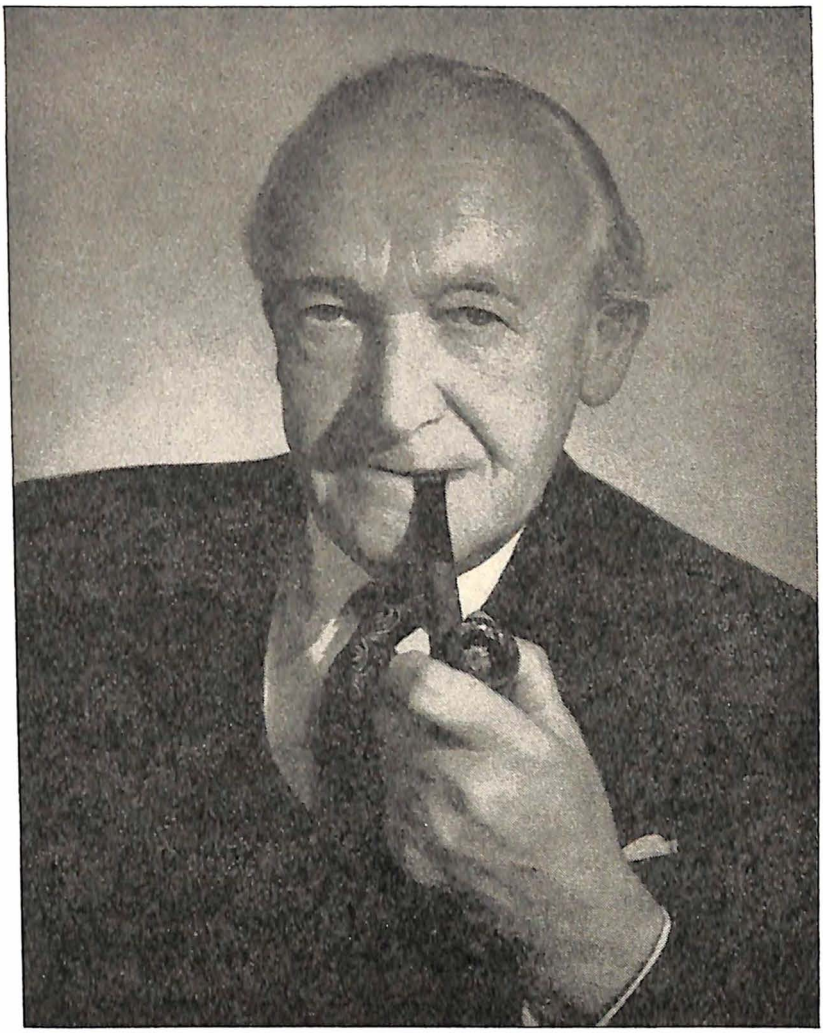
C. A. MACE : A SYMPOSIUM



C. A. MACE

PHOTOGRAPH BY LOTTE MEITNER-GRAF

C·A·MACE

A SYMPOSIUM EDITED BY
VIDA CARVER

METHUEN AND CO & PENGUIN BOOKS

Methuen & Co. Ltd, 36 Essex Street, London W.C.2
Penguin Books Ltd, Harmondsworth, Middlesex

First published 1962

Made and printed in Great Britain by
Unwin Brothers Ltd, Woking and London

Set in Jan van Krimpen's Spectrum type
Typography by Hans Schmoller

Catalogue No. 2/2620/10

CONTENTS

THE CONTRIBUTORS

VIDA CARVER was C. A. Mace's secretary from 1949 to 1961. She is a part-time tutor in psychology for the University of London Tutorial Department, and is doing research on the psychology of the film at the Slade School of Fine Art

PEARL KING, social psychologist and psycho-analyst; engaged from 1944 to 1951 in research for the Medical Research Council; a member of the staff of the Tavistock Institute of Human Relations

