

THE TENDENCY TO CERTAINTY IN RELIGIOUS BELIEF.

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- I. *Introduction* (p. 16).
- II. *The scope of the enquiry* (pp. 16-17).
- III. *The results of the enquiry* (pp. 18-23).
- IV. *Discussion of the results* (pp. 23-29).
 - (a) *The law of belief formation* (pp. 23-24).
 - (b) *Comparison of religious and non-religious beliefs* (pp. 24-27).
 - (c) *Political and 'tabloid' beliefs* (p. 27).
 - (d) *Relation of certainty of belief to intelligence* (pp. 27-28).
 - (e) *Certainty of disbelief* (pp. 28-29).
 - (f) *Other relationships of certainty of belief* (p. 29).
- V. *General conclusion* (p. 29).
- VI. *Summary* (pp. 29-30).

Appendix (pp. 30-31).

I. INTRODUCTION.

Ordinary observation of the strength of beliefs leads one to the conclusion that most people have a strong tendency to feel much more certain than the evidence warrants. Particularly is this to be noticed when opposite opinions are held, and we find that some people are certain that a proposition is true and some are certain that it is false, while relatively few persons adopt the attitude of partial belief, that is, of regarding it as more or less probable. This is particularly striking with respect to religious and political beliefs, although I think common observation would also lead us to suppose that it was not confined to them. There seems to be a general tendency for our reaction to be that of certainly accepting or certainly rejecting a proposition rather than either the attitude of partial belief, which we may call 'scepticism', or that of oscillation between two opposed beliefs, which we may call 'doubt'.

II. THE SCOPE OF THE INQUIRY.

The present enquiry was directed towards trying to get confirmation by some more exact method of this impression gained from common observation. The method of the enquiry was that of presenting to a large

group of subjects a number of statements on religious and other questions and asking them to indicate the degree of certainty with which they believed or disbelieved these statements on a scale of seven points: +3 and -3, meaning 'complete certainty' that the belief is true and is false respectively; +2 and -2, similarly meaning a strong conviction not amounting to certainty—such as would be expressed by saying 'it is most probable that', or 'it is almost certain that so-and-so is true or false'; +1 and -1, meaning a low degree of conviction—such as we should ordinarily express by saying 'I think that so-and-so is true or false'; and 0, meaning no preference at all, one way or the other—that is, complete uncertainty.

For the sake of comparison, another enquiry was made in which the subjects were asked to estimate the probability of various chance events connected with the tossing of coins and the drawing of cards. A similar scale was used, although now, of course, it was degrees of expectation and not degrees of belief that were indicated.

One hundred and thirty-eight subjects were used in all; 102 drawn from W.E.A. classes at the University at Glasgow, and the remainder (86) from amongst the students of Psychology in my own classes. The W.E.A. classes provide a very heterogeneous collection of subjects of various occupations and of both sexes and of all ages from twenty upwards. The point that I was interested in was not what my subjects believed in, but the degree of certainty with which they believed.

A precaution was taken which is, I think, very necessary if we wish to obtain accurate answers to a system of enquiries on such intimate and private matters as religious beliefs. While the forms supplied to the subjects asked them to state their age, sex and occupation, their names were not put on the forms, and they were assured that after collection of the forms the experimenter would have no way of finding out what individual had filled up any particular form, nor would he try to do so. This assurance of anonymity made possible a more candid self-revelation than could have been obtained if names had been put on the forms.

Unlimited time was allowed for the answers to the questions with respect to beliefs, but the estimate of probabilities was done under a time limit. In this latter test, the subjects were asked to state what would be their expectation without any calculation of probabilities, and the time limit was imposed partly to make certain that this condition was complied with, since the time was altogether too short to permit calculation.

The statements of the 'beliefs' enquiry are printed in the Appendix at the end of the present article.

