

THE LOGICAL BASES OF EDUCATION

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PREFACE

THE aim of this book is to set forth the rational bases of all true educational work. It is believed that such bases can only be found in those modern developments of logical theory which have marked the latter half of this century. Hence, but little of the traditional formal logic will be found in the book. As a mental discipline I believe that formal logic has considerable value, but it seems to me certain that we cannot find foundations for modern education in a logical theory developed under a conception of knowledge very different from that of the present day.

After the whole of the present book was planned, and much of it written, I read in an interesting "Review of Educational Currents of Thought in 1895 in Central Europe," published in the *Report of the Commissioner of Education*, 1896-7, issued by the Central Bureau of Education in the United States of America, a passage which so exactly ex-

presses the conception under which I was writing, that I venture to quote it: "Logic . . . aims at the development of a view by which the world of phenomena can be actually understood and the truth found. It endeavours to prove that by proper perception, consideration, and comparative observation, by an arrangement and adjustment under definitions (consequently by critical judgment and conclusion), and by convincing argument and reliable development of a scientific system (by means of continued and strict induction, deduction, and classification) science originates, and a proper view of the world can be gained and made perceptible.

"Such a logic will show how the growing human being must be directed so that the physical and psychical germs of possibilities of a later development within him may grow towards perfection, and that his whole earthly existence may present the realization of ethical and æsthetic ideals. It therefore points out the course to be pursued by individual training, and outlines the duties of social education, which, in its ultimate aims, is more definitely defined by ethics. It is the duty of the teacher, therefore, to see that upon the foundation of the original work of the expounders of this science, a logic be prepared in which all useless ballast from formal logic . . . is omitted, and a scientific methodology (induction, deduction, &c.), be founded on the basis of the qualities

and laws of human thought which have been made objects of perception by psychology. Upon the basis of such a logic alone can pedagogy establish the laws of intellectual education and found a pedagogical methodology" (vol. i, p. 133).

My experience with the students of the Department for the Training of Teachers at the Yorkshire College for the last eight years has convinced me that such a treatment of logic appeals to them as both helpful and interesting, especially if its reality is brought home by the analysis of actual specimens of human reasoning such as are given as Exercises at the end of this book.

In such a work as this it would be pedantic to attempt to mention all the logicians from whose writings I have derived inspiration and suggestion, but I cannot refrain from expressing my special obligations to Dr. Bosanquet, Dr. Bradley, and Mr. Hobhouse. My thanks are due to Mr. W. P. Welpton, Lecturer on Education at the York Training College, for his kindness in reading certain portions of the book in manuscript and the whole of it in proof, and suggesting various improvements.

J. W.

LEEDS,
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THE LOGICAL BASES OF EDUCATION.

CHAPTER I

GENERAL NATURE OF KNOWLEDGE

§ 1.—Bacon begins one of the best-known of his essays with the words: “‘What is truth?’ said jesting Pilate; and would not stay for an answer.” Whether or not this is a libel on the Roman procurator, it certainly represents a mental attitude which cannot be adopted by the educator. One of the main parts of his work is teaching. And teaching has a two-fold aspect—on the one hand it regards the pupil, and on the other it regards the subject taught. Between these two it tries to establish the relation we call knowledge. The aim of teaching is, then, to lead the pupil to attain knowledge, and to develop in him the power of using and extending that knowledge.

Education
and
Knowledge

§ 2.—Now, if we ask ourselves what we mean by ‘knowledge’ we can find no other answer than that

Knowledge
and Truth.

it is that part of human thought which is proved true. And human thought is true just so far as it agrees with the facts of the world. All knowledge is, then, a grasp of truth. Not indeed of the whole truth: that we do not know, and never shall know. For the whole truth is the totality of reality or existence; in other words, the universe. As this is infinite it can never be grasped by the finite human intelligence. But, as generations succeed each other, knowledge advances. Taking each new position as a fresh starting point, man uses the knowledge he has acquired as a key to unlock fresh mysteries. What was so wonderful to our forefathers that it could only be accounted for by the assumption of supernatural agency is regarded by us as commonplace. Thus the bounds of superstition are continually contracted. For superstition has play only where knowledge is absent and fancy takes its place. As Mr. Clodd remarks, "magic rules the life of the savage,"¹ whilst the life of civilized man tends to become more and more completely ruled by a rational conception of law and system.

Knowledge
and
Supersti-
tion.