REX KNIGHT, Professor of Psychology, University of Aberdeen

S. G. LEE, Professor of Psychology, University of Leicester

R. S. PETERS, Professor of the Philosophy of Education, University of London Institute of Education

B. R. SINGER, Lecturer in Psychology, University of Reading

THELMA VENESS, Lecturer in Psychology, Birkbeck College, University of London

JOHN WISDOM, Professor of Philosophy, University of Cambridge

E. PRATT YULE, Professor of Psychology, University of Natal

C. A. MACE
A BIOGRAPHICAL NOTE

BY VIDA CARVER

ON 22 July 1961 the small village of Hollesley in Suffolk, some three-and-a-half hours' drive from London, found itself invaded by a convoy of fifteen private cars each carrying a maximum load of psychologists. The occasion was a triple celebration. Professor C. A. Mace, M.A., D.LIT., Professor of Psychology at Birkbeck College in the University of London, was holding his sixty-seventh birthday party. The guests had all at some time been his students and were there representing some two hundred old students now working in universities, clinics, schools, hospitals, and centres of industry all over the world who had contributed to a present for the Professor and Mrs Mace on the occasion of his retirement from academic life: a pool and fountain for their rose garden. The party had come together to see the fountain well and truly switched on; but they had the additional pleasure of hearing from Mrs Mace that her husband had that morning been invited by the University of London to accept the title of 'Emeritus Professor'. The sun shone. The goldfish were launched into the pool with champagne.

This gathering, in its warmth, lightheartedness, and informality, was very typical of the relationship there has always been between Alec Mace and his students.

Indeed, the round of parties, meetings, and presentations that took place during 1961 with the Maces at their centre sometimes suggested a débutante's coming out rather than an academic retirement. The four papers that form the core of this book were first presented at a party, an even larger gathering of ex-students, organized by the Birkbeck Psychology Alumnus Society (President: C. A. Mace) and held at the College three weeks earlier.

The setting was lighthearted but the purpose behind it was a serious one, and those invited to make contributions were selected according to a plan. This should be made clear now, if only in fairness to the many other people who would have liked to have been associated with a tribute to Alec Mace. Mace, as thinker and teacher, has made a unique and characteristic contribution to the thought of his time. But it is also characteristic of him that his ideas have been scattered liberally far and wide in books, articles, reports, reviews, forewords to other people's books, and in lectures and talks to students. His ideas have developed and changed over the years, and his interest in the living world around him has drawn him into many different fields. The plan therefore was to send out reapers into these various fields and then to present the story of Mace's life in terms of his academic achievement. The contributors – none of whom showed a moment's hesitation about undertaking the quite considerable labour involved – had all been at some time Mace's students. Each was chosen for the closeness of his or her association with Mace's work

at some particular point in his career. These essays are therefore, as they were intended to be, small tapestries of interwoven exposition and biography, and this foreword may be restricted to the filling in of gaps with a few dates and some details of Mace's personal history.

Alec Mace was born in Norwich and went up to Cambridge in 1912 intending to enter holy orders. He opted for the Moral Sciences Tripos as providing, as he then thought, a useful course of background reading for later theological studies. Among his contemporaries and closest friends were R. H. Thouless and I. A. Richards – and Marjorie Lebus, whom he later married and who became the mother of his two sons, David and Paul. Probably the strongest single influence on Mace's thought was that of G. E. Moore, who taught him at Cambridge. While at Cambridge, too, he became converted to pacifism, and although during the Second World War he modified his views he has remained actively interested in the peace movement throughout his life. However, the first outcome of his refusal to take part in a war he believed to be wrong was that he moved on to what he has described as his postgraduate studies (subsidized by a full-time compulsory State scholarship) at Wormwood Scrubs and Dartmoor. The results of these studies were embodied in what was in effect almost a doctoral thesis. It was published as Part II of *English Prisons Today*[1]* which was mainly concerned with the mental effects of imprisonment. This

*Superior numbers refer to the Bibliography.

volume was edited jointly by the saintly Quaker Stephen Hobhouse and A. Fenner Brockway, even then a well-known social reformer. They were assisted by a steering committee a member of which was George Bernard Shaw, who contributed a long (never published) Introduction – unpublished because Shavian effervescence was felt not to be in harmony with the serious moral tone otherwise pervading this volume.

In 1922 he was appointed Lecturer in Philosophy and Psychology at the (then) University College of Nottingham where he introduced the first courses in experimental psychology to be held there, and may even have set, for the first time, the problem of the cannibals and the missionaries* that was to fire the imagination (and exhaust the supply of matches, shirt buttons, and paper-clips) of many successive generations of first-year students of thinking. Three years later Mace was invited to start a psychological laboratory at the University of St Andrews, and it was here that he conducted, under the auspices of the Medical Research Council, the series of experiments on incentives that placed him among the pioneers who were applying experimental methods to the psychological problems of industry.