III. THE RESULTS OF THE ENQUIRY

The accompanying diagrams (Figs. 3 to 7) show the distribution of the various degrees of certainty in answers to some of the statements. We find, in fact, that the impression that there is a tendency to prefer extreme degrees of the scale is fully confirmed. The first two diagrams

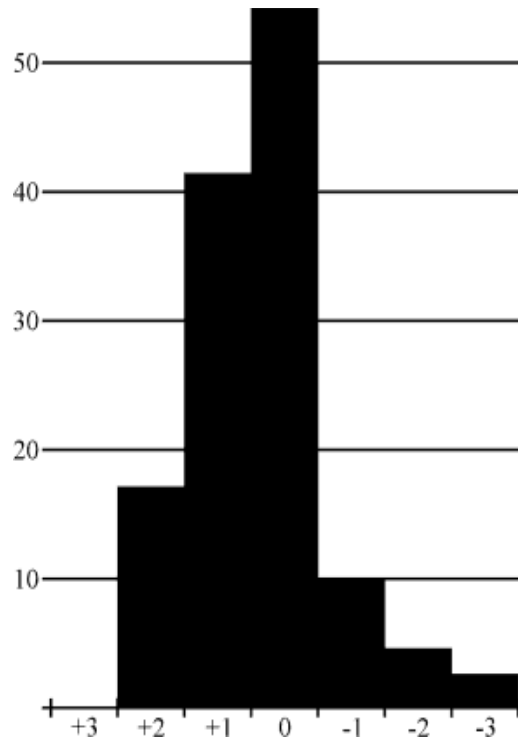


Fig. 1.

show typical forms of the distribution when this tendency to certainty is absent. They are drawn from the 'probabilities' enquiry. Fig. 1 shows the degree of conviction with which subjects would expect that if they drew out one half of the total number of a pack of cards they would find the Ace of Spades amongst those drawn out. Most of them (quite correctly) that this would be as likely as not, and the frequency falls off in

both directions from the zero degree of conviction. There is plainly no tendency for subjects either to be certain that it will, or certain that it will not, happen. Fig. 2 shows a similar sort of curve in which the most frequent response happens to be displaced to one side of the zero position. The question was as to the likelihood that if a penny were tossed five

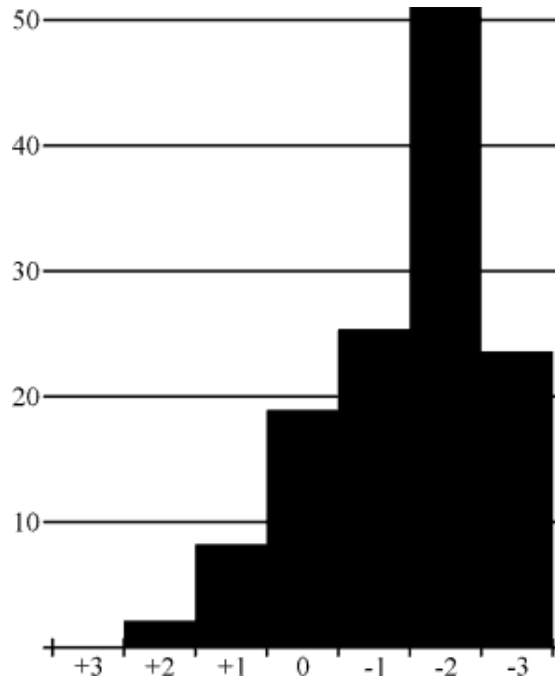


Fig. 2.

times the result of each toss would be different from that of the one before. Still we see the same steady decrease of frequency from the modal position.

When we turn, however, to Fig. 8, which shows the responses to the statement, *There is a personal God*, we get a totally different kind of curve. There is a strong tendency for the frequency of response to be displaced towards the extreme ends of this scale; for the subjects to be

certain, or nearly certain, that the proposition is true or that it is false and relatively rarely to feel a low degree of conviction. Still more striking is this in Fig. 4, which shows the responses to the proposition, *Jesus Christ was God the Son*. No less than 76, more than half of the whole

