

Thesis  
A1  
1927  
W23

A Thesis  
submitted to the Committee on  
Graduate Study and Degrees in  
partial fulfillment of the re-  
quirements for the degree of  
Master of Arts, University of  
Buffalo

by  
Mazie Earle Wagner.

June 1927.

A STUDY OF  
SUPERSTITIONS and THEIR SOCIAL  
and PSYCHOLOGICAL CORRELATIVES  
AMONG COLLEGE STUDENTS.

Superstitions and Their Social and Psychological Correlatives Among College Students.

Introduction

There are two extremes in the perception of causation: first, the superstitious and naive; second, the objectively scientific. The first was the method of thought of all primitives; the second, as we are told by J. B. Baillie<sup>(1)</sup> is not only a recent acquisition of the human race, but at the same time a local phenomenon. For the most part, only a small very select group of investigators have accepted the rigorous, abstract, dispassionate, objective, experimental, verifiable research manner of scientific investigation of cause and effect in accordance with such principles as the law of contradiction<sup>(2)</sup> and the law of parsimony. The large mass either slowly accept the dicta of the scientist or still cling to the explanations offered by primitive science, folk lore, superstition. To quote Dresslar, "The popular notion of what constitutes scientific evidence is sadly in error. Great masses of people have a very vague conception of what is meant by proof. When multitudes of people are willing to believe that bad luck follows directly on the stepping over a broom and are willing to evidence the fact by recalling

---

(1) "Studies in Human Nature" pp. 242

(2) Levy-Bruhl "How Natives Think" pp. 76.

instances where this was the case, what sort of an idea can they have of cause and effect?" (1)

To look for a moment at the words "scientific" and "superstitious":

The scientist assumes that matter is explicable in physical terms, that physical effect is the consequent of physical terms, that the world is a "closed system" within which there is no room for the unknowable, or saying it differently, he maintains that eventually, with diligent striving, all the laws of cause and effect may be known. His method is objective; that is, he looks without and not within himself for his explanations; and above all, he endeavors to look with an unprejudiced, dispassionate eye upon all phenomena.

Superstitious thought-behavior, on the other hand, is characterized by mysticism and magic (2); it preys upon the ignorant (3) and suggestible (4); is nourished by the emotions (5); and grows "out of a naive belief in the all-pervadingness of mind or spirit, and the possibility that man may know this universal mind through

---

(1) Dresslar, "Education and Superstition", p. 213.

(2) Levy-Bruhl, op. cit. p. 386.

(3) Park and Burgess, "The City" p.128, and Dresslar, p.143.

(5) Dresslar, p. 141, and Sumner p. 21.

(#) Sumner, "Folk Ways", p. 21.

the suggestions made to him by the common things and events about him." (1)

Between the scientific and the superstitious, there is a wide intermediate common ground, occupied by blends and patterns of the two systems of thought, somewhere into which the "man on the street" fits.

It is a commonplace that superstition is widely diffused throughout all societies; that, linked with an animistic religion and with social taboos, it is elevated to a place of major importance in the mind of primitive man, and that it remains as a distinct and frequently controlling type of behavior even among civilized people. More than that, there is abundant evidence to show that superstitious practices are maintained among educated people including college students. (2)

---

(1) Dresslar, op. cit., p. 141.

(2) "I have gathered directly from the minds of 875 different students, whose average age was about 19 years, nearly 10,000 specimens of common superstitions. These students were engaged in the task of preparing to teach in the public schools of this country, and were selected for this purpose by reason of general intelligence and worthy moral character. Not only were they intelligent in the ordinary meaning of this term, but they had passed with credit through the elementary schools and in addition had spent from one to three years in higher scientific study... The percentage of belief in the 10,000 superstitions (above mentioned) was nearly 45." Dresslar, "Suggestions on the Psychological Causes of Superstition", American Journal of Insanity, Oct. 1910.

6

It is true that members of the latter group frequently allege that they hold to their beliefs and practices largely "for fun" or behave "with the crowd without belief," nevertheless they do maintain them as part of their overt behavior, and it is not unlikely that through such well-known mechanisms as rationalization and defense reaction, they conceal even from themselves the significance of these beliefs and practices.

Although there is voluminous literature as to the content of superstition, its genesis, diffusion and distribution among various groups; relatively little has been written concerning its psychological basis, more particularly the psychological mechanisms by which it persists among sophisticated, formally educated persons, such as a college undergraduate body. Certain authors have made incidental inferences on this point; but few have based these inferences upon any more than general observation. We may quote the following:

Dresslar<sup>(1)</sup> attributes this clinging to superstition to a "Willingness and phyletic, instinctive desire to believe in certain causal relations,<sup>(2)</sup> which have not and cannot be proved to exist through a course of reasoning, through revelation or through direct observation." He feels that this superstition "grows out of the belief in the all-pervading-ness of mind or spirit". "There is in supersti-

---

(1) "Education and Superstition" pp. 141-143.

(2) Author's italics.

tions feeling a strong element of fear, which fear varies in intensity with mental and physical condition....and is stronger at night than in the day time,....and stronger in sickness than in health." "Superstitions represent in part those conclusions which men have adopted in order to free the mind from the strain of incomplete thinking.... It is both physically and mentally very tiring to hold in mind a series of condition and at the same time prevent them from shooting together into some sort of a denouement. The untrained and instinctive mind reaches conclusions quickly... Thus it may reach quasi-generalizations itself, or.. accept the generalizations passed down by tradition." "Belief in superstition is closely associated with narrow experience, unscientific observations, the undue persistence of early conclusions and the natural tendency of the mental life to reduce experience to rules or generalizations for guidance in practical life."

In a second article, (1) Dresslar makes the further statement that "under any condition, belief is either a matter of mere passive acceptance, or a feeling of logical compulsion brought on by reason of the relations among the facts present in consciousness. If fear is there, logic counts for little.... But whence comes this fear and faith, this satisfaction in superstitious conclusions? It is, I believe, a psychical predisposition which cannot be under-

---

(1) "Suggestions on the Psychology of Superstition", American Journal of Insanity, Oct. 1910.

stood, save as we consider it in its genetic aspect. It is a mental remnant... It is a belated expression of human progress and harks back to that stage in development when the conscious life was just beginning the quest for a knowledge of cause and effect...(It) cannot be eradicated as can as can the appendix. It is a produce of the emotional life and imposes itself on the intelligence in spite of science and even critical personal knowledge."

One almost wonders if Dresslar would postulate an instinct of superstition, a pulsating, driving, inherent force, that in the absence of a better outlet, at least, seeks expression in superstition; or is it but a refined and specialized brand of instinct of curiosity. We do glean, however, that superstition has its roots in fear and lack of knowledge, and that it answers indecisions under the strain of which we grow weary. In terms of the Gestalt Psychologist, it closes the gestalt and satisfies, even though the closure is not the correct one.

He further says: (1) "The fundamental fact, and the one of dominant importance, however, is that men do invariably seek to explain; that they attempt to make some explanation of things or to come to some conclusion about them. Without this tendency, science would never have been born.

---

(1) "Superstition and Education" p. 213.



Levy-Bruhl would not agree with Dresslar. He would say that superstition is due to a definite type of thought, which is based upon the assumption of a "spiritual" non-tangible, invisible reality; the thoughts of the introverted subjectivist, animist or mysticist; in Dresslar's terms growing out of the "naïve belief in the all-pervading-ness of mind or spirit." He says (1): "The perception of primitives is oriented differently from our own, and not pre-eminently concerned, as ours is, with the characteristics of the beings and manifestations which we call objective. To them the most important properties of the beings and objects they perceive, are their occult powers, their mystic qualities... The primitive, far from regarding the mystic perception in which he has no part as suspect, sees in it, as in the dream, a more precious and consequently more significant communication with invisible spirits and forces."

"Conversely, when collective representations imply the presence of certain qualities in objects, nothing will persuade the primitives that they do not exist. To us, the fact that we do not perceive them there is decisive. It does not prove to them that they are not there, for possibly it is their nature not to reveal themselves to perception, or to manifest themselves in certain conditions only. Consequently, that which we call experience, and which decides, as far as we are concerned, what may be admitted or not admitted as real, has no effect upon collective representations.

---

(1) "How Natives Think", pp. 63 and 68.

"The superstitious man, and frequently also the religious man, among us, believes in a twofold order of reality, the one visible, palpable, and subordinate to the essential laws of motion; the other invisible, intangible, "spiritual", forming a mystic sphere which encompasses the first. The primitive's mentality does not recognize two distinct worlds in contact with each other, and more or less interpenetrating. To him there is but one. Every reality, like every influence, is mystic, and consequently every perception is also mystic."

Judd<sup>(1)</sup> states: "Primitives, and all men up to a recent scientific period, were more concerned with having the beliefs of the time, and with an internal consistency in their thinking, rather than with external consistency, i.e., whether or not belief was checked by outside fact."