But at this point the main story passes into the hands of other contributors to this book. These

*Three missionaries (all of whom can row), three cannibals (only one of whom can row), a boat holding two men, and a river. For obvious reasons, the number of cannibals on either bank must never exceed the number of missionaries. Then how to get the whole party from one side of the river to the other without losing a missionary? For the use Mace makes of this problem, see 'Thinking and Discovery in Science'.[112]

experiments are discussed in some detail by Ella Pratt Yule, who was at that time Mace's first Ph.D. student and is now Professor of Psychology at the University of Natal. In 1932 Mace was appointed Reader in Psychology at Bedford College, University of London, taking over the direction of the Laboratory from the late Professor Edgell. During the war he also acted as part-time head of the Department of Psychology at King's College, London, following the death of Professor Aveling. This department had been left behind, temporarily attached to Birkbeck College, when the rest of King's joined the war-time evacuation of London. The department was formally transferred to Birkbeck in 1944 and Mace accepted the first Birkbeck Chair of Psychology. Among his Bedford graduates who followed him to Birkbeck was Pearl King, who became a member of his Medical Research Council team investigating psychological problems of the building industry and who writes in this book about his contribution to industrial psychology.

Conditions at Birkbeck were for a while difficult and cramped. During the war the College's undergraduates – all part-time students employed during the week as schoolteachers, clerks, technicians, and in many other occupations – attended lectures on Saturdays and Sundays in a prefabricated hut. The ill-equipped laboratory was part of a half-ruined school set in an old city graveyard just off Fetter Lane. (Mace has always retained his respect and affection for consecrated places. His laboratory at St Andrews was housed at first in the cloisters of the College Chapel.) Mace's

colleagues in the early days included R. J. Bartlett, Dr May Smith, Dr J. Hadfield, and later Alec Rodger. But soon after the war building recommenced on the new College in Malet Street, and the department that Alec Mace established there on the fourth floor (added as an afterthought to accommodate the recently acquired psychologists) was one of the best equipped and became one of the largest and best-known departments of psychology in the country. Today, undergraduates still earn their livings by day, but now they come to lectures in the evenings, and they have proved themselves as successful in examinations as students at full-time colleges. Of the graduate and postgraduate students passing through the Birkbeck Department during Mace's years in the Chair, five have been appointed to Chairs or headships of departments of psychology in Great Britain, and one – R. S. Peters, whose paper 'C. A. Mace's Contribution to the Philosophy of Mind' forms part of this volume – to the Chair in the Philosophy of Education at the University of London Institute of Education. Many more hold responsible positions in the universities of this country and of the Commonwealth. Although Mace himself has been mainly concerned at Birkbeck with studies in theoretical psychology, the department has under his leadership developed both its undergraduate and postgraduate laboratory work, built a new animal laboratory, and expanded its postgraduate work in occupational psychology to the point where a separate Division of Occupational Psychology was recently established, under Professor Alec Rodger.

A Biographical Note

Among those now lecturing to a new generation of Birkbeck psychology students there is one who was an undergraduate under Mace: Thelma Veness. She lectures on social psychology, and has contributed to this collection the paper on 'Mace as a Social Psychologist'. Another old Birkbeck student, S. G. Lee, who read for his Ph.D. in the Department, is now Professor of Psychology at the University of Leicester. His paper, 'The Writings and Thought of C. A. Mace', pays particular attention to Mace's development as a writer and helps to draw the whole academic history together.

Something should also be said of some of Mace's many extra-collegiate activities. He was a member of the British Productivity Team which visited the United States in 1951, and he is well known as an active supporter of extra-mural adult education and the Workers' Educational Association. He has been a member of the Executive Committees of the British Sociology Society, the National Institute of Industrial Psychology, and the British Society of Aesthetics. He has written extensively on a wide variety of topics, and is the editor of Methuen's Manuals of Modern Psychology and the Pelican Psychology series.