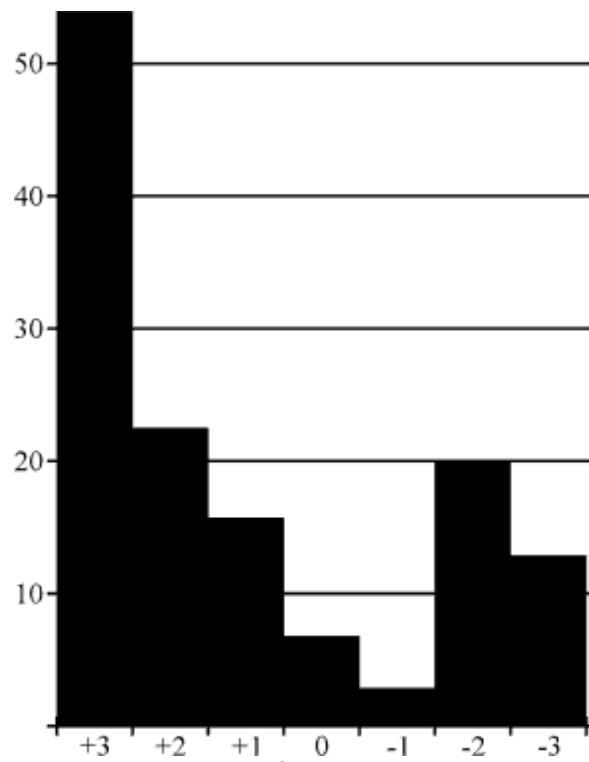


Fig. 3.

number, were certain one way or the other. What, of course, is evidence of a tendency to certainty is not that most of the subjects are certain on way, but that in both directions a large number are certain. Fig. 5 shows the response to the statement that *There are such spiritual beings as angels*. There is now a stronger tendency to scepticism. Quite a large number are sceptical, but of the remainder we still find, as before, maxima

at the positions of complete certainty both ways. These are only a few of my answers to religious questions, but all show the same general characters.

We must now ask whether the same characters are to be found in beliefs about questions of fact which have no practical significance at all.

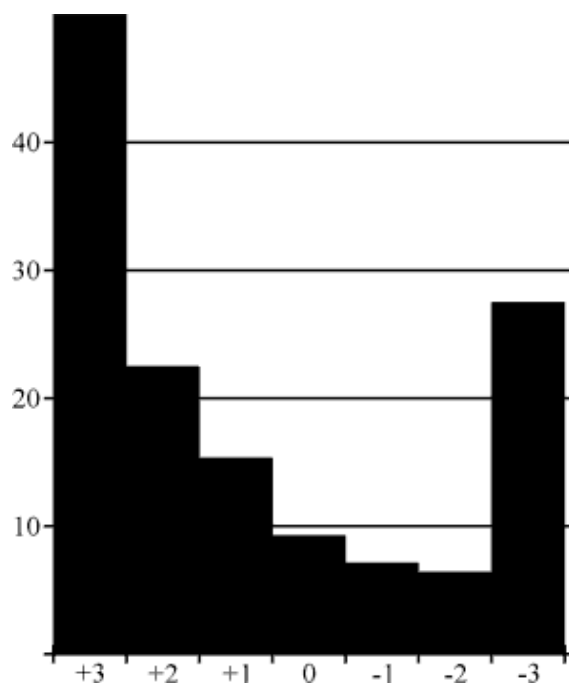


Fig. 4.

Fig. 6 shows the response to the statement, *Tigers are found in parts of China*, and Fig. 7 to the statement, *Light travels to us from the sun in less than one minute*. Both statements are about facts which have as little practical significance as can well be imagined. Fig. 6 does show a large maximum in the region of scepticism, but also one for complete certainty that the statement is wrong; and, if we take this in conjunction with the with the by no means negligible number who are completely certain that it is right, there seems to be no doubt that here also we have the tendency to

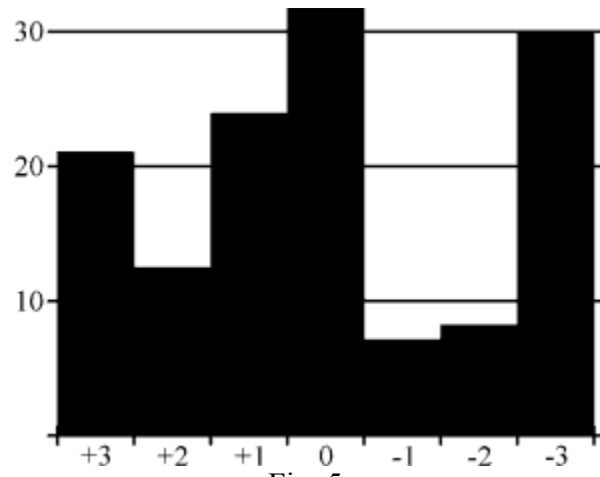


Fig. 5.

