

The Milgram Paradigm After 35 Years: Some Things We Now Know About Obedience to Authority¹

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Guided by the belief that we cannot make broad extrapolations from the obedience studies without first firmly establishing what has and has not been found using the paradigm itself, this article draws on 35 years of accumulated research and writings on the obedience paradigm to present a status report on the following salient questions and issues surrounding obedience to authority: (a) How should we construe the nature of authority in the obedience experiment? (b) Do predictions of those unfamiliar with the obedience experiment underestimate the actual obedience rates? (c) Are there gender differences in obedience? and (d) Have obedience rates changed over time?

What have I learned from my investigations? First, that the conflict between conscience and authority is not wholly a philosophical or moral issue. Many of the subjects felt, at the philosophical level of values, that they ought not to go on, but they were unable to translate this conviction into action.

It may be that we are puppets—puppets controlled by the strings of society. But at least we are puppets with perception, with awareness. And perhaps our awareness is the first step to our liberation. (Milgram, 1974b, p. 568)

SAFER: . . . are you suggesting that—that it could happen here?

MILGRAM: I would say, on the basis of having observed a thousand people in the experiment and having my own intuition shaped and informed by these experiments, that if a system of death camps were set up in the United States of the sort we had seen in

¹Quotes from letters and most information given without citation are from the Stanley Milgram Papers, Yale University Archives. I want to express my thanks to Annamarie Krackow for her help with some of the analyses presented in this article.

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Nazi Germany, one would be able to find sufficient personnel for those camps in any medium-sized American town. (CBS News, *Sixty Minutes*, March 31, 1979)

Milgram conducted his obedience studies early in his professional career, and then went on to apply his innovative touch to a variety of other phenomena, such as the small-world method and the effects of televised antisocial behavior. Yet, clearly, the obedience work has overshadowed his other research—it remains his best-known and most widely discussed work. Of the approximately 140 invited speeches and colloquia he gave during his lifetime, more than one third dealt, directly or indirectly, with obedience. Milgram was still giving invited colloquia on the topic in 1984, the year he died—22 years after he completed them—one at LaSalle College on April 7, and the other at the University of Tennessee at Martin on April 26. In fact, it is somewhat ironic that his very last publications, both appearing posthumously in 1987, dealt with obedience. One was in the *Concise Encyclopedia of Psychology* (Milgram, 1987a), and the other in the *Oxford Companion to the Mind* (Milgram, 1987b).

Given the widespread familiarity with Milgram's obedience studies, it should not be surprising to find the obedience research discussed or referred to in publications as diverse as the *Archives of Internal Medicine* (Green, Mitchell, Stocking, Cassel, & Siegler, 1996) and the *Indian Journal of the History of Science* (Laurent, 1987), nor to see it brought into discussions of topics as wide-ranging as business ethics (Browne, Kubasek, & Giampetro-Meyer, 1995/1996; Ferrell & Gardiner, 1991; MacLellan & Dobson, 1997), military psychology (Guimond, Kwak, & Langevin, 1994; Spector, 1978), economics (Anderson & Block, 1995), Holocaust studies (e.g., Browning, 1992; Goldhagen, 1996; Katz, 1993), philosophy (Assiter, 1998; Morelli, 1983), and law (Koh, 1997). Perhaps it should not even be surprising to find it in the title of a song ("We Do What We're Told—Milgram's 37" by rock musician Peter Gabriel on his 1986 album titled *So*) or featured prominently in a French film, *I Comme I care* [I as in Icarus], starring Yves Montand. The obedience experiments were the focus of the Fall 1995 issue of the *Journal of Social Issues*, and they continue to fascinate the reading public (e.g., French, 1997; Masters, 1996).

The interest generated by the obedience research has crossed not only disciplinary boundaries but language barriers as well. Early on, Milgram's (1965b) article "Some Conditions of Obedience and Disobedience to Authority" appeared in translation in a German psychology journal in 1966 (Milgram, 1966) and in Hebrew in the Israeli journal *Megamot* in 1967 (Milgram, 1967). The book *Obedience to Authority: An Experimental View* (Milgram, 1974a) has been translated into 11 languages. During the past few years, a social psychologist at the Russian State University of the Humanities, Alexander Voronov, has been introducing Milgram's work to Russian audiences through his teaching, newspaper articles

(e.g., Voronov, 1993), and Milgram's (1965a) documentary film, *Obedience*, with a Russian voice-over added.