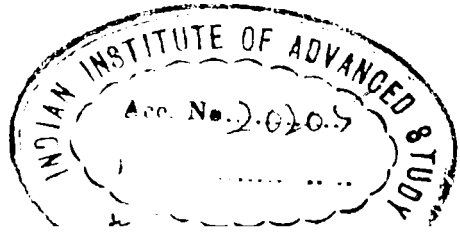
He has also been President of the Psychology Section of the British Association, and is one of the only two people (the other was Beatrice Edgell) who have held the presidencies of both the British Psychological Society and the Aristotelian Society. His continued reputation as a philosopher throughout the years while he has earned his living as a psychologist

prompted the invitation extended to one of his old colleagues, John Wisdom, Professor of Philosophy at the University of Cambridge, to add something to this volume. The response was the paper entitled 'Mace, Moore, and Wittgenstein' which appears in Part Two. The Introduction to Part One, which serves also as a summary, 'C. A. Mace as a Psychologist', is the contribution of another old colleague, Professor Rex Knight of Aberdeen.

The intention when the book was planned was to give some account of Mace's life and work, but those who read it will find that something else emerges too from paper after paper: a consistent portrait of the man himself. His singularly undomineering personality manages to dominate the whole work. His deep wisdom and his personal charm, his humour and his humanity, and above all his great gifts as a teacher, are all here. And if contributors have sometimes found it more difficult to condense the essence of his thought than to convey the flavour of his personality, there is a good reason for this. Mace's style is the man: relaxed, sophisticated, his points developed at his ease in often delightful analogies, illustrations, and paradoxes. His means of expression and his thought, like his practice and his theory, are one. Quotations in the text supply brief samples, but extracts and summaries cannot do justice to the texture of his thought. Readers who wish to know more about the ideas that have stimulated two generations of young psychologists, and about the development of psychology in this country during its most

fascinating period of growth – the half-century since Mace began to think and then to write about it – cannot do better than turn directly to the books and articles listed in Bernard Singer's comprehensive bibliography at the end. A valuable and many-sided experience awaits them.

PART ONE



INTRODUCTION
C. A. MACE AS A PSYCHOLOGIST

BY REX KNIGHT

A PROMINENT feature of Mace's work in psychology is that he has always enjoyed it. He is not one of those dons who have long been bored with their subject; and he is not one of those psychologists whose concern with psychology is tense and defensive. He has always been extremely interested in psychology, and this interest has always been light-hearted and enlivening, both to himself and to others. When I first met him, more than thirty years ago, he had established the teaching of psychology in what is now the University of Nottingham and he was vigorously establishing it in the University of St Andrews. What immediately impressed me was the great pleasure that it gave him to be employed in psychology. And what was conspicuously true of him then is equally true of him now.

A second characteristic has been his active and venturesome open-mindedness. When others have been attaching themselves to one or other of the warring schools as though it were the sole depository of truth, he has pursued his individual way, not enrolling under any of the different banners, not regarding any group as beyond the pale, not making for himself a mere patchwork of bits and pieces, but all the time giving every new (and old) idea a run for

its money and assessing and developing it by his own creative and critical intelligence. Mace's alert tolerance has often been of great benefit to psychology. For example, just as, according to James, Ward's 1886 article on psychology in the *Encyclopaedia Britannica* 'marked the transition of British psychology from one epoch to another' so the new article[19] that Mace wrote with Stout for the fourteenth edition in 1929 again broke new ground in an established encyclopedia by seeking to do justice to what it called the 'objective approach'.

A third feature of Mace's psychological work has been the wide range of his psychological interests. This has extended from such philosophical questions as the mind-body relationship and the nature of value judgements to such experimental topics as the influence of a target on performance and such practical applications as the psychology of study and ergonomics in the home. During the rapid expansion of British psychology during the past forty (and especially the last twenty) years it has been of great value to have had in a key position in the metropolitan university a man whose work in philosophical psychology has been highly regarded by such authorities as Stout and Moore, and whose work in applied psychology has led to his being appointed to such bodies as the Working Party that the Government sent to the United States to study American industrial management.[85 87 89]