N. N. Puckett<sup>(2)</sup> in defining superstition says: "Some folk beliefs are simply incorrect concepts of natural phenomena which have no bearing on the affairs of life, but by far the greater part of them have to do with the explanation and especially the control of this aleatory element. In the main, these superstitions represent simply the effort of mankind to adapt himself more completely to his imaginary environment, to avoid every possible spiritual danger, and to utilize more fully the last fraction of spiritual power

---

(1) Judd, "Psychology of Social Institutions".

(2) Puckett, N. N., "Folk Beliefs of Southern Negro", p. 576.

in the unequal contest of life." Here we again have a hint of animism and mysticism, of the naïve belief in the all-pervading-ness of mind, as the basis of superstition, plus possibly some pulsating, vital force aimed at an explanation of things. He continues: "Superstitions arise and persist because all societies, or all portions of one society, fail to advance at equal rates of progress. The more educated upper strata have reached that understanding of scientific law which enables them to dispense with many means of controlling the aleatory element still in vogue with the less fortunate middle and lower classes. Thus the upper classes speak of such lower class beliefs and practices which have no scientific basis as superstitions, though to those who accept them, they are not so regarded. This shows us, of course, that superstition is purely a relative term, depending entirely upon a person's stage of culture."

Superstition, then, is something more than erroneous causal hypotheses. It must be founded upon the concept of a universal spirit-mind entity. The superstitious feel that if they can but get in empathy with "the powers that be", powers of a non-tangible, non-localizable, unpredictable nature, if such contact can be made, then persons and things can be manipulated at will.

Dr. Puckett in his collection of Negro Superstitions, first enumerates an abundance of negro superstitions, then describes how the negro of the south will think himself "hoodooed" or cursed by someone, and actually become

ill at the suggestion of it; then, upon the counter-suggestion of a voodoo doctor of prestige, be cured again by suggestion. And yet, the author of "Folk Beliefs of the Southern Negro" never uses the word suggestion, nor in any way points out the extreme suggestibility of the Negro, and his consequent voodooism and superstition.

Fraser in his "Golden Bough" makes no mention of superstition; but of magic he says that it "assumes that all beings, whether human or divine are in the last resort subject to those impersonal forces which control all things, but which nevertheless can be turned to account by any one who knows how to manipulate them by the appropriate ceremonies and spells." (1)

Wundt (2) would stand with Levy-Bruhl in contradicting that superstition is the behavior resultant of an attempt at explaining phenomena. It is rather a point of view; an outlook on life. He says: "We utterly confuse primitive thinking with our own scientific standpoint, when we explain it by the need for the interpretation of phenomena. Causality, in our sense of the word, does not exist for primitive man. If we would speak of causality at all on his level of experience, we may say only that he is governed by the causality of magic. This, however, receives its stamp not from the laws that regulate the connection of ideas but from

---

(1) p. 51.

(2) "Elements of Folk Psychology" p. 93.

the forces of emotion. Mythological causality of emotional magic." "In so far as the mythology of primitive man gains a permanent foothold and influence, it consists of a belief in magic and demons." "On the primitive stage, death and sickness are the main sources of belief in magic and in demons. From this as a center, the belief radiates far out into all departments of life." "Belief in magic assumes the form of protective magic, of magic defense against demonical influences." Here again, we have the thought that magic (or superstitious practices, the art and not the theory of superstition) is dependant upon a different fundamental assumption, than science, -- the mystic viewpoint. Science and superstition have this in common, that the course of nature is determined by the operation of immutable laws, acting mechanically; superstition having the additional hypothesis of animism and mysticism.

Perhaps in this citation from Wundt we have the beginning of the thought that both science and magic depend upon the culture of the period plus the suggestibility of the individual or group to that culture. However, more fundamental than this in the determining of who, in this culture of ours, will or will not be superstitious, is the emotional conditionings and forces, according to Wundt.

Sumner (1) defines superstition as irrational uncritical belief, the result of suggestion. He says: "A

---

(1) "Folk Ways", p. 21.

crowd always has a common stock of elementary faiths, prejudices, loves.... This common stock is acted on by the same stimuli in all persons at the same time, hence the great influence of omens and all popular superstitions of a crowd." "Superstitions arise in crowds." "The power of watch words consists in the cluster of suggestions which have become fasted upon them." The following research most closely bears out this theory.

The authors pretty generally agree that superstition is founded upon a mystical belief in the all-pervadingness of mind or spirit, empathy with which may be obtained if the correct technique is followed. One people is perhaps more superstitious than another, dependant upon the culture level, or the relative enlightenment or ignorance, of the group in question. Some authors attribute superstition to a felt need of explanation of phenomena, a requirement due to the dissatisfaction or pain of keeping thought suspended, or perhaps an explanation necessitated by a driving curiosity or intended to allay fear. One author indicates that superstition is closely related to suggestion, that superstition arises and spreads through "crowds" by suggestion. A careful perusal of all the literature might reveal even more theories of the cause of superstition. It is likely, however, that these hypotheses would be based upon poorer insight and less material than the above.

There is, the, a pretty general disagreement as

to the psychological causes of the relative superstitiousness of groups, and nothing even indicative as to the difference in superstitiousness of individuals within groups.

Why then this perennial growth of superstition? Why this constant acceptance of superstition by individuals in each oncoming generation? And who are the superstitious? How else characterize them, how catalogue them, how prognosticate who will be superstitious? Or better still, how lure them from superstitious unto scientific ways? The question needs investigation, and is well within the field of the psychologist. (1) Superstition, outworn science, the belief of the laggard, the unpruned deadwood on the tree of knowledge, an offspring of a dead theory of mysticism and animism, the possession of the gullible, the uncritical, the suggestible, why does it continue to remain among the living, although long dead and odorous and begging burial?

The purpose of this thesis, then, is to study the nature and distribution of superstition among college freshmen, not as an end in itself, but as a starting point for making further inquiry into the psychological and sociological factors entering into the holding of these superstitions by the members of this undergraduate group.

The plan of this experiment briefly is:

I. To obtain the amount and nature of superstition (by blank adapted from Dresslar and revised by the experimenter as described below).

II. To find relationships between amount of superstition and

- (a) Intelligence
- (b) Religion Sects
- (c) Sex
- (d) Age
- (e) Type of high school attended; rural vs. urban.
- (f) Race; Native Born vs. Foreign born; "Old" vs. "New" Immigration.
- (g) Emotional and Social Control.
- (h) Religiosity -- the Acceptance of Religious Dogma.
- (i) Suggestibility.

III. To offer a theory of Superstition.

Assuming for the moment that we have progressed, that the more desirable attitude is that of healthy criticism and analysis of facts of the case, that the scientific attitude is good;

Assuming also that much confusion of thought and action in this day results from the uncritical acceptance of



conclusions by people who are neither qualified to render nor accept them;

Then, some attempt should be made to encourage the former and minimize the latter. The solution of any problem demands first and foremost an analysis of its causes. The scientific procedure, then is to locate the problem by developing some method for its detection, then to find its correlative factors, assume causal relationships, where the correlation is high and then check these factors by elimination and noting the effects upon superstition.

The most scientific method, is, of course, the purely objective, i. e., one which will reach the superstitious life of the subject without making him aware of it. The most reliable measure of quality and quantity of superstition would be obtained from a controlled experiment. The completely objective method would be the observation of physical action upon the presentation of a stimulus, ie. the presence of a black cat, the actual knocking on wood when good fortune is recounted. (1) Here, however, no observation on the inner turmoil that might be caused by the suppression of such a habit could be made, inasmuch as the actual thought processes can not at this time be followed. We would not even have a delayed response

---

(1) As an illustration of a purely objective investigation of superstition, the following citation is offered: "Walking under a ladder is considered very unlucky.. In the outposts (Newfoundland) girls will climb the rockiest cliffs to avoid such a contingency. On one occasion in St. Johns, where a ladder extended across the sidewalk, of 127 girls who came along, only six ventured under it, the rest going along the

(i. e. the Kent-Rosnaff Free Association Tests) to guess at the emotional disturbance.

On the other extreme is the completely subjective method of the early questionnaire which contains such questions as "Do you believe that knocking on wood helps propitiate the fates, etc." This is the type of question Dresslar asks.<sup>(1)</sup> He requests the student to list any and all superstitions of which he or she had heard and indicate either "Full", "Partial" or "No Belief." This method is unsatisfactory on account of the confusion between belief and action.

To adopt the completely objective procedure would limit the superstitious study greatly, for a large number deal with situations not possible in the school laboratory. So the experimenter, attempting to detect the number and character of superstition was forced to rely upon the questionnaire. An attempt to lift the questionnaire out of the realm of belief was made by wording as many questions as possible -- have you done, or do you do, rather than have you believed or do you believe. So our procedure stands midway between the completely subjective and objective attempts.<sup>(2)</sup>

---

gutter in mud ankle deep." Birgher, "Current Superstition" p. 83.

