finishing [13]. Since level 1 consists of only 1 sip and 1 pause, it is divided into one sublevel of 20% obedient rate. For example, if the participant halts the experiment after the completion of the only sip in level 1, an obedience rate of 20% will be given; If the participant halts the experiment before the completion of the only sip in level 1, an obedience rate of 0% will be given. Level 2 contains 20 milliliters of bitters and 30 milliliters of drinking water (proportion of bitters to the final solution=2/5). In level 2, the learner takes 2 sips to finish the drink and paused once in between the 2 sips where the learner shows a disgusted facial expression and have eye contact with the participants. Level 3 contains 30 milliliters of bitters and 20 milliliters of drinking water (proportion of bitters to the final solution=3/5) and the learner takes 3 sips and 2 pauses to finish the drink. Disgusted facial expression and eye contact with the participants are displayed during the first pause as in level 2, and verbal expression of discomfort is presented during the second pause in level 3. Levels 4 and 5 are presented in Table 1 and simulate the previous ones. Since the obedient rate is measured on a percentage scale, each obedience level adds a maximum of 20% obedient rate in addition to the existing rate, and 5 obedience levels add up to a 100% obedient rate. For each level, the 20% obedient rate is equally divided by the number of drinking action. For example, level 3 ranges from 40% to 60% where the 3 drinking action each corresponds to 6.667% of the extra 20% obedient rate in addition to the existing rate.

2.4. Results

Due to the experiment's hypothetical nature, all final results are interpreted in terms of potential outcomes according to the hypotheses. Data is processed through the form presented in Table 2, and potential correlations are analyzed in detail. According to our assumptions, participants from all anxiety levels perform a higher average obedient rate (AOR) under legal-rational authorities in comparison to the AOR under charismatic authorities (charismatic Vi < legal-rational Vii). As anxiety level increases, participants perform a higher AOR under both authority types (Vii0<Vii1<Vii2<Vii3<Vii4). The differences in AOR between charismatic and legal-rational authorities at each level increase with increasing anxiety level as well

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202203_5(3).0069

(D0<D1<D2<D3<D4), and the difference is statistically significant ($p<0.05$). At higher anxiety levels, participants under charismatic leaders show higher AOR than under legal-rational leaders and the difference is significant ($p<0.05$). All three of our hypotheses are justified if the formerly stated outcomes are satisfied.

As one alternative outcome, all three hypotheses are rejected by our results. Participants from all five anxiety levels perform a higher AOR under charismatic authorities than under legal-rational authorities (charismatic Vi>legal-rational Vii). As anxiety level increases, participants' AOR under both authority types decreases and the difference in AORs between charismatic and legal-rational authorities either remains approximately unchanged or decreases. At high anxiety levels, participants' AOR under charismatic leaders is lower than or equal to those under legal-rational leaders. If the preceding outcomes are satisfied, all three hypotheses are nullified.

Table 2. All data indicates obedient rate and is measured on a percentage scale. Average I is a measurement of the average obedient rate of each authority type. Average II a measurement of the average obedient rate of each anxiety level. Differences are obtained through subtraction of average obedient rate under charismatic authorities from that under legal-rational authorities

(Difference = AORlegalrational —AORcharismatic).

Authority Type / Anxiety level	Charismatic	Legal-rational	Difference (D)	Average II (Vii)
0				
1				
2				
3				
4				
Average I (Vi)				

2.5. Discussion

In a meta-analysis of Milgram's experiment, eight factors are found to be influential in obedience of the participants, including the experimenter's directiveness, legitimacy, and consistency; group pressure on the teacher to disobey; the indirectness, proximity, and intimacy of the relationship between teacher and learner; and the distance between the teacher and the experimenter. According to the meta-analysis, a statistically significant correlation between intimacy and obedience level is presented ($p=.003<.05$) and that people tend to have a higher obedient rate to illegitimate authorities. When we design the behavioral indicators of the two authority types, charismatic authorities are distinguished by their participant-centered nature, frequent and positive facial expressions and eye contacts, conversational tone, and trust in the participants, which can be interpreted as higher intimacy with participants. Since charismatic and legal-rational are the opposing two authority types in this experiment, the outcomes we obtained could possibly be explained by the intimacy between the authorities and participants.

Results from an early experiment show that providing college students with self-esteem and confidence through a cognitive-behavioral treatment is significantly useful in reducing the students' test anxiety level [14]. Charismatic authorities in this experiment are designed to

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202203_5(3).0069

show their trust in the participants' capability and emphasize the value of each participant in this experiment, which are similar to providing them with self-esteem and confidence. It is reasonable, therefore, that people show higher obedience to charismatic authorities under high anxiety levels in our expected outcomes.