Fourthly, in all his work Mace has preached and practised his principle that psychologists must 'avoid

obfuscation'. He has acknowledged, of course, that technical terms that embody important concepts and facilitate important distinctions are necessary in psychology as in other sciences. But he has campaigned with vigour and wit against those who think that pretentious jargon is an essential element in any article or book that aims at being scientific. 'I have not met', he said in his Presidential Address to the Psychology Section of the British Association in 1951, 'a psychological fact or a psychological theory that could not be expressed, at the cost of a little reflection, in language which an intelligent schoolboy – up to School Certificate standard – can understand.'[84] Mace's recognized gifts as a writer led to his being appointed General Editor of the Pelican Psychology series[130–154] and of Methuen's Manuals of Modern Psychology.[155–170]

Finally, there is Mace's great contribution to psychology through his teaching. If it be important, as indeed it is, to stimulate, to instruct, to encourage, and to help undergraduate and graduate students, then Mace has contributed to psychology as much as any of his contemporaries, as this book abundantly makes plain.

THE YEARS AT ST ANDREWS C. A. MACE AND EXPERIMENTAL PSYCHOLOGY

BY E. PRATT YULE

I OWE the honour of being invited to take part in this symposium on Mace's life and work to the fact that I was the first of his many Ph.D. students. My memories of him go back to 1925, shortly after he first came to the University of St Andrews. I knew something of his ideas and work, and much about his achievements between that time and 1932, when he went south again to take over the direction of the laboratory at Bedford College from the late Professor Edgell.

I do not know with what regrets and apprehensions Alec Mace may have crossed the Tweed into what Tacitus described as 'the territories of the barbarians', but I do know that he later looked back on his '*dies andreanae*' with nostalgia, and thought of the years he spent there as constructive years, of considerable significance for the development of his own thinking. He himself told me 'at St Andrews I began to think new thoughts', and looking back over the course and development of his ideas, it becomes clear how many of the trains of thought he has found most exciting and fruitful can be traced back to this time of his life.

The Years at St Andrews

St Andrews at that time was a good place in which to think. The ancient little town, tucked into the corner of a wide sweep of bay, was an enchanting place, unworldly, and very peaceful. Since Oxford and Cambridge had already made their peace with commerce, it was probably the only real university town left in Britain. But it had its siren side, and many good men were lured into a schizophrenic-like remoteness from the real world of men and affairs. However, only a few miles away there was the tough and busy city of Dundee with its industries and the problems which follow in the wake of industry. It was typical of Alec Mace that he spent much time there. With the cloistered beauty of St Andrews as a backdrop, he looked across the Tay and must have reflected upon what he observed there – men at work on specific tasks in specific situations. It is not surprising that the first tasks which he set for himself in his new laboratory at St Andrews were concerned with unravelling some of the complex of determinants of 'the will to work'.

It was fortunate that the situation of the University at that time was such that Mace had time for his own work. Almost as old as Oxford, St Andrews was in those years no northern Redbrick. It was small; excluding the faculties in Dundee, there could not have been more than five hundred students. For some time Mace ran what was tantamount to a one-man department, so Parkinson's Law did not apply. He was not overwhelmed with administration, and Ph.D. students came forward one at a time. Under such circumstances, he must have found it possible to

provide something of the liberal education of which he later wrote in *The Idea of a Faculty*.[64]

The St Andrews of those days was not only a small university; financially speaking it was also a poor one. But Sir James Irvine, who was Principal throughout the years which Mace spent there, was building it up on all fronts. In the face of opposition from many quarters in a university where 'Mental and Moral Philosophy' and the Classics were revered as the very heart of the Faculty of Arts, Principal Irvine gave Mace every encouragement in his efforts to advance psychology in general and experimental psychology in particular. It was he who found the money to establish an experimental laboratory and he gave Mace staunch support in his endeavours to obtain grants in aid of psychological research.

If the University was at that time a poor one in material terms, there were other ways in which it was rich. There were men of distinction holding Chairs. Among them were Burnett, Lindsay, H. J. Rose, and D'Arcy Thompson, whom Mace inveigled into giving lectures on the anatomy of the nervous system, using cadavers, to his psychology students. In the Chair of Logic and Metaphysics there was George Frederick Stout, whose support and friendship Mace repaid, among other ways, by his careful revision of Stout's famous *Manual of Psychology*.[44] There was a remarkable diversity of personalities, amounting at times to eccentricity, as well as a diversity of talents and views. Even before Mace had gathered a staff and research workers for his new department, he could not have

lacked opportunities for the exchange of ideas. It was, however, not long before he was joined by Rex Knight, John Wisdom, and, a little later, by Babington-Smith and Portia Holman.