(1) "Superstition and Education."

(2) The whole history of questionnaires has been one of a gradual evolution from the frank direct question to the very subtle, apparently irrelevant one. It is hoped that the improvement on the enclosed questionnaire is continued.

The Questionnaire on Superstition:

In order that the superstitious beliefs current among the group studied might be investigated as scientifically as possible, the following steps were taken to produce a satisfactory questionnaire:

Fletcher Bascom Dresslar in his very complete publication "Superstition and Education" has listed 131 pages of classified superstitions, giving the original, its source and the changes and interpretations it has undergone. He gives a second condensed list of the more common superstitions. (1) The majority of the second list was used in the first questionnaire, together with selections from the first more complete list and some more local superstitions not mentioned by Dresslar.

A questionnaire of 75 questions was prepared. This questionnaire was circulated among a group of summer students of various backgrounds, interests and experiences. They were requested not only to check those superstitions to which they reacted positively, but more particularly to list, on a page provided, any superstitions that they or their friends or acquaintances reacted to, which were not included in the questionnaire. The same questionnaire with the same instructions, was circulated among a pre-freshman group. Eighty of the summer school students and the entire pre-freshman group of 37 students returned questionnaires.

---

(1) pp. 190 - 193.

The fifty-two most often checked superstitions, together with space for superstitions not included, was drafted into a second questionnaire. This was given the entire freshman student body of the University, 186 in number (1) for the year 1926-27 on Saturday morning, September 1926. The thirty-three pre-freshmen who became freshmen of good standing were not included. On the same morning, the group filled out a questionnaire for the Personnel Office, data from which has been described below. In describing the method to be followed by the class in answering the questionnaire, every effort to avoid the unpleasant connotation and flavor of superstition was made. Pages 21, 22, and 23 are the questionnaire as finally given.

Dresslar, in his valuable work, has three categories: Full Belief, Partial Belief and No Belief. He emphasizes the fact that Partial Belief is belief, nevertheless. (2) In this research, in place of the word belief, whenever possible, the questions were worded, "do you do or act or behave in this or that way?" In place of Dresslar's three categories, four were used: Always, Often, Never, and Used-to do or act in this manner. Here, we hold with

---

(1) This is not quite the entire class inasmuch as some few were absent.

(2) "Three classes were chosen instead of two for the sake of helping them to tell the truth. Partial belief means that "one would rather be on the right side," that there was a "feeling of belief", but it would be difficult to decide as to its exact strength. It must be born in mind, however, that "partial belief" is belief. It is an indefinite and conditioned belief to be sure, but it may be as persistent and as

Dresslar that the concept that is often acted upon, after all has modified behavior to that extent, and should be considered accordingly. The subjects were further asked to place but one check in the column provided if the act was committed with belief, that is if he would be uncomfortable, were the act to be omitted; and two checks if no discomfort would be experienced at its omission.

In scoring the questionnaire, six counts were given for a single check (practice with belief) in the "always" column, four counts for double check in this column; five counts were given for a single check in "often" column, and three counts for double check in "often" column. It was felt that behavior, which when omitted, gives discomfort, which is in accordance with the entire personality make-up, is of more importance, than that done in the manner of a habitual manual mannerism. A separate score was tabulated for superstitions which were formerly, but are not now, reacted to positively (the "Used-to-do" column) with counts of one and two. This, like any other scoring of superstitious grades, of necessity, had to be arbitrary.

The following pages show the 25 most frequent superstitions ranked according to the number of individuals, girls and men, who act upon the concept.

---

Thoroughly superstitious as "full belief." Dresslar, "Superstition and Education" p. 3.

## 25 Superstitions in order of rank

	Maintained Beleifs			Discarded Beleifs			Grand Total
	Girls	Mens	Total	Girls	Mens	Total	
Tap wood after making a boast	50	58	108	8	25	33	141
Combination of wish with falling star, 1st star, load of hay and simultaneous remark	65	36	101	7	14	21	122
Avoid posts bet. self and friends	31	30	61	10	13	23	84
Combination: bringing of company by dropping of knife, fork, spoon and dish-rag	30	23	53	2	9	11	64
Pick up pins for luck	33	16	49	4	19	23	72
#13-lucky or unlucky	15	34	49	2	4	6	55
Ringing of ears indicates one is spoken of	28	16	44	2	7	9	53
Material in horoscope, reliable	15	25	40	0	1	1	41
Pick 4-leave clovers for luck	21	16	37	10	25	35	72
Black cat brings bad luck	15	21	36	5	18	23	59
Dreams prophetic	16	20	36	1	2	3	39
Walk about chair to change luck at cards	12	23	35	1	9	10	45
Death foretold by dog howling, bird flying in window.	10	23	33	1	3	4	37
Friday, 13th, unlucky	13	19	32	1	5	6	38

(Superstitions continued).	Maintained Beliefs			Discarded Beliefs			Grand Total
	Girls	Men	Total	Girls	Men	Total	
Foretelling of future by palmist, etc.	14	18	32	1	2	3	35
Accidents come in 3's	10	20	30	0	0	0	30
Itching palm brings money	13	16	29	3	7	10	39
Horse-shoe brings luck	6	22	28	3	29	32	60
Breaking mirror brings bad luck	15	12	27	11	12	23	50
Refrain from singing before breakfast	9	15	24	3	2	5	29
Spilling salt brings bad luck	17	5	22	1	5	6	28
Early losing at cards - later winning	4	18	22	0	1	1	23
Early winning -- later winning	8	13	21	0	1	1	22
Walking under ladder brings bad luck	10	10	20	3	10	13	33
Third light brings bad luck	4	16	20	0	1	1	21

The fatality consequent to the third light is a recent superstition spread by the soldiers during the Great War; and therefore, not mentioned by Dresslar.

The prevalence of magical control of chance at cards is not so popular among Dresslar's group.

The rural superstitions found in Dresslar's collection, i.e. magic qualities of rooster crowing, load of hay, white horse, etc., are not so popular among the student body of an urban university, such as the University of Buffalo.

Individual tabulations for the men and girls gives the interesting results that the girls are particularly addicted to some superstitions, i. e., Wishing with falling star, 1st star of evening, etc., picking up pins, and a belief in the bad luck of spilling salt; while men are addicted to others, such as picking up horseshoes, card superstitions, third light on same match bringing bad luck, etc. It is quite obvious why this would be so. (For further consideration of sex differences, see page 30 ).

Superstition of the group as a whole:

The 186 freshmen subjects reported beliefs totaling 1423, all of which still influence their behavior, that is about 7.6 per person; the 119 men reported 757 superstitions or 6.5 per man; the 57 women, 666, or 11.6 per woman. Besides the 1423 beliefs in superstitions adhered to, the group reported 430 superstitions which had been dropped, or 2.3 per person; the men having dropped 323 or 2.7 per man, the women 107, or 1.8 per woman. (1)

The histogram, on following page, shows the general spread of superstition based on the scoring, as described on page 24. From it, it may be seen that the mode is considerably lower than the median; the mode being at the interval of 10-19, the median for the entire group being 26. This shows a skewing of the curve to the left,