The obedience research is clearly among the best-known and most widely discussed work in the social sciences. Undoubtedly, an important reason for this is that it has been a source of usable insights and lessons for both self and society. As Milgram's colleague, Irwin Katz, described the obedience studies at Milgram's funeral,

After two decades of critical scrutiny and discussion, they remain one of the most singular, most penetrating, and most disturbing inquiries into human conduct that modern psychology has produced in this century. Those of us who presume to have knowledge of man are still perplexed by his findings, with their frightful implications for society. (Katz, 1984)

Purpose

The purpose of the present article is to provide a detailed examination of a number of salient questions and issues surrounding the Milgram obedience experiments which are still in need of systematic attention. (For reviews and analyses related to other aspects of the obedience paradigm and of other facets of Milgram's life and work, the reader is referred to Blass, 1991, 1992b, 1993, 1996b; see also Miller, 1986.) Specifically, I will draw on about 35 years of accumulated research and writings on the obedience paradigm to present a status report on four questions and issues. While each of the questions and issues could be addressed independently of the others, what unites them is that, in their totality, their answers should help to advance our knowledge of research using the Milgram paradigm and its implications.

First, I will address the question of how to construe the nature of authority in the obedience experiment. This is a fundamentally important question, since the kinds of authority-subordinate relationships to which the findings from the obedience experiments are generalizable hinge on the answer to that question. In pursuit of that answer, I will review the various views on this question. Then, in an attempt to provide at least an indirect resolution of the conflicting viewpoints, I will present the results of a person-perception experiment I conducted using an edited version of Milgram's (1965a) documentary film, *Obedience*.

Second, I will review the evidence regarding the apparent inability of naive respondents to predict the high degree of obedience Milgram found in his standard conditions. The tendency for those unfamiliar with the obedience experiments to vastly underestimate actual obedience rates reported by Milgram has contributed importantly to the revelatory power of the experiments. The prediction versus outcome dichotomy is also important because, as we will see, it is

closely intertwined with a controversy regarding how to interpret the obedient subjects' behavior—as one representing destructive obedience, as Milgram saw it, or as one involving a more benign view centered on subjects' trust in the experimenter, as represented in Mixon's (1976) approach.

Third, I will present a review of all of the methodological replications of Milgram's standard or baseline conditions which allowed comparisons of males and females in rates of obedience. As will be shown, the totality of the findings of my review are consistent with those of Milgram, although there are a couple of discrepant results which pose a challenge to understanding.

And finally, this article provides an empirical answer to the question of whether or not obedience rates have changed since Milgram first conducted his experiments in 1961-1962. The answer not only has practical usefulness for those of us who often have fielded this question from students when teaching about the obedience experiments, but it has theoretical importance as well: It provides data-based input regarding the validity of Gergen's (1973) *enlightenment effects* notion.

How Should We Construe the Nature of Authority in the Obedience Experiment?

How to characterize the kind of authority embodied by Milgram's experimenter is a fundamentally important question, since the kind of authority-subordinate relationships the experiments have implications for depend on the answer to that question. We will first examine Milgram's view of the authority figure in his experiments, as well as the differing perspectives. Then, I will present the findings from an experiment which provides a rapprochement between the conflicting viewpoints, at least indirectly.

Milgram saw his experimenter as representing a legitimate authority, one who is seen as having a right to issue commands, and to whom one feels an obligation to obey. As Milgram (1974a) put it, "an authority system . . . consists of a minimum of two persons sharing the expectation that one of them has the right to prescribe behavior for the other" (pp. 142-143). He also notes that a legitimate authority is one who is "perceived to be in a position of social control within a given situation" (p. 138) and that "the power of an authority stems not from personal characteristics but from his perceived position in a social structure" (p. 139). And what is it about a legitimate authority that, according to Milgram, enables him to elicit destructive obedience, the kind that bears a kinship to the behavior of a Nazi storm trooper? First is the ability of a legitimate authority to define reality for the person who accepts his or her authority. As Milgram (1974a) put it, "There is a propensity for people to accept definitions of action provided by legitimate authority. That is, although the subject performs the action, he allows authority to define its meaning" (p. 145). Earlier, Milgram (1965b), had made the point even more strongly:

With numbing regularity good people were seen to knuckle under the demands of authority and perform actions that were callous and severe. Men who are in everyday life responsible and decent were seduced by the trappings of authority, by the control of their perceptions, and by the uncritical acceptance of the experimenter's definition of the situation, into performing harsh acts. (p. 74)

The other factor that enables a legitimate authority to evoke destructive obedience, according to Milgram (1974a), is the shift of subjects into a different experiential state—the agentic state—which enables them to relinquish responsibility to the authority and, therefore, to follow his or her orders without regard to their morality. As Milgram (1974a) stated, “The most far-reaching consequence of the agentic shift is that a man feels responsible *to* the authority directing him but feels no responsibility *for* the content of the actions that the authority prescribes” (pp. 145-146).

A main differing perspective on the nature of authority in the obedience experiment is to see him as an expert authority. Morelli (1983), a critic of Milgram, succinctly captures the difference between a legitimate authority and an expert authority via the difference between saying someone is *in* authority (i.e., in charge) or *an* authority (i.e., someone with expertise on some topic).