Since the student body was small, professors knew their students and students knew their professors, outside the lecture-room as well as within it. For Mace's students, after their first year, class meetings were tutorials rather than lectures and most frequently turned into lively discussion groups rather than tutorials. It was always exciting and stimulating to be present at these unpremeditated group discussions. They constituted then, and have remained since, Mace's most successful way of teaching. Others have described him as a good democrat, and only a good democrat can teach in this way, for it requires respect for the opinions of other individuals, no matter how young or ingenuous they may be. In his seminars, Mace always assumed a society of equals, and it is possible that by so doing he himself may have gained something. Many years later he remarked that at St Andrews he had been encouraged and stimulated not only by Stout and by his colleagues, Knight and Wisdom, but also by his students.

It is possible that Scottish students may have had some qualities which appealed to Mace as much as his interests and attitudes appealed to them. The small student body of the time was by no means homogeneous, but the backbone of it were Scots, whom Edwin Muir has described as 'extravagantly inquisitive'. Mace himself is extravagantly inquisitive; he has never

stopped asking pertinent and often awkward questions. His students at that time were inquisitive about philosophical issues and preoccupied with moral ones – like Hume, whose genius was peculiarly Scottish and in whom Alec Mace was greatly interested. Philosophy was taken very seriously at Scottish universities and certainly at St Andrews. A little philosophy endlessly increases the possibilities of argument, which was a favourite pastime of St Andrews students at that time. Like his students, Mace was preoccupied with philosophical issues. He has in fact never ceased encouraging even experimental psychologists to take an interest in 'the philosophy of mind'. Then, too, he shared his students' enjoyment of argument as a pastime. He certainly delighted as much in throwing to them a bone of contention to be wrangled over as they delighted in the wrangling.

There was another aspect of the inquisitiveness of his Scottish students which may have appealed particularly to Mace. In spite of their Humes and Adam Smiths, the main object of their curiosity was mankind. They were insatiably interested in other people, not merely in terms of general principles of human behaviour but first and foremost as human beings seen 'in the round'. This is, of course, a literary rather than a scientific orientation, and it is no accident that Scottish literature has produced in Boswell's *Johnson* and Lockhart's *Scott* the two greatest biographies in the English language. This kind of interest in human beings was characteristic of Mace at that time and it has had effect on his later thinking and that of his

students. He made them see clearly that psychology, like any other science, investigates general laws and cannot be satisfied with mere descriptions of individual psychic processes or their historical development. But while the scientific Mace urged the search for the uniformities in human nature, the literary Mace appreciated the exact description of historical processes in, and the resulting complexity of, individual x. It was this appreciation of human beings 'in the round' which ensured that Mace never took a simple view of human motivation or encouraged his students to do so. I remember some seemingly casual criticisms he offered of Bentham's pleasure-pain calculus, followed by others of McDougall and instinct theories. He then suggested that if we wished for a better understanding of the nature of human motivation we might turn to the novelist's descriptions of character and behaviour.

It is easy enough to see in retrospect how this appreciation of individual character and the complexity of human motivation led Mace to a realistic assessment of the motivation of man in society and hence to a fruitful line of attack on the problem of incentives.[35] In the matter of human thinking as well as that of human motivation, he has also refused to turn his back on the disturbing complexities in order to provide the neat answer. It is interesting that Mace has never turned his back on human beings at all; he has never, as Tolman put it, 'settled down with a nice cosy rat'. (This does not imply that he has any objection to rats! Just as he has welcomed any field of inquiry or any technique which promised answers to significant

questions, he welcomed 'rat psychology' to the extent of establishing an extensive animal research unit at Birkbeck.)

Mace's interest in the philosophy of mind on the one hand, and in the observation of behaviour on the other, led to his instituting at St Andrews courses in psychology which must at that time have been unique in their scope and the breadth of their approach. But the main achievement of his years at St Andrews grew out of the emphasis he placed on experimental psychology. He instituted a laboratory and encouraged the research of others as well as pursuing his own. Above all, he succeeded in bridging the gap between psychology as it had been – a purely Arts subject and a not quite respectable hanger-on of logic and metaphysics – and psychology as it was becoming – an experimental and applied science. Since that time he has devoted much of his energy to maintaining the place of psychology in both faculties.