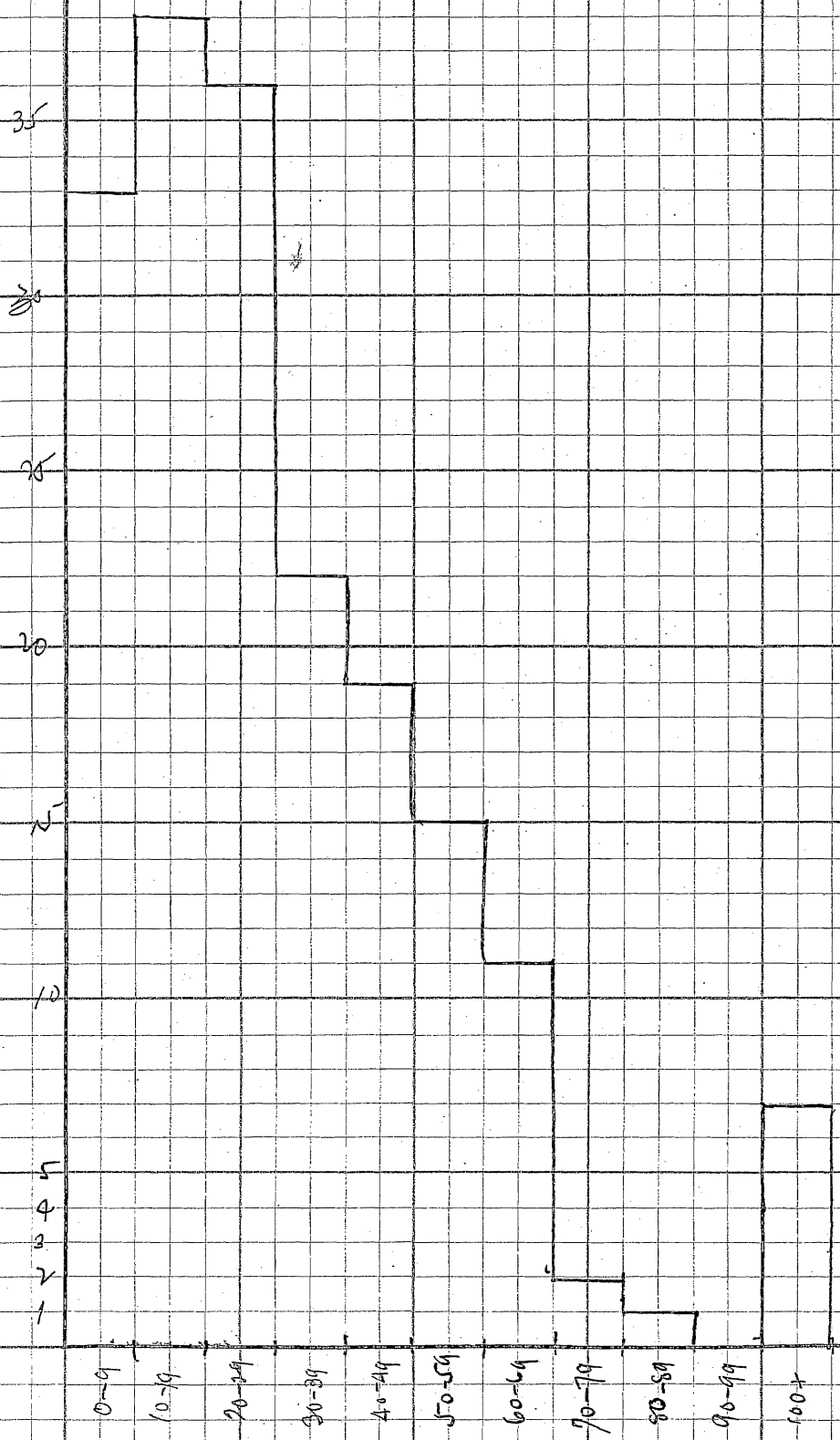
---

(1) See table page 30.



40  
35  
30  
25  
20  
15  
10  
5  
4  
3  
2  
1

0-9  
10-19  
20-29  
30-39  
40-49  
50-59  
60-69  
70-79  
80-89  
90-99  
100+



illustrative of the fact that there is the tendency of such a group as studied to be marching away from superstition, the laggards who have not caught up with the group in this elimination of superstition, trailing after the main advanced guard at various distances. This study is perhaps the most interested in the characteristics of this atypical, more superstitious group who have been tardy in the progress toward scientific method and scientific findings; who are, so to speak, still in a culture period outgrown by the more forward-looking group.(1)

#### Intelligence Quotient and Superstition:

A correlation was run for the Intelligence percentile ratings, as determined by the University of Buffalo entrance examination (The 1926 American Council Test), and Superstition; a correlation ratio of  $-.12$  being obtained. Without going into any defense of the intelligence examination as given, we might at least say that there does not seem to be any correlation between the ability to pass intelligence examinations and the quality, superstition. Nor do we find particularly the opposite.

When a correlation was obtained between the amount of superstition dropped and percentile score on the Intelligence Tests, a positive ratio of  $.058$  was obtained, practically a chance scattering.

---

(1) Puckett, N.N., op. cit., pp. 576 - 577.

Religious Sects and Superstition:

A refined table of the findings as to the superstition of the various religious groups may be found below. Sufficient to say here that of three main groups, -Catholic, Protestant and Jewish, the Jewish, on the whole, displayed the least superstitious belief, and the Catholics the most. The numbers of each are, however, not large enough to make the findings over significant.

	No. Men	No. Women	Men Ave. Super.	Women Ave. Super.	Total Ave. Super.	Men Median Super.	Women Median Super.	Total Median Super.
Jewish	12	9	18.7	30.8	24.0	13.5	24.0	15.0
R. Cath.	31	13	36.2	28.6	34.2	29.0	28.	28.5
G. Cath.	2	0	35.5	--	35.5	35.5	--	35.5
Presby.	10	12	27.3	50.0	39.7	26.5	42.	33.5
M. E.	13	8	19.5	48.1	30.4	13.	41.5	24.
Luth.	5	9	16.8	28.3	24.0	10.	30.	21.5
Baptist	8	3	28.4	43.	30.5	25.	41.	31.
Congreg.	6	1	32.3	82.	39.4	26.	82.	26.
Disciple	4	1	19.2	3.	16.	19.5	3.	18.
Unitarian	1	0	14.	--	14.	14.	--	14.
Chr. Science	1	0	26.	--	26.	26.	--	26.
Evangelical	1	0	20.	--	20.	20.	--	26.
Undem. Prot.	24	11	26.5	55.2	35.5	21.5	35.	24.
Total Prot.	74	45	24.4	37.5	30.	20.	37.	24.
Total	119	67	27.1	35.2	30.3	22.	34.	26.

For Entire Group -- 1st Quart. 10.5 Median 22. 3rd Quart. 38.5

### Superstition and Sex:

In referring to the table on the preceding page, it is interesting to note that with the sole exception of the Catholic group, whenever the number of individuals considered is large enough to be at all significant, the women have higher superstition scores than the men.

The following table is an interesting comparison between the men and women:

	No. of Each	Present Super's.		Discarded Super's		Total	
		No.	Ave.	No.	Ave.	No.	Ave.
Men	119	757	6.5	323	2.7	1079	9.0
Women	57	666	11.6	107	1.8	773	13.3

The average number of superstitions for the women is considerably higher than for the men; but what is more interesting and indicative is the fact that the men have dropped a greater proportion of their superstitions -- almost half, whereas the women have dropped only about one-sixth of theirs. This is very likely due to the wider experience of the men, the fact that they have greater and more contacts with facts and situations. There may also be a second factor, namely that the taunt of superstitiousness when applied to men is perhaps felt to be a sharper one than when applied to women. Women are thought to be more superstitious, in other words it is a "womanly" or "Feminine" trait, and very unsatisfactory when applied to men.

The following table considers the medians of the entire group; -- superstition scores related to sex:

	No.	1st. Quart.	Median	3rd Quart.
Men	119	10.5	22.	38.5
Women	<u>67</u>	<u>19.</u>	<u>34.</u>	<u>56.</u>
Total	186	13.	26.	44.

The material collected, as above, in no way contradicts the popular concept that women are relatively more superstitious than men.(1) It would seem that these irrational fictions (group myths, magic, or folk lore) are a greater part of women's culture; magic, the early science produced by women, being handed down from mother to daughter through the ages, or from women teachers to their girl charges(2)

---

(1) "The psychological differences of sex seem to be largely due, not to differences of average capacity, nor to differences in type of mental activity, but to differences in social influences brought to bear on the developing individual from early infancy to adult years." Helen B. Thompson, "Psychological Norms in Men and Women" p. 182.

(2) "In early times.. the men frequently formed clubs and lived apart from the women; and even where this did not happen, the men and women had no mental life in common. To this contempt for women also was added a superstitious fear of them, going out of the primitive belief that weakness or any other bad quality is infectious and may be transferred by physical contact or association." W.I. Thomas, "Sex and Society", p. 294.

men, being less housed and having greater contact generally than women, (1) lose this primitive science quicker, taking onto themselves the science of the day in its stead. It would be expected that when irrational beliefs, or any system of beliefs, are part of a culture, the greater part of such a culture they may be, the greater amount will be absorbed by the individuals producing and transmitting such a culture. As stated above, women's culture contains more superstition than does that of men. Also, the more suggestible the individuals of which a group may be, the larger portion of the current unverified beliefs will be absorbed by them. However, from the two suggestibility tests given the group (2), there is no indication that the women are more suggestible than are the men, popular belief to the contrary.

#### Age with Superstition:

When correlating age with superstition scores, a ratio of  $-.19+$  was obtained; that is the younger the individual, the more superstitious he appears to be, the older the less.

---

(1) "No where in the world do women as a class lead a perfectly free intellectual life in common with the men of the group, unless it be in restricted and artificial groups like the modern revolutionary group in Russia... The mind and the personality are largely built up from suggestion from the outside, and if the suggestions are limited and particular, so will be the mind." Ibid, p. 311.

(2) Discussed more completely below.

Surely here it is not a matter of environment; for on the whole, one would expect the older ones to come from homes less well equipped with learning, if they come from homes differing in any way from the usual. There is, however, a tendency for the older individuals to have dropped more of their superstitious beliefs than the younger ones. When age was correlated with the amount of superstition dropped, a correlation of .12+ was obtained, showing that the older tend to exceed the younger in the number of superstitions eliminated. Said otherwise, the greater fund of experience the individual has to draw upon, the less suggestible will he or she be to irrational concepts.