One of several writers (Greenwood, 1982; Helm & Morelli, 1985; Morelli, 1983; Penner, Hawkins, Dertke, Spector, & Stone, 1973) who expresses the authority-as-expert point of view is Patten (1977), a philosopher, and in so doing, he argues for a distinction between the obedience of a subject in the Milgram experiment and obedience to carry out mass killings. He argues that there is a difference between the type of authority represented by Milgram's experimenter and the kind wielded by a Hitler. The former possesses what Patten calls *expert-command authority*. That is, he is able to command obedience by means of his presumed expertise regarding learning and shock machinery. The latter, more worrisome, kind of authority wields what he calls a *simple-command authority*; namely, whose power to command and exact obedience is based on legal or quasi-legal considerations, not because of any special expertise regarding the task at hand. According to Patten, knowledge about how a person might react to expert-command authority cannot tell us about that individual's behavior in relation to simple-command authority.

Milgram clearly distinguished between his conception of his experimenter as a legitimate authority and authority based on expertise. In an interview conducted by Evans (1976, p. 349), he said “When we talk about a medical authority, we're talking about someone with expertise. That's not quite the same as the kind of authority I was studying, which is someone perceived to have the right to control one's behavior.”

What is interesting about this comment is that there is evidence provided by Milgram himself—though it is anecdotal—that for some of his own subjects, the authority’s expertise may have been his salient attribute. In his book, he quotes an exchange between a subject (Mr. Rensaleer) and the experimenter. The subject had just stopped at 255 V, and the experimenter tried to prod him on by saying “There is no permanent tissue damage.” Mr. Rensaleer answers, “Yes, but I know what shocks do to you. I’m an electrical engineer, and I have had shocks . . . and you get real shook up by them—especially if you know the next one is coming. I’m sorry” (Milgram, 1974a, p. 51). What this subject seems to be doing is pitting his own expertise against the experimenter’s expertise as a way of undermining the latter’s power.

It is also worth noting that Milgram was not entirely consistent in his view about the source of his experimenter’s power as an authority. Or, more precisely, he seemed to have shifted his position somewhat, later in his career. In 1983, in one of the last things Milgram wrote about obedience before his death, here is what he said in reply to a critical article by Morelli (1983):

In regard to the term *authority*, Morelli states I did not adequately distinguish between the expert knowledge of *an* authority and a person who is *in* authority (in the sense that he occupies an office or position). I fully agree with Morelli that this is an important distinction. . . . Within my own study, how would the experimenter be classified in terms of these two types of authority? As frequently happens, real life is more complex than textbooks: Both components co-exist in one person. The experimenter is both the person “in charge” and is presumed by subjects to possess expert knowledge. One could envision a series of experiments that attempt to empirically disentangle these two elements and I am all for such inquiry. (Milgram, 1983, pp. 191-192)

I recently conducted an experiment which was designed to assess the perceived roles played by expertise and legitimacy in the obedience experiment (Blass, 1992a). I studied my subjects’ judgments about obedience rather than their own obedience, so it is not exactly the kind of experiment Milgram had in mind that would “empirically disentangle [the] two elements.” Still, I had hoped that it would serve as useful input into the issue. (I should note that there is a study, a doctoral dissertation by Frederick Miller, 1975, that is probably closer to the kind that Milgram had in mind. It pitted the experimenter’s expertise and legitimacy against each other in a factorial design, and obedient vs. defiant behavior of the subject served as the dependent variable. However, its focus was on self-inflicted pain, which probably involves different underlying dynamics than obedience to inflict pain on another person.)

The conceptual framework I worked with is French and Raven's (1959) classic formulation regarding the bases of social power. There is a natural affinity between French and Raven's schema and the obedience work, for a couple of reasons. First, many social psychology textbooks discuss them together. Second, Raven (1965; Raven & Rubin, 1983) in later publications actually cites the obedience experiment as an illustration of legitimate power, one of the types of power in French and Raven's system. (For a recent statement on the bases of social power, see Raven, 1992.) For my purposes, French and Raven's conceptualization is also useful because expert power is another one of their categories. A further potential benefit of using French and Raven's schema is that they actually distinguish among six different types of power: besides legitimate and expert power there are reward, coercive, referent, and informational power. So by using French and Raven's framework, we might also learn about the perceived role of other attributes besides expertise and legitimacy as determinants of the authority's power. They are listed, with their meanings, in the first and second columns of Table 1.

The college student participants in the experiment were shown a 12-min videotape, a shortened, edited version of Milgram's (1965a) documentary film, *Obedience*, similar to ones which I have used in other studies focusing on attributional processes in the Milgram experiment (Blass, 1990, 1995). The end of the segment they saw shows a subject, referred to in Milgram's (1974a) book by the pseudonym "Fred Prozi" going through the shock sequence, beginning with his giving 90 V. In the full version of the film, he is shown ending up completely obedient (i.e., giving the 450-V shock). In the edited version shown to my subjects, the tape was stopped immediately after Prozi administered the 180-V shock.

Participants were then asked to indicate why they thought the subject they just saw kept on following the experimenter's instructions and continued to shock the learner. To answer that question, they were provided with a set of six cards, each of which contained a different explanation which was meant to capture a specific social power category. These are listed in the third column of Table 1.³ The subjects were asked to indicate which reason they thought was the most likely one, then the next most likely one, and so on.