§ 3.—The thought of the modern civilized European is then, especially at first sight, very different from that of the savage. But this must not blind us to the fact that there is continuity between them; that the former has been evolved slowly and with difficulty from the latter. "The low intellectual environment of man's barbaric past was constant in his history for thousands of years."² It was only when man began to think and enquire, as well as to feel and fancy, that knowledge began to take the place of belief in magic, in charms, in fairies, and in all the other apparatus by which savage man attempts to explain

¹ *Tom Tit Tot*, p. 54.

² Clodd, *op. cit.*, p. 106.

the phenomena he sees about him. For modern Europe this birth of thought took place in Greece less than three thousand years ago. Since then there has been gradual advance, not however without long periods of stagnation, and even of retrogression. We need not go back very far to find superstition governing most of the life of the majority of Englishmen. King James I. believed firmly in magic, and in his book on *Dæmonology*, he speaks of the "devil teaching how to make pictures of wax or clay, that by roasting thereof the persons that they bear the name of may be continually melted or dried away by sickness." And James was "the British Solomon." Indeed, we need not leave our own day to find many examples of the truth that whenever knowledge is absent superstition reigns. The thorough-going conception of the universality of natural law exists amongst comparatively few even in our own day. "Scratch the epiderm of the civilized man, and the barbarian is found in the derm" says Mr. Clodd with undeniable truth. "In proof of which," he goes on, "there are more people who believe in Zadkiel's *Vox Stellarum* than in the *Nautical Almanac*; and rare are the households where the *Book of Dreams* and *Fortune-Teller* are not to be found in the kitchen."¹ And again: "As many a stable-door and mainmast testify, the nailing of horse shoes to 'keep off the pixies,' and, conversely, to bring luck to farmer and sailor, thrives to this day."² Many other examples are given by Mr. Clodd in the very interesting book from which we have quoted, and doubtless, every reader will be able to furnish additional instances. But enough has been said to illustrate the point that the outcome of ignorance is superstition.

Now, it should be noted that superstitions have

¹ *Op. cit.*, p. 97.

² *Ibid.*, p. 34.

their origin mainly in man's feelings and emotions, and especially in the emotion of fear, for the unknown generally inspires terror in a mind that has little or no conception of natural law. But superstitions are not merely mental errors, they have a practical bearing, for, in so far as they are believed, they determine conduct.

Further, what has been said has made it evident that the only cure for superstition is increased knowledge. And this has a deep interest for the educator; for, again to quote Mr. Clodd, "the art of life largely consists in that control of the emotions, and that diversion of them into wholesome channels, which the intellect, braced with the latest knowledge and with freedom in the application of it, can alone effect."¹

Knowledge
and Belief.

§ 4.—The above remarks have brought into prominence several important points which we shall do well to consider. In the first place we see that all belief is not knowledge. Belief is unquestioning acceptance by the mind. But the savage believes as firmly in various forms of magic as the civilized man does in the law of gravitation. And his beliefs influence his actions. "The Basuto avoids the river-bank, lest, as his shadow falls on the water, a crocodile may seize it, and harm the owner . . . the Arabs believe that if a hyena treads on a shadow, it deprives the man of the power of speech."² Now it may seem strange that such beliefs have been able to survive for so many generations the continual contradictions they must have received from experience. Indeed, this would be inexplicable were it not for another piece of experience—the fact of the marked conservatism which human nature shows with regard to its beliefs. Prejudice is an enormous

¹ *Op. cit.*, p. 109.

² *Ibid.*, pp. 79–80.

force in human life, and not less potent is that mental inertia which makes it hard for men to strike out a new line of thought for themselves. "It is not error," wrote Turgot, "which opposes the progress of truth; it is indolence, obstinacy, the spirit of routine, everything that favours inaction."¹ It is only when this mental indolence is overcome, when the spirit of enquiry is roused, that men begin to ask why they believe this or that, and according to the answer to retain or reject the belief.

This leads us to see both the difference and the connexion between belief and knowledge. So far as the mental state of any individual is concerned, belief and knowledge are so far alike that both are states of full assurance of the truth of the matter in question. But they differ in this—that in the case of knowledge alone this assurance can be shown to be justified by evidence other than itself. For example a savage believes that an earthquake is the mark of the anger of some supernatural being with those who suffer its effects, but he can bring forward no evidence outside the earthquake itself to support his belief. On the other hand, the modern scientific man can show by unimpeachable evidence that the earthquake is the result of natural laws and is itself an expression of the orderly working of the universe.* In thus relating the earthquake to other physical events he has replaced what was mere belief by knowledge.

There is a further and most important distinction. Belief is always an individual act. Any number of persons may, indeed, agree in believing the same thing, and this we loosely call "sharing a belief" or "holding a common faith." But the belief is not common if we use our words strictly. What is

¹ Quoted by Mr. Clodd, *op. cit.*, p. 108.