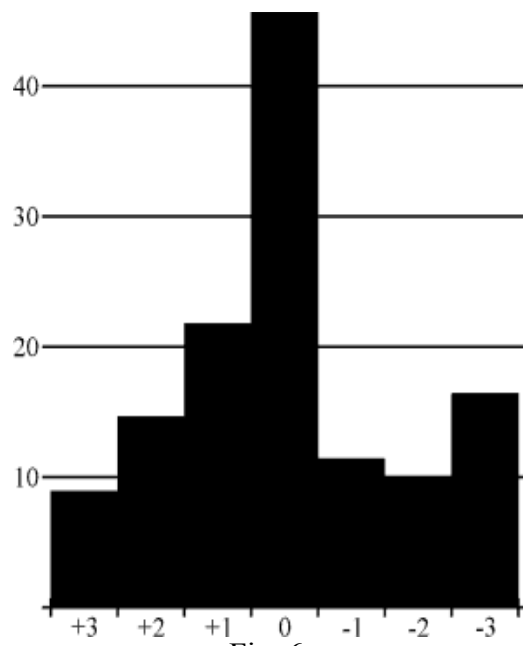


Fig. 6.

certainty at work although less strikingly than before. In the next diagram, Fig. 7, however, the tendency is there again, quite plainly. It is difficult to say why there is so much certainty about such a question as the velocity of light, unless this is due to the very dogmatic character of the popular information on physics and astronomy which passes at the present time as science. It is interesting to notice that on the 'tigers in China' question most of those who are certain are also wrong, although this is not the case in Fig. 7; though even here we have no less than 28 who are absolutely certain and also wrong.

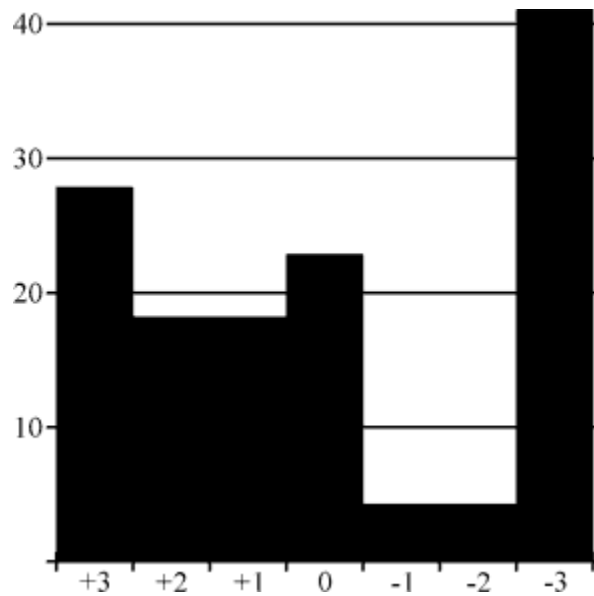


Fig. 7.

IV. DISCUSSION OF THE RESULTS.

(a) *The law of belief formation.*

I think it is reasonable to suggest that if the strengths of people's convictions were wholly determined by rational influences, such as the weighing of evidence, we should get the kind of distribution of certainty shown in Figs. 1 and 2. We should have one most frequent degree of conviction, with some individuals having somewhat less or somewhat

more conviction, but the frequency decreasing as we recede from the modal degree of conviction. Where, on the other hand, we have many people certain of the truth of a proposition and many others certain of its untruth, we are dealing with a distribution of belief determined largely by irrational factors. We have thus a character of the beliefs of a group which enables us to say that the belief is held with irrational conviction; there is not, I think, any corresponding character the observation of which enables us to say this of the belief of any particular individual.

The factor determining this irrational distribution of degrees of conviction in religious beliefs is, no doubt, primarily their practical significance. In the region of action we must adopt one alternative or the other. We must drive to the left of an obstruction or to the right of it; no intermediate action is possible. It is only in pure thinking, divorced from action, that we can adopt such an attitude as to regard *A* as most probable but not-*A* as also possible; or that we can hold *A* and not-*A* as both possible. Scepticism and doubt belong only to thought divorced from action, and of such thinking most people are little capable. The necessities of action colour the character of our thought, even when the thought has no immediate reference to action; as, for example, in such a question as that of the speed of light. Even here scepticism is rare and there is a strong tendency for the practically dominated attitude of certainty to prevail.