Subjects' choices were assigned rank scores, 1 through 6, with the most likely explanation receiving a rank score of 1. The data were analyzed by means of a one-way repeated-measures ANOVA, with social power category as the independent variable and assigned rank as the dependent variable, yielding a highly significant, $F(5, 170) = 42.77, p < .0001$. Dependent *t* tests, using the Bonferroni test correction, were then conducted to test for differences between pairs of mean

³I am indebted to Forsyth (1987) and Raven and Rubin (1983) for some of the ideas and wording that I used in developing the explanations.

Table 1

Mean Rankings of Bases of Social Power as Explanations for an Obedient Subject's Behavior in the Milgram Experiment

Power categories	Meanings: Subjects are influenced because . . .	Explanation	Mean ranks
Reward	they see the E as a potential source of rewards.	Because the experimenter is a figure of authority, his positive evaluations are especially rewarding, so the subject carries out the experimenter's wishes, thereby hoping to win his approval.	4.46 _b
Coercive	they see the E as a potential source of punishments.	The experimenter urges the subject to continue, using such phrases as "The experiment requires that you go on." For the subject, such phrases seem to warn of negative consequences if he does not continue.	2.71 _a
Legitimate	they believe that the E has a legitimate right to prescribe behavior for them.	Because the experimenter represents the authority of science and the subject agreed to be a participant, he believes that the experimenter has a right to control his actions, and so the subject feels obliged to comply with the experimenter's wishes.	2.40 _a
Referent	they identify with, or like, the E.	The subject has respect and admiration for the experimenter, identifies with him, and would like to be such a person.	5.86 _c
Expert	they perceive the E as having some special knowledge or expertise.	As a scientific expert, the experimenter has the faith and trust of the subject, so when the experimenter tells him that "although the shocks may be painful, they're not dangerous," the subject feels reassured and continues with the procedure.	2.31 _a
Informational	the information the E provides is intrinsically compelling or convincing.	The introductory information, provided by the experimenter, about the goal of the experiment—namely, to learn more about the effect of punishment on memory—convinces the subject that the study has value and, therefore, that his cooperation is important.	3.23 _a

Note. Means sharing a subscript do not differ significantly from each other.

rank scores. The mean rank scores are presented in the last column of Table 1. As can be seen, the expert power explanation was seen as most likely, followed very closely by legitimate power, while coercive power was seen as the third and informational power as the fourth most likely explanation. These differences, however, were not significant. Reward power comes next, and referent power is seen as the least likely reason for the subjects' compliance.

Several conclusions can be drawn from the findings, tempered by the obvious caution that they are based on data from external perceivers about 30 years after the fact, and not from actual participants in the Milgram experiments. First, it is reassuring to know that the experimental authority's two attributes seen as most salient by naive perceivers are the same ones that have been pointed to over the years by more scholarly perspectives; that is, legitimacy and expertise. Second, rather than deciding between legitimacy and expertise, the results suggest that both factors may have combined to give Milgram's experimenter the tremendous power that he had. Third, the fact that the coercive power explanation was ranked relatively high (as the third most likely explanation) is surprising, because it suggests that some subjects may have been reading things into the experimenter's words. Further, it leaves us with the gnawing possibility that many subjects may have been reading other things into the experimenter's words that we don't know about, which may have figured importantly as determinants of their behavior. And, finally, this study affirms—as do other studies (Blass, 1990, 1995, 1996a; Collins & Brief, 1993; Guimond & Kwak, 1995; Miller, Gillen, Schenker, & Radlove, 1974; Pearson, 1992) the value of using person-perception and attributional methodologies to advance our understanding of obedience to authority.

Do Predictions of Those Unfamiliar With the Experiment Underestimate the Actual Obedience Rates?

Milgram (1974a) found that they did, vastly, and much of the revelatory power of the obedience work is based on this contrast between our expectations of very little obedience and the actual result of a majority of subjects obeying in Milgram's standard or baseline conditions. Milgram considered this finding so centrally important that, according to one of his students (interview with Harold Takooshian, June 17, 1993, Fordham University at Lincoln Center), he would become furious if a student suggested that it was all common sense; that if you thought about it, you could have predicted the outcome. Incidentally, this feature of the obedience studies was dramatized very effectively in 1976 in the *Tenth Level*, a made-for-TV movie starring William Shatner, which earned its writer, George Bellak, an Honorable Mention in the American Psychological Foundation's 1977 National Media Awards. Specifically, Milgram (1963) found that a group of Yale seniors predicted an obedience rate of 1.2%, while a group of psychiatrists predicted that only 0.125% of subjects would be fully obedient. Here is how he described this latter finding in a letter to E. P. Hollander (September 24, 1962):

Recently I asked a group of 40 Yale psychiatrists to predict the behavior of experimental subjects in a novel, though significant situation. The psychiatrists—although they expressed great certainty in the accuracy of their predictions—were wrong by a factor of 500. Indeed, I have little doubt that a group of charwomen would do as well.