High School Attended and Superstition:

An attempt was made to find whether those freshmen coming from small and small-town high schools were more greatly burdened with superstition than those coming from the large and large-city high schools. There is an idea abroad that it is in the rural communities and among immigrant groups that superstition grows to its most luxurious proportions. To investigate whether our data gives any indication that the rural high school graduates are more superstitious than urban high school graduates, the following table was constructed:

Superstition Score	Large High School		Small High School	
	Number	Percent.	Number	Percent.
0 - 9	21	22.1	12	16.2
10 - 19	22	23.1	16	21.6
20 - 29	19	20.	12	16.2
30 - 39	10	10.5	13	17.5
40 - 49	14	14.7	5	6.7
50 - 59	11	11.5	5	6.7
60 - 69	2	2.1	7	9.0
70 - 79	1	1.0	1	1.3
80 - 89	1	1.0	0	--
90 - 99	0	--	0	--
100 and over	4	4.2	3	4.0

The large schools considered were South Park, Hutehinson, Masten Park, Technical, Lafayette and Bennett, of Buffalo. There were forty-four small high schools considered, four of them being parochial schools. Of these, forty-four schools, twenty-six schools sent but one person; nine sent two; four sent three; two sent four; two, five; and one sent nine.

Upon examining the immediately preceding chart, very little can be concluded, except that superstition is not confined to either group of schools, but pretty well distributed over all.



Race and Superstition:

We have already noted, page 29, that the Jewish freshmen were less superstitious than any of the other religious groups. This group are pretty likely to be foreign born themselves, the children of foreign-born, or at most the grand-children of foreign born people. The majority very likely will be found in the so-called "new immigrant" group.

Of the entire group of 186 individuals, but eleven were foreign-born. These were unusually lacking in superstition, due perhaps to wide experience. There were fifty-five (55) of foreign-born parentage. The following refinements were made in connection with this number:

	Sc., Eng.	Fr., Swe., Ger., Den.,	Ital.	Rus., Aus., Pol.,	Tot. F.B.	Tot. Am. Born	% F.B.	% A.B.	% New Imm.	% Old Imm.
0- 9	1	2	3	4	10	23	18.	17.5	18.	17.8
10-19	3	2	1	5	11	27	20.	20.6	15.4	31.2
20-29	2	2	2	7	13	24	24.	18.3	23.7	25.
30-39		1	1	1	3	19	5.	14.5	5.1	6.2
40 - 49		2	1	7	8	11	14.	8.4	15.4	6.2
50 - 59			2	3	5	11	9.	8.4	13.	--
60 - 69		1	1	2	4	9	4.	7.	5.	--
70 - 79						2		1.5		
80 - 89	1				1		1.8			6.2
90 - 99										
100 & over			2		2	5	3.6	3.8	5.1	
Total	7	9	13	26	55	131				

Inspection of the above table, shows that the children of foreign-born are no more superstitious than those of American-born parentage; nor do we find that children of "old" immigrant groups are either more or less superstitious than those of the "new" immigrant group. The number of individuals, however, are small, so that the findings are only indicative.

Emotional and Social Control Related to Superstition:

The following was a portion of the Personnel Questionnaire given each Freshman at College Entrance time. He was asked subjectively to estimate himself and his reactions in the following six types of behavior patterns:

(1) "Are you able to control your temper readily? Or are you subject to fits of anger?" with five steps or grades between unusual control of temper to lack of control.

(2) "Are you self-confident and poised in speaking before others, or when directing others?" from complete confidence to lacking of confidence.

(3) "Do you worry about things a good deal, so as to disturb your sleep and your most efficient mental work?" from constant worrying to little or no worry.

(4) "Have you grit or determination habitually to stick to hard, and perhaps disagreeable, jobs which you have once started?" from decided grit to lack of grit.

(5) "Are you a good social mixer? Can you meet people easily, interest them, and win their confidence?"

Superstition Score	Large High School		Small High School	
	Number	Percent.	Number	Percent.
0 - 9	21	22.1	12	16.2
10 - 19	22	23.1	16	21.6
20 - 29	19	20.	12	16.2
30 - 39	10	10.5	13	17.5
40 - 49	14	14.7	5	6.7
50 - 59	11	11.5	5	6.7
60 - 69	2	2.1	7	9.0
70 - 79	1	1.0	1	1.3
80 - 89	1	1.0	0	--
90 - 99	0	--	0	--
100 and over	4	4.2	3	4.0

The large schools considered were South Park, Hutchinson, Masten Park, Technical, Lafayette and Bennett, of Buffalo. There were forty-four small high schools considered, four of them being parochial schools. Of these, forty-four schools, twenty-six schools sent but one person; nine sent two; four sent three; two sent four; two, five; and one sent nine.

Upon examining the immediately preceding chart, very little can be concluded, except that superstition is not confined to either group of schools, but pretty well distributed over all.

Race and Superstition:

We have already noted, page 29, that the Jewish freshmen were less superstitious than any of the other religious groups. This group are pretty likely to be foreign born themselves, the children of foreign-born, or at most the grand-children of foreign born people. The majority very likely will be found in the so-called "new immigrant" group.

Of the entire group of 186 individuals, but eleven were foreign-born. These were unusually lacking in superstition, due perhaps to wide experience. There were fifty-five (55) of foreign-born parentage. The following refinements were made in connection with this number:

	Sc., Eng.	Fr., Swe., Ger., Den.,	Ital.	Rus., Aus., Pol.,	Tot. F.B.	Tot. Am. Born	% F.B.	% A.B.	% New Imm.	% Old Imm.
0- 9	1	2	3	4	10	23	18.	17.5	18.	17.8
10-19	3	2	1	5	11	27	20.	20.6	15.4	31.2
20-29	2	2	2	7	13	24	24.	18.3	23.7	25.
30-39		1	1	1	3	19	5.	14.5	5.1	6.2
40 - 49		2	1	7	8	11	14.	8.4	15.4	6.2
50 - 59			2	3	5	11	9.	8.4	13.	--
60 - 69		1	1	2	4	9	4.	7.	5.	--
70 - 79						2		1.5		
80 - 89	1				1		1.8			6.2
90 - 99										
100 & over			2		2	5	3.6	3.8	5.1	
Total	7	9	13	26	55	131				

Inspection of the above table, shows that the children of foreign-born are no more superstitious than those of American-born parentage; nor do we find that children of "old" immigrant groups are either more or less superstitious than those of the "new" immigrant group. The number of individuals, however, are small, so that the findings are only indicative.

Emotional and Social Control Related to Superstition:

The following was a portion of the Personnel Questionnaire given each Freshman at College Entrance time. He was asked subjectively to estimate himself and his reactions in the following six types of behavior patterns:

(1) "Are you able to control your temper readily? Or are you subject to fits of anger?" with five steps or grades between unusual control of temper to lack of control.

(2) "Are you self-confident and poised in speaking before others, or when directing others?" from complete confidence to lacking of confidence.

(3) "Do you worry about things a good deal, so as to disturb your sleep and your most efficient mental work?" from constant worrying to little or no worry.

(4) "Have you grit or determination habitually to stick to hard, and perhaps disagreeable, jobs which you have once started?" from decided grit to lack of grit.

(5) "Are you a good social mixer? Can you meet people easily, interest them, and win their confidence?"

from good mixer to awkward in meeting others.

(6)0 "Do you have initiative? Have you the ability and the desire to start new things? Or are you naturally a follower?" from decided initiative to quite docile.

Correlations were obtained between superstitious reactions and these several variables as follows:

Control of Temper. . . . .	+.248
Confidence in self . . . . .	-.01
Worrying . . . . .	-.19
Amount of Grit . . . . .	-.007
Mixing Ability . . . . .	.002
Initiative . . . . .	-.17

There seems to be no relation between confidence in self, amount of grit and mixing ability, as estimated subjectively, and the scorings in superstition. The correlation ratio of .248 between control of temper and superstition, -.17 between initiative and superstition, and of -.19 between worrying and superstition seem to indicate at least a tendency for these several variables to run parallel to superstition. That is, those who have the best and most control of their tempers, who worry least and have least initiative, tend to be more superstitious. The negative correlations between worrying and superstition and between initiative and superstition are so low as to be barely indicative. Very little can be concluded from them. The .248 correlation ratio between con-

trol of temper and superstition is, however, at least an indication; and may be variously interpreted. Control of temper is undoubtedly an introvert characteristic; superstition may also be. Or the correlation may be interpreted to indicate the ease with which an individual accepts current ideas, concepts, beliefs; suggestibility; that is indicating that the person who accepts current folk myths at the same time tends to accept the adage, "That to control oneself is better than to control a city."