It is interesting to reflect on the youth of psychology as an experimental science in Britain. During the last fifteen years of the last century, when there were Chairs of Psychology in Germany and America and men like Sanford and Titchener were writing texts for courses in experimental psychology, there was little of what Boring calls 'human psychology' in Britain at all. It was only in 1913 that the efforts of Ward, Rivers, Myers, and Bartlett were rewarded by setting up an experimental laboratory at Cambridge. Mace had gone up to Queens' in 1912, so his experience covers the whole development of experimental psychology in Britain.

In that laboratory, he was in touch with men of diverse interests. It was, until recently, characteristic of British psychology that those who made the greatest contributions to it had been trained in other disciplines. Ward and Stout were primarily philosophers; Rivers and Myers were physicians, a fact to which they owed their early recognition of the significance of Freud. Rivers was interested in ethnology as well, and neurologists and physiologists like Head, Sherrington, and Adrian also took an active interest in what was going on in the infant laboratory. Additionally, Mace knew the work of those who, after the war, produced much basic research in the applied and industrial fields, H. M. Vernon, Muscio, Farmer, Wyatt, and May Smith, to mention only a few.

When he came to St Andrews as Lecturer in Philosophy and Psychology, he brought with him the garnerings of his wide experience of this early and exciting phase of British psychology, so the experimental course which he provided was as broad and varied as the theoretical discussions. The conventional experiments on the special senses and the psychophysical methods had their rightful place, but much more was included; for example, students got some training in what would today be called psychometrics and were made acquainted with some of the techniques then used by the N.I.I.P. in the study of work, fatigue, and accidents. At a time when experimental courses in some other university departments were somewhat stolid and restricted, Mace's students were encouraged to read Jung on 'psychological types' and

to try their hands at the detection of criminals (*sic*) using association tests, reaction times, and the galvanic skin reflex. He also introduced much of the work which Bartlett had been doing at Cambridge on remembering, although it was not until much later that Bartlett's influence on some of Mace's ideas became apparent to me. Arising out of his study of primitive cultures and his work on remembering, Bartlett anticipated to some extent the 'culture pattern' and role theories of the 1940–50 epoch. Rather similar concepts are implicit in Mace's approach to industrial problems and his views on the behaviour of man in society. Again, the gist of Bartlett's conclusions about remembering appear to be: (a) what any person remembers is unique to that person; (b) what any person remembers reflects the socio-economic and ethnic group to which he belongs. This is an apparent paradox which not only reminds one of Mace's way of thinking but also of his views on man in society. He gave fair weighting both to the uniqueness of the individual man and the effect of group pressures upon him, for he saw how the two were interconnected. Finally, Bartlett's attitude to method in psychology, at a time when brass instruments and quantitative results were regarded as the hallmark of what was 'scientific', must surely have influenced Mace and been passed on to his students, for Mace taught his students not to be afraid of attempting the study of complex psychological processes and not to despise purely qualitative findings. Like Kulpe, he would set them to writing detailed introspective accounts of

their own problem-solving processes – 'the missionaries and the cannibals' was one of his favourites – and these he would examine with almost Titchenerian severity. Nevertheless, we, his students, often arrived at most un-Titchenerian conclusions, and became convinced of the reality of the *Aufgabe*, the *Einstellung*, and the *Bewusstseinslagen*. This was rather typical of Mace's teaching. His students used, among others, Titchener's massive texts, but they were encouraged to read Marbe, Watt, and Ach and to sort out the differences for themselves on the basis of their own observations.

Because of this attitude of Mace's and because the years between 1920 and 1930 saw the heyday of psychological 'schools', the theoretical discussions which went on in his seminars were enthralling. We argued about McDougall ('Men or Robots?'); about J. B. Watson ('Are Instincts Really Necessary?'), and about Köhler. Despite our inquisitiveness and love of argument, many of us did not know what we should think, but we did know that Mace would never tell us!