This characteristic of belief formation may be called the *Tendency to certainty*. It may be stated in the form of a law that: *A belief tends to be held or to be rejected by an individual with a high degree of conviction*. This peculiarity of the psychology of the individual leads to a law in social psychology that: *When, in a group of persons, there are influences acting both in the direction of acceptance and of rejection of a belief, the result is not to make the majority adopt a low degree of conviction but to make some hold the belief with a high degree of conviction while others reject it also with a high degree of conviction*.

It is, of course, in favour of this latter social psychological law that evidence is here presented, while the first-stated individual psychological law is defined, from it.

(b) *Comparison of religious and non-religious beliefs.*

We have seen that the tendency to certainty is not confined to religious belief but is to be found to some extent even amongst beliefs with little or none of the affective significance of religious beliefs. It remains to be asked whether amongst such beliefs the tendency is present

at any rate to a lesser extent than amongst religious beliefs. Certain of the statements in the test were intended to represent a comparative a comparative group of such of affectively indifferent non-religious belief. The mean degree of certainty attaching to each statement was calculated by averaging the responses irrespective of sign. The results are shown in the accompanying Table I.

Table I. *Showing mean certainty of different test statements.*

Group	Test statement	Number replying	Mean certainty	Group	Test statement	Number replying	Mean certainty	
A	1	136	2.25	D	28	128	1.22	
	2	135	2.27		30	133	1.23	
	3	135	2.40		31	131	1.21	
	4	135	2.19		33	136	2.01	
	5	134	2.19		35	134	2.33	
	7	135	2.32		40	136	1.82	
	8	137	2.38		17	132	0.95	
	9	134	1.67		34	133	1.83	
	10	137	2.01		E	37	135	1.99
	14	137	2.07			38	135	1.72
	18	137	1.82		F	39	138	1.78
	20	137	1.80			15	135	2.07
	21	137	2.44		G	25	136	2.01
22	138	2.62	27	137		1.77		
23	138	2.35	29	129		1.87		
B	6	131	2.25	32		136	2.48	
	16	134	2.34	36		138	2.83	
C	11	136	2.23					
	12	130	1.89					
	13	135	2.32					
	19	134	1.30					
	24	137	1.66					
	26	136	2.17					

In this table the groups of statements marked A, B and C were those indicating religious beliefs, D was the group of affectively indifferent non-religious beliefs for comparison with these. E, F and G were small groups of statements the purpose of which will be mentioned later. It will be seen at once that beliefs of the A., B, C group are on the whole believed and disbelieved with greater certainty than those of the D group. With one exception, the D group of beliefs have a degree of certainty below the median of the religious group. This one exception is the statement that *Green is a primary colour*. I cannot explain the high certainty here. It is not due to everyone holding the same opinion, since belief and disbelief are very evenly divided. Nor is it due to wide information on the subject, since only a small proportion of the subjects had had any instruction in experimental psychology. With this exception the indication seems clear that the tendency to certainty is less strong amongst, such beliefs than amongst those of a religious order.

The mean degree of certainty attaching to the religious beliefs is 2.13 with standard deviation 0.32; for the non-religious group it is 1.575 (S.D. = 0.49). If we examine this difference of 0.555 by the 'Student' method for small samples, we find that $t = 3.7$, giving a probability of occurrence by the chances of sampling of less than 0.01, so that the difference is significant.

While this sufficiently eliminates the possibility of the difference being caused by the errors due to random sampling of the beliefs in the two groups, it does not, of course, eliminate the possibility that the result may be due to a non-random selection of the beliefs examined in the two groups. It is difficult to see any way in which one could ensure that the non-religious beliefs were really a group of beliefs corresponding to the religious ones in every respect except in that of the difference under investigation, so it is necessary to be not too certain in inferring that religious beliefs show the tendency to conviction more strongly than affectively indifferent non-religious ones, although on grounds of common observation the conclusion appears a very likely one.

It must also be admitted that the figure obtained by averaging the degrees of certainty of different individuals' responses to a statement does not quite satisfactorily show the presence of the tendency to certainty as this has previously been defined. There are two difficulties. First, we took as evidence of the tendency to certainty, the presence of maxima at both ends of the scale. While, if there are two such maxima, the index we have calculated will be a measure of their size, it will also be high if the statement wins a large amount of certainty at one end of the scale and not at the other. An extreme example of this is to be found in the responses to statement 36 in group G, where the frequencies are 115, 20, 2, 0, 0, 0, 1. This gives the very large mean of 2.83, although there is almost no evidence of a tendency to certainty as we have defined it. This difficulty does not, however, invalidate the results we are considering at present, since in groups A., B, C and D there is sufficient distribution of responses to both ends of the scale.