Superstition and Religiosity:

The following is part of the questionnaire given the freshmen at their entrance; by the Personnel Department:

"Consider each of the statements below. If you are strongly convinced that a statement is true, underscore "2" on the extreme left. Underscoring "1" means that you are fairly certain a statement is true, or that it is more right than wrong. If you draw a line under "0", it means that you are entirely uncertain, that you have no opinion on the subject. Underscoring "-1" means that you consider it more wrong than right, and "-2" indicates that the statement is entirely false, that no reasonable person would consider it true.

- 2 1 0 -1 -2 Where religion is antagonistic to modern science, religion should be allowed precedence.
- 2 1 0 -1 -2 Prayers to God will be answered if the one praying is deserving.

- 2 1 0 -1 -2 No Government (e.g. Mexico) has the right to interfere with religious practices.
- 2 1 0 -1 -2 There is plenty of justification for the belief in a life after death.
- 2 1 0 -1 -2 Man was created directly by God, and not indirectly from lower animal forms as evolution teaches.

The following are the correlation ratios obtained between this material and the superstition scorings:

Religion should be allowed precedence . . . .	.02
Prayers of the deserving will be answered . .	.18
Government has right to interfere with religion.	.06
Plenty of justification for immortality . . .	.12
Man was created by God, did not evolve. . . .	.177
Total Religion with Superstition . . . . .	.07

In each case we have some slight positive correlation between the religiosity and superstition of the individual. The various religious reactions seem, to counteract each other and a correlation ratio between this combination and superstition is obtained, it is less than for any one of them except number one. None, however, are more than a suggestion of a tendency.

Of the series, number one is most interesting. When the scattergram dealing with this question is examined, it is found that those who have highest scores in superstition as well as those who have lowest scores in their acceptance of superstitious beliefs tend to cluster about the



radical side of the scattergram, favoring the precedence of science over religion, that is, those who are moderately superstitious are scattered more evenly and cluster at the center of the chart, are less opinionated on the question of religion being allowed precedence over science, or the opposite. The scattergram for Evolution and Superstition has an indication of the same phenomenon. In the other three religious dogma, there is a tendency for the more superstitious to cling in greater numbers to the conservative edge of the scattergram. That is, those who have high superstitious scores, have been suggestible to the superstitious dogma of their extra-school environment, and at the same time have been suggestible to the biological statements made by individuals of more prestige, the teachers.

It might be interesting to note here that the more suggestible individuals tend to take agnostic and atheistic beliefs more readily than those in whom non-suggestibility, a stand-on-your-own-feet kind of philosophy has been developed. (Correlation ratio of  $-.42$  between religious conservatism and suggestibility was obtained. (1)). Again we have the suggestible, gullible, accepting statements which have been made positively, even though these statements may disagree. (2)

---

(1) See page

(2) No criticism is here intended of the theories of biology, or of religious agnosticism or atheism.

16

In general, the conservative point of view in religion is more widely accepted than is the radical point of view. The conservative reaction is the one that the majority of students of the University of Buffalo, or any other University, has been exposed to most generally in their homes and the societies in which they move. But such attitudes as are represented by the statement that "where religion is antagonistic to modern science, religion should be allowed precedence," and "Man was created directly by God, and not indirectly from lower animal forms as evolution teaches" are beginning to be questioned in our schools today. It is here that the University of Buffalo faculty almost unanimously check the negative or radical side of the questionnaire. To react negatively to these statements is accordingly beginning to be a part of the behavior of the culture group to which the University student is accommodating himself. These ideas are, therefore, being thrown at the high school student; and it would seem to be those who are least superstitious (those perhaps who are beginning to question critically prevalent thought and ideas) and those who have high superstitious scores (those who are in the habit of accepting uncritically whatever ideas are with sufficient impressiveness put before them) who are accepting the negative side.

In other words, it seems that the degree of superstitious belief carried by a freshman entering college is

chiefly an index of his suggestibility, of his credulity, of his gullibility. (1)

Opinions and Convictions on Social Questions:

In the questionnaire given the entering freshmen, the following five statements were made, and they were asked to check the numeral to the left which most closely expressed their idea on the matter:

- |   |   |   |    |    |   |
|---|---|---|----|----|---|
| 2 | 1 | 0 | -1 | -2 | The thrill and romance from moving pictures are good substitutes for social life and other recreations. |
| 2 | 1 | 0 | -1 | -2 | It is harmless for young people who are not engaged to kiss each other secretly.                        |
| 2 | 1 | 0 | -1 | -2 | People who are unhappily mated should be allowed a divorce even when there is no adultery.              |
| 2 | 1 | 0 | -1 | -2 | It is just as right for a woman to smoke and drink as for a man.  |
| 2 | 1 | 0 | -1 | -2 | A woman should feel as free to propose marriage as a man is.  |

A correlation was run for each of the above statements and the scorings on the superstition questionnaire. The following ratios were obtained:

Moving pictures is a good substitute for social life . . .	-.07
Secret kissing is harmless . . . . .	-.067
Divorce is allowable even without adultery . . . . .	-.05
It is as right for women to smoke and drink as for men .	+.20
Women should feel free to propose . . . . .	+.14

---

(1) "Superstition is that form of emotional credulity prompted by an emotional predisposition which had its origin in adjustments to physical conditions long since passed away." Dresslar "Education and Superstition", p. 145.

The first three ratios indicate a general dispersion. It may be interesting to note that in the first two the entire group tend to cling to the conservative side of the scattergram, the median being in the -1 column; while in the allowability of divorce even without adultery, the entire group are more radical, 65 of the 183 who answered this question having checked the +2 column and 42 more the +1 column.

The ratios  $+0.20$  and  $+0.14$  obtained when correlating the freshman opinion on the "rightness" of women smoking and drinking and the freedom she should feel in regard to proposing marriage, respectively, are perhaps at least indicators of tendencies of the more superstitious to react more conservatively, (the original statements here are put in a radical way) to uncritically accept dogmatism of the day. There is a tendency, as shown by the scattergram, for the entire group to favor the conservative view slightly more than the radical; but in the higher scores of superstition, we find particularly conservative individuals.

It is interesting to note that here again there is a tendency for the more superstitious to accept more blindly and unquestioningly the common current folk-ways. From this material, however, one cannot be sure that it is suggestibility that is the common cause; it might just as readily be, and probably to a certain extent is, caused by an environment that contains both a large element of super-

stition and much dogmatic assertion as to the authority of religion and as to "woman's place," (an unenlightened, suggestible community).

Suggestibility and Superstition:

Upon refining the data, as above, there seemed to be many indications pointing to the conclusion that the amount of superstition held in some way depended upon the suggestibility of the individual. It was for this reason that an attempt was made to formulate and give suggestibility tests to as many of the group given the superstition questionnaire as could be "rounded up."

The "Aussage" test was given to the Introductory Science Class, 92 of whom had filled in the superstition questionnaire. "The Hindoos" was the picture used, and the following questions were read, the questions indicating suggestibility are checked and the number of the 150 given the test who reacted suggestively is given at the right:

Interrogatory for Aussage Blank "Hindoos"

(Test given to 150 freshmen. Suggestibility Questions are checked and number given positive suggestible replies following in parenthesis. Those questions preceded by interrogation point (?) as well as check (#) are not counted in correlations run in superstition study.)

1. What animals are there in the picture?
2. Are the men dressed approximately alike?

3. Is there a patch of blue? What object?
4. Are both tusks of the elephant showing?
5. Does the infant appear to be asleep or awake?
6. Is the elephant walking or standing?
7. #Are the two men on the ground in front looking straight ahead or to the rear? (115)
8. Is the urn or clay vessel in the picture on the ground or on a stand?
9. #Is the woman's hair curly or straight as it hangs down? (109)
10. Is the man in front carrying bananas? If so, are they in front or on his back?
11. #Has the tiger been shot in the head, or on its side? (131)
12. Are two or more men carrying the tiger?
13. #Is the infant clothed above or below the waist? (63)
14. Are there as many men on the second elephant as on the first, or more?
15. #Is the roof of the house shingled or tiled? (22)
16. Is the head rajah of the party on the front or rear elephant?
17. #Is the man holding the pigeon by the feet or tail or body? (62)
18. Is the large palm in back on right or left side of picture to you?
19. #Is the turban of the rajah colored in a redish or bluish color? (82)
20. Are there one, two or more bamboo poles on the ground in the center of the picture?
21. #Are the clouds in the sky on the left or right side of the picture? (109)
22. Is the bench made mostly of mud or wood or stone?