While Milgram's powerful demonstration that normal individuals are much more willing to obey a legitimate authority's orders than one might have thought remains an enduring insight, subsequent studies suggest that it is in need of some qualification, since they show that greater accuracy in predicting the results of an obedience experiment is possible.

In studies using maximum voltages predicted on the 450-V scale as the dependent variable, mean estimates of others' obedience levels have been as high as 276.75 V (Miller et al., 1974), 225 V (Maughan, 1981), and 216 V (Maughan & Higbee, 1981) in specific conditions.

The gap between expected and obtained obedience narrows even more substantially when we consider studies which obtained predictions using obedience rates. Mixon (1971) read participants the Method section from Milgram (1963) and then asked them how "a hypothetical group of 100 American males" would behave. The percentage of subjects predicted to be fully obedient ranged from an average of 33.52% (naive females' estimates) to 44.3% (naive males' estimates). Kaufmann and Kooman (1967) gave subjects descriptions based on Milgram's (1963) procedures and found 27% of them predicting that the "teacher" would continue to the end of the 450-V shock scale. A similar finding was obtained in a more recent study by Guimond et al. (1994) involving a group of Canadian officer candidates. After learning about a baseline obedience experiment (without the outcome) from a short videotape, 23.9% of them predicted full obedience by other Canadians. Furthermore, Mixon (1971) was able to get variations in predicted obedience by systematically modifying the details about the procedure that was read to subjects. These ranged from 0% of the subjects predicting complete obedience when the description they read clearly indicated that the learner was in danger of being harmed to 90% when indications of possible harm were minimized. Taken together, these findings not only point to greater accuracy in perceivers' predictions about obedience, but also to a different way of understanding underestimations of obedience.

An influential perspective on underestimations of obedience has been that of Ross (1977). According to his view, in attempting to predict obedience, people erroneously overlook the determining influence of the situation—the power of the authority—and place too much weight on the personal dispositions of the "teacher," exemplifying a tendency he labeled the *fundamental attribution error*. Mixon's (1971) findings suggest, however, that the discrepancy between

predictions and findings takes place not because people do not give enough weight to the immediate situation, but because those who are asked to make predictions, on the one hand, and actual subjects in an obedience experiment, on the other hand, may be responding to different situations: The descriptions given in prediction tasks may convey a procedure that is potentially more harmful for the learner than the real subject in an obedience experiment typically found it to be. Thus, for example, Bierbrauer (1974) had participants learn about the obedience experiment by either watching, or serving as the "teacher" in, a reenactment of an experimental session which ends in complete obedience. Across two experiments and a number of conditions, his participants' subsequent estimates of the percentage of subjects who would give the 450-V shock averaged 11.5%.⁴ In introducing the reenactment, however, Bierbrauer (1974) told his subjects that "Professor Milgram wanted to see whether subjects would obey an experimenter's instructions to deliver painful and *potentially dangerous* electric shocks to one of their peers" (p. 78; italics added). But, as Mixon (1976) has argued, both the scientific context and the experimenter's reassurances that the shocks may be painful but not dangerous probably led the actual participants in Milgram's experiments to anticipate that the "learner" would not be harmed.

In other words, Mixon's (1989) view of subjects' behavior in the obedience experiment is a more benign one than is Milgram's. If Mixon is right, then was Milgram wrong in referring to his obedient subjects' actions as "destructive"? This is how Mixon sees it, and for a long time, I saw Milgram's and Mixon's approaches as conflicting and irreconcilable. But then recently, in a review of Mixon's (1989) book, Hamilton (1992) presented a persuasive and insightful perspective that brings the implications of Mixon's viewpoint closer to Milgram's:

I believe . . . that Milgram's work has a value beyond that accorded it in Mixon's account. True, perhaps Milgram's subjects suspended their doubts and disbeliefs in going along with experimental commands. Perhaps they did not really believe that damage and death could or should ensue from their actions. So what; they still did them. I see the actions of Milgram's subjects as more closely analogous to those of corporate employees who produce unsafe products and believe that the company could not really be endangering consumers just to make a profit, than to the actions of a military subordinate ordered to shoot civilians. The fact remains that these employees—or Milgram's subjects—perform the deeds they are asked to perform. (Hamilton, 1992, p. 1313)

⁴This number was computed by averaging across the condition means in Tables 2 and E-4 in Bierbrauer (1974).