The second difficulty arises from the ambiguity of the response 0. This may either mean a positive conviction that the proposition is equally likely to be false or to be true, or it may mean the absence of any positive conviction as a result of lack of information or of interest. It would, perhaps have been better to have asked subjects to give a different indication for the latter situation. Complete absence of positive conviction is probably rare in the religious statements but may account for many of the 0 responses in the non-religious ones, leading to an underestimate

of the amount of the tendency to certainty amongst those subjects who do have positive convictions. Even, however, if we take the extreme measure of disregarding all 0 responses and taking as our measure the mean of all the other responses, our conclusion remains the same. The mean for A, B and C then becomes 2.425 (S.D. = 0.16), while that for D becomes 2.21 (S.D. = 0.23). The difference is now smaller, but the variance is also much less. The probability of the occurrence of this amount, of difference by chance is 0.02, so it is just significant.

(c) *Political and 'tabloid' beliefs.*

Political questions also seem likely to have the quality of attaching to themselves high degrees of certainty. The group E of three political questions was introduced to give some indication of the extent to which this is the case. The number of the questions was too small for any positive conclusions, and, probably the questions were not particularly well chosen. These three statements show degrees of certainty well below the mean of the religious ones, but above the comparison group.

It is also to be noticed in popular thinking that a large amount of positive conviction is given to statements of a vague character, which are condensations of complex propositional wholes, such that it is not reasonable to deny or affirm them without the addition of many qualifying classes. To such propositions I have elsewhere given the name 'tabloids'. Groups F and G were such tabloids of a religious and non-religious character respectively. Again the groups are too small for positive conclusions. There is certainly no indication that such tabloids are believed with greater certainty than are definite propositions, but neither do they appear to be believed with much less conviction. We can at least conclude that all of these propositions are believed with a much higher degree of certainty than is rationally warranted.

(d) *Relation of certainty of belief to intelligence.*

On grounds of common observation, I think it would be agreed that while low degrees of certainty are, on the whole, uncommon, they are to be found increasingly among the more intelligent. I have tried to discover whether this is the case by giving to each individual an index of religious certitude which is the mean value of his response, irrespective of sign, the statements in groups A, B, and C.¹ The values of this index were correlated with estimates of intelligence. For this purpose, results of W.E.A. classes alone were used. Thirty-six of these had taken Terman's

¹For calculating this index, the response to no. 11 was omitted.

group test. The correlation of the scores in this test with the index of religious certitude was +0.17 (opposite in sign to the expected correlation), but this is not significantly different from zero (chance expectation from uncorrelated. data being greater than 0.1). In order to get a larger number of cases, the probability estimation test previously referred to was marked for correctness of estimation. The score so obtained appeared to be a sufficiently good measure of intelligence, since its correlation with the Terman test results was +0.55 (from 51 cases). From 85 cases who had completed this test, the correlation obtained with religious certitude was +0.11, still positive: but not large enough for significance.

The positive conclusion to be drawn from this result is that there is at any rate no considerable decrease of the tendency to certainty amongst more intelligent subjects.

(e) *Certainty of disbelief.*

A casual examination of the distribution of conviction shown in the diagrams suggests that there is not much less certainty in unbelief than in belief. We may pause to notice that certain denial of a proposition is likely to have less rational justification than certain affirmation of it. Let us look at Fig. 5, for example: *There are such spiritual beings as angels.* There seem to be several possible reasons why a man might reasonably feel certain that this was true; he might, like Blake or Swedenborg, be convinced, that he had seen an angel; or he might accept some infallible authority which told him that there were angels. But on what possible grounds can any one be quite certain that there are no angels? He may reasonably think it is exceedingly improbable, but no less than thirty of the subjects are quite certain that there are no angels. In the answers to this particular question the average degree of certainty of the unbelievers is actually greater than that of the believers (2.6 against 1.95).