23. #Is the man steering the elephant about to hook its ear or some other part of its body? (72)
24. Is the elephant's trunk curled in towards the body, is it straight, or curled out?
25. #Does the woman sitting on the bench have on shoes, or has she nothing on her feet and ankles? (23)
26. #Is the sun shining, and if so from which side of the picture? (29 said yes)
27. #Is the elephant excited, or dreamily engaged in plodding ahead? (69)
28. Are the other hindoos in the picture concerned with, or attentive to, the actions of the front man? (or are they observing various things?)
29. #Is the woman apparently pleased with the return of the man front the hunt? (95 said yes).
30. #Is there a discussion going on anywhere? conversation? If so between whom and what is its probable nature? (49 suggested talk between man and woman or child.)
31. How many sun shades are there in the picture:
32. #Does the man in the foreground wear earrings or a nose ring or both? (64)
33. What color is the trappings of the first elephant?
34. #Is the man in the front of the picture looking at the woman or the child or straight ahead? (81)
35. How many people are there in the picture?
36. #Is the head elephant decorated with bracelets on his forelegs or only with brass knobs on the ends of his tusks. (51)
37. #Are the beads worn by the woman made of teeth, bone or carved wood? (49)

#### The "Gas" Test.

Wishing a better rounded picture of the suggestibility of the group under consideration, an attempt was made to devise another group suggestibility test:

Assistant Professor Buckley of the Chemistry Department of the University of Buffalo interrupted an Introductory Science lecture about twenty minutes after the class had been under way, announcing that an amount of "Hypo-trel-lium-sulphate", a gas that the Chemistry Department "had been experimenting with extensively at that time", had gotten through the air vents into the Lecture Hall occupied by the class. He said that it was not definitely known just what the effects of the gas were. Some of the Chemistry Department faculty had suffered considerable distress, others like himself did not seem to be affected by the gas at all. Therefore, inasmuch as the class had accidentally inhaled the gas, they would be rendering a service to science if they would indicate their subjective reactions to it, also giving their seat numbers so as to indicate the rate of diffusion of the gas. (Needless to say, for the purpose of keeping attendance record, the seat number of each student was known). The class punctuated his statements with gales of laughter. He turned to the board, stating "these are some of the effects noted upon members of the Chemistry Department members," and wrote:

- |                       |                               |
|-----------------------|-------------------------------|
| 1. nausea             | 5. burning of mucous membrane |
| 2. headache           | 6. dry tongue                 |
| 3. dizziness          | 7. rapid respiration          |
| 4. a. itching of eyes | 8. exhilaration               |
| b. itching of skin    | 9. other effects.             |



Upon leaving the Lecture Hall, he advised the class that Dr. Hewitt, who had been working with him on this gas the previous hour, had been so disturbed by the gas, that he had to be taken home.

Shortly after the resumption of the class topic, one girl arose and in a slow and unsteady gait left the lecture room.

Of the 122 (90 of whom had filled in superstition questionnaires) who turned in slips, 57 admitted ill effects, as follows:

- 6 nausea
- 26 headache
- 12 dizziness
- 13 itching eyes
- 6 eyes hurt
- 4 itching of skin (one very intensively)
- 1 left room (above mentioned)
- 1 felt quite badly, held head, etc.
- 1 said he was "OK but was not sure of it."
- 3 had itching of mucous
- 3 burning of mucous
- 2 dry tongue
- 1 dry throat
- 1 rapid and difficult respiration
- 2 exhilaration
- 2 other effects -- nature not indicated
- 1 sleepiness.

Of the 57 effected, 22 had more than one ill effect.

It is thought that this test, of and by itself is not very reliable, inasmuch as the suggestible person is open to suggestion not only from the speaker in the front of the room, but also from his neighbor, who may not be suggestible. It was found almost invariably that when one individual in a row responded in one manner, several adjacent ones did likewise. That is, there will be a cluster of four or five who had "no ill effects", then another, all of whom note ill effects, though not necessarily the same. The following is a sample of the way this "cluster suggestibility" was exhibited:

Seat No. 3.	I, II, III & IV	16.	other effects (not specified)
4.	none (not sure of it)	135.	II & III
7.	none	136.	III
8.	none	138.	II & III
9.	none	140.	no apparent effects
10.	none	141.	slight burning of eyes
11.	none	142.	II
12.	I & II.	143.	II
13.	none	146.	"felt very badly"
14.	none	147.	none
15.	none	150.	none
		152.	none
		153.	none

Further refinement and inspection of the suggestibility tests might well be, and have been made, but such refinements are not relevant here.

When the suggestibility "ausage" test was correlated with superstition scores, a correlation ratio of .253 was obtained. (92 individuals responded to both the "ausage" test and the superstition questionnaire.) When the

scores on the "gas" test (90 individuals had taken both suggestibility tests and had answered the superstition questionnaire), was considered along with the "aussage" test, and the combination correlated with the superstition scores, a ratio of .285 was obtained. That is, with an addition of a slight amount of material on the suggestibility of the individuals, when a better picture of the suggestibility of the individuals in the group was obtained, a higher correlation was obtained.

It is highly regrettable that the lack of time, both of the experimenter and of the student group under consideration prevented the giving of an individual suggestibility test, or tests, such as the "June Downey" or Seashore and Whipple's "Illusion of Warmth" test; or that better and more standardized group tests were not available. We note the higher correlation at the addition, described above, of a second small amount of suggestibility data; and we may, it seems, expect that with the addition of still further material, and so with a better rounded and more complete picture of the individual suggestibility, that a higher and higher correlation would be forthcoming.

#### Multiple Correlations:

Finally, multiple correlations were calculated to see whether any of the ratios could be raised by combining factors. Following are some of the results:

(a)	Total Suggestibility and Superstition (as above)	.285
	Total Sugg. and Super. (Religious Conservatism Constant)	.31+
	Total Sugg. and Super. (Age Constant)	.258
	Total Sugg. and Super. (Intelligence Constant)	.263
	Total Sugg. and Super. (Age and Intel- ligence Constant)	.23
(b)	Superstition and Age (as above)	-.19
	Super. and Age (Intel. Constant)	-.21
	Super. and Age (Sugg. Constant)	-.14
(c)	Superstition and Intelligence (as above)	-.12
	Super. and Intel. (Age Constant)	-.15
	Super. and Intel. (Sugg. Constant)	-.04

These need no discussion. It is, however, interesting to note that Intelligence, age and suggestibility, all seem to be closely tied together. Keeping any one constant lowers the correlation ratio of either of the others with superstition; this being most noticeable when suggestion is kept constant.

When religious conservatism is kept constant, the ratio between suggestion and superstition climbs to +.31. There seems to be some indication that religious radicalism is a product of, or at least somewhat correlate with suggestibility (+.42) when non-suggestible are omitted.) This would encourage the writer to suggest that religious radicalism be one of the individual tests of suggestibility along with a short superstition questionnaire.

The following are other correlations obtained, and used in deriving the above multiple correlations:

Suggestibility with Religious Conservatism (this jumped to to $-.42$ when 30 non-suggestible individuals were dropped.)	$-.19$
Suggestibility with Age.	$-.19$
Suggestibility with Intelligence (wide knowledge and self-reliance subtract from suggestibility.)	$-.294$
Suggestibility and Age (Intelligence constant)	$-.24$
Suggestibility and Intelligence (Age Constant)	$-.33$
Age and Intelligence.	$-.12$

#### Summary and Conclusion:

The writer attempted in this problem, not only to determine the quality and quantity of superstition among a group of incoming University students (a check upon Dresslar's findings), but also to find correlative factors of this form of belief. The study divided itself into two parts. First the detection and second the correlation of superstitions with a multitude of factors which would be contributory to the origin and maintenance of this phenomenon.

In the detection, a questionnaire, more objective than Dresslar's was devised. Instead of requesting beliefs, full, partial or none; indulgence in superstitious behavior, always, sometimes or never was required. In addition, discarded beliefs were obtained as an important indication of the personality of the individual. A point score system was devised and a superstition score for each subject computed.

The distribution curve is skewed toward fewer superstitions, approaching an ogive, where the mode will be no superstitions, and there will be a gradual slope for the atypical who still clings to superstition.

The following correlation ratios were obtained:

Amount of Superstition with

I.	Intelligence .....	-.12
II.	Age .....	-.19
III.	Control of Temper.....	.248
IV.	Confidence in Self.....	-.01
V.	Worrying .....	-.19
VI.	Amount of Grit.....	-.007
VII.	Mixing Ability .....	.002
VIII.	Initiative .....	-.17
IX.	Conservative Concepts in Religion	
	Total.....	.07
	(A) Religion vs. Science	.02
	(b) Prayers will be answered	.18
	(c) Gov. right to interfere with religion	.06
	(d) Immortality justified	.12
	(e) Man created by God,	.177
X.	Radical Concepts on Social Questions:	
	(a) Movies good substitutes for Social Life	.07
	(b) Secret kissing harmless	.067
	(c) Divorce allowable without adultery	.05
	(d) As right for women to smoke and drink as for men	-.20

(e) Women should feel free to propose	.14
XI. "Aussage" Suggestibility Test	.253
XII. Combined "Aussage" and "Gas" Tests	.285

The following comparisons of Means and Medians of Superstition Scores was obtained:

	Medians	Means
Jewish	15.0	24.0
Catholic	28.5	34.2
Protestant	24.0	30.0
Total	26.0	30.3
Women	34.0	35.2
Men	20.0	24.4

The high schools, ranked according to size, showed no difference as to the superstitiousness of its graduates. There was no significant difference between the various races in respect to superstitiousness, as gleaned from this study, although the numbers were perhaps not large enough to make the data very valuable.