Table 2

Studies Using the Milgram Paradigm Which Have Compared Male and Female

Author and year	Country	Gender	Number of subjects	Author's name for or description of condition (when more than 1 in study)	Equivalent Milgram condition(s)	Percentage fully obedient
Milgram (1962)	United States	F	40	8. Women as subjects	N/A	65
Edwards et al. (1969)	South Africa	M F	10 6	—	2. Voice feedback	87.5
Bock & Warren (1972)	United States	M F	17 13	—	5. New baseline	?
Bock (1972)	United States	M/F	25	Scientific authority	5. New baseline	40
Kilham & Mann (1974)	Australia	M F	25 25	Executant	2. Voice feedback	28
Costanzo (1976)	United States	M F	48 48	"Retaliation" and "nonretaliation" conditions combined	1. Remote	81
Shanab & Yahya (1977)	Jordan	M F	48 48	Experimental	1 and 2. Remote and voice-feedback combination	73
Shanab & Yahya (1978)	Jordan	M F	12 12	Experimental	1 and 2. Remote and voice-feedback combination	62.5
Miranda, Caballero, Gomez, & Zamorano (1981)	Spain	M F	12 12	"Not watching" and "watching" conditions combined	2. Voice feedback 3. Proximity	50
Schurz (1985)	Austria	M F	24 32	—	1. Remote	80

Subjects on Level of Obedience

Gender of experimenter	Subject gender differences		Remarks
	Yes/no	Percentage fully obedient	
M	No	—	Compared to Milgram's Condition 5 (same condition using 40 male subjects) in which 65% were fully obedient. The data on women first appeared in Milgram (1974a), but all conditions were completed between the summer of 1961 and May 1962. The women's condition was carried out in 1962. Thus, the 1962 in the citation reflects the completion date, not the publication date.
F	No	—	The experimenter, a 19-year-old female, as well as her two male "technician" assistants, were college students. See also the note about this experiment in the Appendix.
M	No	—	Percentage of fully obedient subjects not reported. The measure of obedience was maximum shock level given.
M	No	—	Lack of subject gender differences reported only for total subject sample, that is, across three conditions, of which the scientific authority condition was one.
M	Yes	M 40% F 16%	Subjects assumed role of executants taking orders to shock from confederate transmitters who, they thought, were also subjects. Paired male executant with male learner and female executant with female learner.
F	No	—	Subject and learner paired in four conditions: M-M, M-F, F-M, F-F.
F	No	—	Subjects were children aged 6 to 16. Subject and learner paired in two conditions: M-M, F-F.
F	No	—	Subject and learner paired in two conditions: M-M, F-F.
M/F	No	—	When subjects were male, experimenter and learner were male. When subjects were female, experimenter and learner were female. The dependent variable was highest shock given, rather than percentage fully obedient. However, a graph in the report reveals indirectly that at least 50% were fully obedient.
F	No	—	Learner was female. Stimulus: "ultrasound waves" supposedly damaging to skin at higher intensities.

Are There Gender Differences in Obedience?

Although almost all of his subjects were men, Milgram had one condition (Experiment 8 in Milgram, 1974a) in which the participants were women. The result was exactly the same rate of obedience—65%—as for men in the comparable condition (Experiment 5). I found nine methodological replications in the literature which had both male and female participants. Consistent with Milgram's own findings, eight out of nine of these studies found no gender differences (Table 2).

As can be seen in Table 2, the one exception is a study by Kilham and Mann (1974), conducted in Australia, in which they found the obedience rate in men (40%) to be significantly higher than among women (16%). (The Kilham & Mann study is also noteworthy for another reason: Its overall rate of obedience—28%—is the lowest reported in the literature for a standard obedience condition.)

It is also relevant to mention two other studies in this context because they pose a challenge to understanding, though they were not included in Table 2: the first, because it lacked a comparison group of males; the second, because it used a real victim, an animal "learner." Ring, Wallston, and Corey (1970) conducted a voice-feedback replication using 57 female subjects. While the main focus of this study was the relative effectiveness of different debriefing methods, an important finding was that 91% of their subjects were fully obedient, the highest rate for a standard condition reported in the obedience literature. Sheridan and King (1972) conducted a unique Milgram-type study using a puppy as the "learner." Even though the cute puppy was visible to the subjects and enough actual shock was delivered to cause the puppy to yelp and jump in pain, 100% of the female subjects were fully obedient, while only 54% of the males were obedient.

Milgram (1974a) had also reported that, although the level of obedience in women was the same as in men, the self-reported tension of the obedient women was higher than among 20 groups of obedient male subjects. This result finds support in a study by Shanab and Yahya (1977) involving Jordanian children and adolescents. They reported that females were more likely to show visible signs of tension than were males.

Two consistencies emerge from the studies presented in this section. First, it is quite remarkable that 9 out of 10 comparisons (Table 2) showed no gender differences in obedience, despite the existence of between-experiment differences on such factors as country where the experiment was conducted, gender of experimenter, gender of learner, and specific details of the experimental procedures. Eagly's (1978) seminal review of gender differences in influenceability showed that the widely held assumption about women being generally more influenceable than men was wrong. She found no gender differences in the majority of the studies she reviewed. A tendency for women to be more susceptible to influence than men showed up in only one domain—the Asch-type (Asch, 1956) group-

pressure conformity situation, in which 34% of the studies found women to be significantly more conforming than men. Her review, although mentioning the Milgram studies and two replications that looked at gender differences (Kilham & Mann, 1974; Sheridan & King, 1972), did not include a systematic review of studies of gender differences in the obedience paradigm. The findings reported here complement Eagly's review by identifying yet another social influence paradigm in which the majority of studies show no gender differences.