Another study suggests that group members tend to show less social anxiety under an enriched leadership style than a bland leadership style [15]. If people do perform higher obedience to charismatic leaders under high anxiety states as stated in our expected outcomes, it is valuable for leaders to consider modifying their leadership style under certain stressful events.

3. Conclusion

Replicating Stanley Milgram's experiment in 1965, this work explores the relation between authority types and public obedience and anxiety levels while ruling out certain social and psychological factors as confounding variables. We conduct our hypothetical experiment under the cover of sensory punishment's influence on working memory and replace electric shock in the Milgram experiment with a milder punishment of taking bitter drinks to address the original's ethical issues. If all three of our hypothesis are justified, this experiment's outcome includes: 1) participants from all anxiety levels perform a higher AOR under legal-rational authorities than under charismatic authorities; 2) As anxiety level increases, participants perform a higher AOR under both authority types; 3) At higher anxiety levels, participants under charismatic leaders show higher AOR than under legal-rational leaders.

Several limitations are presented in this experiment. Even though we conduct a double-blind experiment and exclude all social science major participants, using a cover similar to Milgram's still possibly exposes us to participants' recognition of our experiment's true purposes. We hope to eliminate this possibility in future studies. Due to the difficulties in designing new efficient measurement scales, we have neither an effective method for measuring recent anxiety state nor for trait-anxiety in this experiment; at the same time, participant's personality traits that increase their susceptibility to anxiety could be a potential confounding variable. We, therefore, suggest future researchers set trait-anxiety as control while measuring recent anxiety levels in the study. A longitudinal study could make the results more applicable and to a wider range of age groups.

References

[1] United Nations Department of Economic and Social Affairs. (2020). The Social Impact of COVID-19. https://www.un.org/development/desa/dspd/2020/04/social-impact-of-covid-19/.

[2] Centers for Disease Control and Prevention. Mental Health and Coping During COVID-19. https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/managing-stress-anxiety.html.

[3] Rosa, C (Glamour), (2020). Lady Gaga Wore So Many Elaborate Masks at the 2020 VMAs, and the Internet Lived for It. https://www.glamour.com/story/lady-gaga-wore-elaborate-masks-to-the-mtv-vmas-2020-and-the-internet-lived-for-it.

[4] Golby, J (The Guardian), (2020). Stand down, experts: celebrities have got coronavirus covered. https://www.theguardian.com/lifeandstyle/lostinshowbiz/2020/mar/05/stand-down-experts-celebrities-coronavirus-crisis.

[5] Milgram, S. (1965). Some conditions of obedience and disobedience to authority. Human Relations, 18(1), 57–76.

[6] Nicholson, I. (2011). "Shocking" masculinity: Stanley milgram, "Obedience to authority," and the "Crisis of manhood" in cold war america. Isis, 102(2), 238-268.

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202203_5(3).0069

[7] Haslam, N., Loughnan, S., Perry, G. (2014). Meta-Milgram: An Empirical Synthesis of the Obedience Experiments. PLOS ONE, 9(4): e93927.

[8] House, R. J., Howell, J. M. (1992). Personality and charismatic leadership. The Leadership Quarterly, 3(2), 81–108.

[9] Blass, T., Schmitt, C. (2001). The nature of perceived authority in the milgram paradigm: Two replications. Current Psychology, 20(2), 115-121.

[10] Oever, S. T., Weerd, P. D., Sack, A. T. (2020). Phase-dependent amplification of working memory content and performance. Nature Communications, 11(1), 1832.

[11] Zung, W. W. k. (1971). A rating instrument for anxiety disorders. Psychosomatics, 12(6), 371-379.

[12] Howell, J.M., Frost, P. J. (1989). A laboratory study of charismatic leadership. Organizational Behavior and Human Decision Processes, 43(2), 243-269.

[13] [Hurley, A.C., Volicer, B.J., Hanrahan, P.A., Houde, S., Volicer, L. (1992). Assessment of Discomfort in Advanced Alzheimer Patients. Research In Nursing & Health, 15, 369-377.

[14] Hembree, R. (1988). Correlates, causes, effects, and treatment of test anxiety. Review of Educational Research, 58(1), 47-77.

[15] Martin, K.A., Fox, L.D. (2001). Group and Leadership Effects on Social Anxiety Experienced During an Exercise Class. Journal of Applied Social Psychology, 31(5), 1000-1016.

[16] DoctorNDTV. (2018). If You Have These Personality Traits, You Are Most Likely To Suffer From Anxiety. https://doctor.ndtv.com/living-healthy/personality-traits-linked-to-anxiety-disorders-1878210

[17] Spielberger, C. D., Gorsuch, R. L., Lushene, R., Vagg, P. R., & Jacobs, G. A. (1983). Manual for the State-Trait Anxiety Inventory. Palo Alto, CA: Consulting Psychologists Press.