Discarded Superstition correlated with  
Intelligence . . . .058

Multiple Correlations:

Superstition Scores with

I. Suggestibility

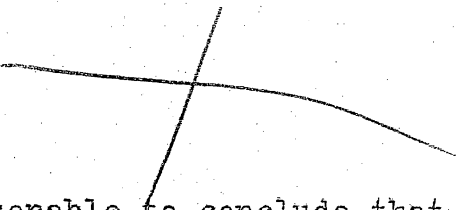
(a) Religious Conservatism Constant	.31
(b) Age Constant	.258
(c) Intelligence Constant	.263

(d) Age and Intelligence	Constant	.23
II. Age		
(a) Intelligence	constant	-.21
(b) Suggestion	constant	-.14
III. Intelligence		
(a) Age	constant	-.15
(b) Suggestion	constant	-.04

From the above correlations and means and medians, we must conclude that superstition is not correlated with intelligence. It does not depend for its source upon either rural or city community life, nor is it a product of any or several religious beliefs, nor yet the particular possession of any one or several immigrant groups. We do not find that it is particularly harbored by youth, although youth is slightly more susceptible to it. Both sexes are superstitious, women being somewhat more so than men. It is not harbored by either the atypically radical nor the atypically conservative, nor are those, who cluster about the median in the matter of conservatism or radicalism, particularly its hosts.

However, from the data on religiosity, from the data on the reaction to religious dogma, from the fact that youth is slightly more superstitious than age, and finally from the relationships found between suggestibility reactions and superstition, (which even though so low as to be unpredictable, still because of the limited number of suggestibility tests are indicative at least); from this





collection of material, it seems reasonable to conclude that superstition feeds and grows to its most luxuriant proportions among the habitually suggestible.

We have suggestion defined<sup>(1)</sup> as the uncritical acceptance of ideas or propositions independent of logical grounds. Or again<sup>(2)</sup> "suggestibility is the natural faculty of the brain to admit any idea whatever without motive, to assimilate them and eventually to transform them rapidly into movements, sensations and inhibitions." From this, in a logical way, it would seem that superstitious belief is the normal product of suggestibility. That is, if the uncritical acceptance of ideas or propositions without logical grounds is suggestibility, and superstition is by definition illogical, uncritical belief; then would not superstition be one, if not the only, normal outgrowth of suggestibility?<sup>(3)</sup>

The point is made by many of the writers on the subject that superstition grows under the stress of emotions, such as fear, and those emotions connected with illness and death. We are aware of the fact that suggestibility increases under the stress of emotions<sup>(4)</sup>, and so we would expect its natural offspring, superstition to increase as well.<sup>(5)</sup>

---

(1) MacDougall, "Abnormal Psychology"

(2) LeFebre "Mass Suggestion", p. 102.

(3) Sumner has been previously quoted to the effect: "Superstition is the illogical uncritical belief, the result of suggestion."

(4) MacDougall "Abnormal Psychology."

(5) No good emotionality tests are to be had to test this concept.

The point is also made repeatedly that superstition is produced in crowds. The fact that crowds are particularly suggestible when compared to individuals is well known. (1) The common presence of suggestibility and superstition is called attention to.

Puckett and others have emphasized the fact that with enlightenment superstition passes away; that ignorance and superstition are bed-fellows. Why not? Are not the ignorant the most suggestible; and is it not in the fields of our greatest ignorance that we are most suggestible as well as most superstitious?

The negroes studied by Puckett evince a kind of superstition that is so obviously the result of suggestion that it seems permissible to emphasize it here again. The negroes are highly superstitious in every sense of the word, and are moreover deeply addicted to voodooism: That is, if a taboo is broken by, or if someone places a curse upon an individual, he or she becomes consequently ill and remains so until someone of greater prestige "outvoodoos" the affliction.

It is said that youth is more suggestible than age ( -.24 correlation ratio between age and suggestion with intelligence constant); we find that the younger are more superstitious as well. The correlation of age and suggestibility -- and in a smaller way with superstition -- is possibly a function of the greater experience of the elder ones

---

(1) Sumner, "Folk Ways" as quoted on pages 13 - 14 of this article.

(it is recalled that with learning, we become less suggestible), and the decrease in the prestige of parents and elders.

The definition of superstition is repeated: "an illogical uncritical belief, the result of suggestion" (1) having as its fundamental assumption the postulate of "an all-pervading mind or spirit" (2) with which by correct ceremonies, etc., rapport can be established. It seems likely that the majority of the freshmen have accepted this fundamental assumption of superstition, implicitly, if not explicitly; -- all those who have superstitiously at all, to make their behavior reasonable, must accept it; and with the exception of five or six individuals, all have their "pet" superstitions. Then, the number of superstitions acted upon by any one individual would be an indicator of his individual superstitiousness, as well as a clue as to his suggestibility; and might well be the test of the second as well as of the first, although perhaps in not quite as definite a manner.

The correlation of .295 or .3, between suggestibility and superstition is not unlike the correlations between individual parts of an intelligence test.

The statement is, therefore, reiterated that in a suggestibility test, a superstition questionnaire might well play a conspicuous role.

---

(1) Sumner, "Folk Ways".

(2) Dresslar, "Superstition and Education."

Dresslar suggests the following training to eliminate Superstition<sup>(1)</sup> thus: "An understanding of the unknown can come only through an understanding of scientific law. Thus, training in biology, chemistry, physics and other such sciences will do more to banish necromancy than will any studious reaching after the three R's.... Since the mothers are the important agents in passing these along to the children, it would seem necessary to give female education more emphasis in the educational system, especially providing in natural sciences for the young women." He dephores that so much myth and folk lore is provided for the gullible perusal of young children. He says the immaginati on may be nurtured otherwise than on a diet of falsity and fabrications, which not only teach incorrect fact, but incorrect theory as well. His reasoning seems very logical and sensible to the writer.

It would seem that superstition is the result of a suggestible individual being exposed to an environment containing much dogma of a superstitious character. The suggestible person<sup>has</sup> uncritically, gullibly swallowed great masses of what in the way of ideas and propositions, his meager environment has had to offer his prodigious appetite. If, therefore, such a person is able to carry a heavy load of this nature, were this burden removed and the suggestion that the individual must be critical<sup>ly</sup> successfully entered; an equally heavy load of a more

critical and scientific nature might be borne. In other words, one might expect that the size of the load of ideas, etc., that any person carries, is an indicator of the amount he is able to carry; that a fairly heavy load indicates that the individual reacts forcefully enough to propositions to make them stick to his memory; then would not your superstitious person be the most teachable?

To somewhat answer the query, a study was made of the acquisition quotient of those having the highest scores in superstition. The acquisition quotient or A.Q. is the work accomplished divided by the intelligence quotient, or I. Q. The averages of each individual's grades were listed, and percentiles calculated. These percentiles were divided by the intelligence quotient percentile. Upon investigation of the A. Q.'s of the eleven most superstitious boys, it was found that eight of the eleven had very high A.Q.'s, five of them exceptionally so, and three well above par; the remaining three of the eleven were about average. This would tend to substantiate the theory that superstition is an indication of plasticity, receptivity, suggestibility.

If, then, these highly superstitious individuals were searched out, if the suggestion was entered that they must be critical, thus training them to build up a defense against their suggestibility, if they were further advised to apply themselves to some of the physical sciences in order to outroot the fundamental assumption of superstition, if

perhaps also debating and argumentation were advised, and if information was generally put in an emphatic way to them, would not these suggestible-superstitious individuals make the very best students; and would not the result be well worth the energy and time devoted to a superstition questionnaire? This is our hypothesis, the testing of which by further data would be most interesting.

---

## B I B L I O G R A P H Y

- Baillie, J. B. "Studies in Human Nature"
- Birgher, "Current Superstitions"
- Dresslar, F. B. "Superstition and Education", 1907.
- "Suggestions on the Psychological Causes  
of Superstition", American Journal of Insanity, Oct.1910.
- Judd, "Psychology of Social Institutions."
- LeFebre, "Mass Suggestion"
- Levy-Bruhl, "How Natives Think."
- McDougall, Wm., "Abnormal Psychology."
- Park and Burgess, "The City."
- Puckett, N. N., "Folk Beliefs of Southern Negro," 1927.
- Sumner, "Folk Ways."
- Wundt, "Elements in Folk Psychology."