Second, the consistency of Milgram's findings on gender differences in self-reported tension is also quite noteworthy, with obedient women reporting greater tension than the obedient males in 20 conditions. These findings have wide-ranging implications beyond the question of gender differences. In particular, the fact that the same observable behaviors—identical rates of obedience (65%), in men and women in a baseline condition—were accompanied by different levels of nervousness should alert us to the importance of trying to identify the underlying processes involved in acts of obedience and defiance, be they those involving the Milgram paradigm or not.

Have Obedience Rates Changed Over Time?

One of the questions I have posed to my social psychology classes when presenting the obedience studies is what they think the results would be if the research were conducted today. I collected systematic data relating to this and several other questions from students in 11 social psychology classes from 1983 to 1990. The results were as follows: 40% predicted less obedience today, 39% predicted the same amount, and only 11% predicted an increase in obedience (Blass & Krackow, 1991).

After completing this analysis, it occurred to me that it would be even more interesting to determine whether or not a change in obedience tendencies over time could be detected in the actual outcomes of obedience studies. So I took Milgram's standard or baseline conditions (i.e., in which the learner is physically separated from and not visible to the subject: Experiments 1, 2, 5, 6, 8, and 10 in Milgram, 1974a) and all of the methodological replications of these experiments carried out by others (there were 14 of these), and correlated the rank order of the year of publication of the study with the rank order of its obedience rate. The studies spanned a period of 22 years, from 1963 to 1985, which is the year of publication of the last methodological replication that I have found (Schurz, 1985). Although levels of obedience across studies ranged from a low of 28% (Kilham & Mann, 1974) to a high of 91% (Ring et al., 1970), there was no systematic relationship between when a study was conducted and the amount of obedience obtained: The Spearman rank-order correlation coefficient (r_s) was .002. A second correlation was performed, this time adding Milgram's Proximity condition (Experiment 3) and three proximity-condition replications by other

investigators (for a total of 24 conditions or studies). These had been excluded from the first correlation because the rate of obedience in Milgram's Experiment 3 was significantly lower than those of his Experiments 1, 2, 5, and 8 (Blass, 1991), suggesting that methodologically and experientially they were distinct. However, as it turns out, the addition of the Proximity studies leaves the correlation virtually unchanged: $r_s = -.008$. (See the Appendix for a listing of studies and findings which were used in the correlational analyses.)

An important implication of the findings of these correlational analyses is that they provide evidence—at least, indirectly—against the operation of enlightenment effects, which had been proposed by Gergen (1973). Gergen had argued that “sophistication as to psychological principles liberates one from their behavioral implications” (p. 313). If Gergen is right, the later studies should have found less obedience than the earlier ones since, with the longer passage of time, the participants in the more recent studies would have had more of a chance to hear about Milgram's work and thereby become enlightened about, and liberated from, the unwanted demands of authority.

Two unpublished studies attempted to provide more direct tests regarding the operation of enlightenment effects using the Milgram paradigm—one by Brant (1978) and the other by Shelton (1982). Brant had college undergraduates, who had first been familiarized with the obedience studies, participate in a “learning” experiment, similar to Milgram's Experiment 11, in which they could choose any shock level on a 390-V “shock” generator whenever the learner made an error. Brant reports that only 4 subjects out of 44 refused to participate in the study after they heard the instructions—a finding which he interprets as “seriously call[ing] into question” (p. 53) Gergen's thesis. However, the study suffers from a serious methodological flaw, precluding any firm conclusions about enlightenment effects: It is not clear how many of the subjects, if any, actually knew about the obedience studies prior to their own participation. This is because the attempt to inform them about it took the following form:

Prior to their participation, subjects had been assigned readings in their classes concerning the obedience research as well as other psychological findings in conjunction with their coursework. In addition, these students had been lectured to on topics relevant to this investigation. (Brant, 1978, p. 19)

There was no attempt, however, to ascertain whether or not subjects had actually read the assigned readings or attended the relevant lectures.

Shelton's (1982) attempt to determine the validity of Gergen's claim that the acquisition of psychological information can change a person's behavior was not only a methodological improvement over Brant's study but also was quite clever in its conception. First, she gave all of her subjects a detailed synopsis of the

obedience experiment to read and then asked them a set of questions about what they had read. She then asked them to serve as experimenters in a similar "learning" experiment. Their job was to oversee a subject (the teacher) who was supposed to teach a verbal-learning task to another subject (the learner) by using increasing voltages of shock as punishment on each subsequent mistake. The subject (experimenter) was told that the learner was a confederate, but unbeknownst to the former, the teacher was also a confederate, who, as the shock levels and the learner's expressions of pain increased, "expressed uneasiness, then became quite anxious, angry, on the verge of tears; cursed, complained of stomach pains, asked for a glass of water, and pleaded with the experimenter to stop the session . . ." (p. 31). In spite of this, 22 out of 24 subjects continued to the end, commanding the teacher to keep increasing the shock to the maximum 450-V level. Apparently, subjects could not draw a parallel between their obedience to Shelton and the teacher's obedience to them.