In order to find out whether it was generally true that religious unbelievers were as certain that conviction as believers, I also worked out for each individual an index of religious orthodoxy. This was the average response given to the statements of groups A and B, taking sign into account but reversing the sign of responses in group B, since these were statements to which negative responses were on the orthodox side. Group C consisted of religious propositions not indicative of orthodoxy, so they were omitted for this purpose altogether. Ninety-nine of the examined proved to be on the orthodox side (i.e. this index was positive), while thirty-nine were on the unorthodox side. The mean index of certitude for the orthodox was 2.15; that for the unorthodox was 2.09.

The difference is 0.06 with a standard error of 0.09, which is altogether insignificant. This is an interesting result, since it shows the error of the common opinion that the principal enemy of religious orthodoxy at the present time is scepticism. In Scotland, at any rate, this appears not to be true. Religious scepticism is rare, and the enemy of religious orthodoxy is equally dogmatic and certain religious denial.

(f) *Other relationships of certainty of belief.*

A few other relationships may be noticed. There was no significant correlation between orthodoxy and intelligence. I also treated the men and women as separate groups in order to determine sex differences. The mean index of certitude of the 93 men of the groups tested was 2.14 (S.D. = 0.47), while that of the 45 women was 2.18 (S.D. = 0.51). The difference of 0.01 with standard error 0.09 is, of course, insignificant. Women, therefore, appear to be no more certain in their religious beliefs than men, although they are somewhat more orthodox. The mean index of orthodoxy for the women was +0.945 (S.D. = 1.38) and that for the men was +0.405 (S.D. = 1.47). The difference of 0.54 in favour of the women has a standard error of 0.255 and is probably significant ($P = 0.035$).

V. GENERAL CONCLUSION.

These however are side issues. The important point is that there is a real tendency amongst most people for degree of belief to approach to certainty. Doubt and scepticism are for most people unusual and, I think, generally unstable attitudes of mind. It may be that the operation of this tendency is a considerable part of the explanation of sudden intellectual conversions, in which a new opinion comes into the mind with strong conviction as a result of the spontaneous tendency of the mind to pass from the unstable and painful condition of doubt to the stable and tensionless one of certain conviction. The ability to adopt the attitude of partial belief or to hold propositions with less than full certainty is rare, and its acquirement should be one of the aims of a liberal education.

VI. SUMMARY.

1. An enquiry into the degrees of conviction with which subjects believe or disbelieve religious propositions shows the presence of a preference for high degrees of conviction which may be called a 'tendency to certainty'.
2. This tendency is present also in non-religious beliefs of a relatively

neutral affective significance, although probably less strongly than in religious beliefs.

3. It is no less strong amongst unbelievers than amongst believers.
4. It is little or not at all correlated with intelligence and is no stronger in one sex than in the other.

APPENDIX.

The statements of the 'beliefs' test.

1. There is a personal God.
2. Jesus Christ was God the Son.
3. There are spiritual realities of some kind.
4. The world was created by God.
5. There is a personal Devil.
6. Matter is the sole reality.
7. There is a God who is all-powerful.
8. There is a God who is altogether good.
9. There are such spiritual beings as angels.
10. Jonah was swallowed by a great fish and afterwards emerged alive.
11. Man has been evolved from lower forms of life.
12. There is an impersonal God.
13. Evil is a reality.
14. The spirits of human beings continue to exist after the death of their bodies.
15. Religion is the opium of the people.
16. There is no God (personal or impersonal).
17. The universe is expanding.
18. Attendance at church is a better way of spending Sunday than taking a walk in the country.
19. Moses was the author of the first five books of the Bible.
20. Christianity is a better religion than Buddhism.
21. The Bible is literally true in all its parts.
22. Man is, in some degree, responsible for his actions.
23. There is a Hell in which the wicked will be everlastingly punished.
24. The spirits of persons who have died can sometimes communicate with the living.
25. Right will triumph.
26. Belief in evolution is compatible with belief in a Creator.
27. Hardship strengthens character.
28. Mary, Queen of Scots, was beheaded between 1580 and 1590.
29. Everything is relative.
30. Tigers are found in parts of China.
31. Hornets live in nests under the ground.
32. Sex is evil.
33. Light travels to us from the sun in less than one minute.

34. Bacon was the author of the plays attributed to Shakespeare.
35. Green is a primary colour.
36. Sunlight is good for human health.
37. Members of the leisured class are supported by the 'surplus value' created by the workers.
38. Tariffs improve trade.
39. India has, on the whole, benefited, from British rule.
40. The total national debt of Great Britain is more than a thousand million pounds.

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