How do we reconcile a finding like Shelton's with the life-changing testimonials of individuals who found the strength to resist the unwanted demands of authority after participating in, or otherwise learning about, the obedience experiments (e.g., Appendix I in Milgram, 1974a)? One possibility is suggested in an insightful letter written to Milgram in April 1982, by a former participant in a Milgram-type experiment at the University of Minnesota in 1967. He wrote: "I'm writing to thank you for making a major contribution to my understanding of myself and of the meaning of the values I have." He wrote that he learned a number of things from his participation in the experiment, one of which was "that it is easier for me (although hardly simple) to recognize and avoid situations in which authority and obedience play significant roles (e.g., the military, many government and business organizations) than it is to defy authority within such situations." That is, contrary to what is implied by Gergen's enlightenment-effects notion, knowledge does not or cannot always lead to action. Being enlightened about the unexpected power of authority may help a person to stay away from an authority-dominated situation, but once he or she is already in such a situation, knowledge of the drastic degree of obedience that authorities are capable of eliciting does not necessarily help to free the individual from the grip of the forces operating in that concrete situation; that is, to defy the authority in charge.

Summary and Conclusions

In this article I set out to present a status report on four important questions and issues surrounding the obedience paradigm, grounded in systematic analysis—something which had heretofore not been done with these questions and issues. My analyses involved a variety of methods: literature reviews, a person-perception experiment, and correlational analyses. On the basis of these analyses, I believe that the following conclusions are called for. First, in all likelihood,

Milgram's experimental authority was perceived by subjects as embodying a combination of a legitimate authority and a scientific expert. Second, a review of prediction studies found that while naive subjects generally underestimate actual obedience rates, the gap between estimated and actual obedience rates is often quite a bit smaller than what Milgram found. Third, with one exception, in all studies permitting a comparison between male and female subjects, no gender differences in obedience have been found. And fourth, rates of obedience show no systematic change over time: Two correlational analyses between year of publication and obedience outcome showed no relationship whatsoever between when a study was conducted and how much obedience occurred. In each case, the wider implications of each of these findings were also discussed.

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Appendix

List of Obedience Studies and Their Findings (in Obedience Rates) Used in the Correlational Analyses Reported in the Article

Study	Country	Obedience rate (%)
Milgram (1963) ^a	United States	
Exp. 1		65
Exp. 2		62.5
*Exp. 3		40
Exp. 5		65
Exp. 6		50
Exp. 8		65
Exp. 10		47.5
Holland (1967)	United States	75
*Ancona & Pareyson (1968)	Italy	85
Rosenhan (1969)	United States	85
*Podd (1970) ^b	United States	31
Edwards, Franks, Friedgood, Lobban, & Mackay (1969) ^c	South Africa	87.5
Ring, Wallston, & Corey (1970)	United States	91
Mantell (1971)	West Germany	85
Bock (1972)	United States	40
Powers & Geen (1972)	United States	83
Rogers	United States	37
Kilham & Mann (1974)	Australia	28
Shalala (1974)	United States	30
Costanzo (1976)	United States	81
Shanab & Yahya (1977)	Jordan	73
Shanab & Yahya (1978)	Jordan	62.5
*Miranda, Caballero, Gomez, & Zamorano (1980)	Spain	50
Schurz (1985)	Austria	80

Note. Studies preceded by an asterisk were included in the second, but not the first, correlation. (See the body of the article for an explanation.) Some studies listed consist of more than one condition. In such cases, the obedience rate reported is for the condition that represents the methodological replication of Milgram's standard or proximity conditions (i.e., Experiments 1, 2, 3, 5, 6, 8, or 10 in Milgram, 1974a).

^aAlthough the numbers designating Milgram's experiments are the ones he used in his book (Milgram, 1974a), all of his obedience experiments (other than pilot work) were conducted between the summer of 1961 and the end of May 1962. In the correlational analyses, they were all designated by the year 1963, the year of the first publication of his obedience findings. ^bThe obedience rate found by Podd (1970) does not appear in his dissertation, but was provided by him in a personal communication. ^cThe study by Edwards et al. (1969) was conducted by third-year psychology majors for a course in Experimental Social Psychology at the University of Witwatersrand in Johannesburg, South Africa. Their instructor, L. Melamed, sent a copy of the report to Milgram on October 23, 1969. In his book, Milgram (1974a) mentions South Africa as one of the foreign countries where replications of the obedience experiments had been conducted, but gave no reference for it. Since in searching the literature I have not found any other South African obedience study, this is the one that, in all likelihood, Milgram had in mind.