Nevertheless, I have seldom met any of his past students who have not confessed to finding, many years later, that ideas which they had fondly believed to be their own had in fact been his. It never seemed that he was giving his students any particular lead. Like William James, he stimulated students to think, but not necessarily to think what he thought. He preferred to toss his ideas and theories into the discussion and let them take their chance. At this time he was, in any case, feeling his own way towards

his own views about such issues as the nature of instincts and their place in the explanation of human behaviour,[20] and was himself pondering the merits of the behaviourist and introspective approaches to the study of behaviour.[76]

It was about 1927 that the experimental laboratory towards which Mace had worked became a reality and he began his work on incentives.[35] The existence of a laboratory and the fact that he was himself actively engaged in experimental research had an immediate impact on attitudes to psychology in the university. I remember a science student coming in on one occasion when Mace was working on one of the 'incentive' experiments, using students as guinea-pigs, an impressive array of contact pens and wires and a twelve-pen chronograph. He looked surprised and said, 'I didn't know people actually DID psychology. . . . I thought they only talked about it.'

Mace's work on incentives did much to educate both the active participants, and those who merely looked on, in the techniques and the sheer fun of experimental research. He kept them in touch with his work and they knew that he was tackling problems of genuine human significance.

The questions which lay at the heart of the inquiry were not concerned with any putative general 'will to work'. Anticipating by many years, it seems, some of the findings of Hebb and Heron, Mace said that 'a man of normal constitution and in normal health will prefer almost any form of activity to total idleness'. He rejected the idea that any generalized form of

willingness to work could be effectively operative in the specific situations with which men were faced in industry, for he argued that a habitually active person might be strongly disinclined to be active about some specific task, while 'a worker not conspicuously of energetic or active disposition' might be induced to be very active, and to concentrate all his activity and all his will upon the performance of some specialized task.

> Consequently, the practical problem in industry is not so much that of stimulating a generalized will to work as one of directing available energy into specific channels. . . . The normal procedure in so directing human energy consists in the employment of incentives, commonly the incentive of a reward. . . . The desire for the reward engenders a more specific intention to perform the industrial operation, and it is only in so far as this is so that the incentive is effective.[36]

Thus Mace reduced the problem of incentives to work to its essential aspects. He saw clearly that in any situation in which incentives were used, efficiency in performance would be controlled throughout by some *specific intention to perform some specific task.* The aim of the series of experiments thus became to discover whether it was possible to control the specific intention of the worker to perform the specific task.

Having reduced the problem to one central question which could be answered experimentally, Mace then set himself to examine *the ways* in which the specific intention to perform the specific task might be controlled. He asked the following questions:

E. Pratt Yule

1. Is it possible to control the way a worker will think about his task? This question introduced the whole matter of *standards*, which may be explicit or implicit, but will certainly affect what the worker sets out to achieve; it is thus pertinent to the estimation of his output and hence his efficiency. Mace described this aspect of the problem of controlling the specific intention as one of controlling the *direction of the intention.*

2. Is it possible to control the strength of the worker's intention to perform a specific task, i.e. *the intensity of the intention* to perform it? This question introduced the whole matter of the instruments commonly used to increase the intensity of the intention. The most obvious is the system of remuneration, but there are many others which are less obvious and, indeed, subtle and complex both in themselves and in their operation.

3. Is it possible to control the time during which a worker will maintain the specific intention, i.e. the *duration* of the will to perform the specific task? On this point Mace criticized a current tendency to attribute too much importance to intensifying the will to work and too little to the factors which could maintain it at an optimum level. It was necessary to qualify the general principle that efficiency increases with intensity of purpose. The principle was limited by many considerations important in the concrete individual situation. Intense effort, as is well known from observations both in factories and examination halls, is likely to interfere with efficient performance. The desideratum is to consider together the intensity and the

duration of the intention of the particular worker performing the particular task in order that he shall maintain a high level of output. Here the length of time for which he is required to maintain it is a vital factor.

Mace's hypothesis was that 'the will to work' operates through specific intentions which have particular objectives which vary in intensity, duration, and times of arousal. The will to work is controlled through the manipulation of these variables. Among the conditions which affect these variables are those that directly or indirectly suggest or prescribe a standard of achievement. Experiments were designed to elucidate the precise nature of the effects of these conditions on the intention to perform the task, to examine the effects themselves, and to consider how they are produced.

The problem, the hypotheses, and the specification of the aims of the inquiry are given in some detail to illustrate the way Mace thought in a situation requiring experiment. The experiments themselves can be only briefly described. The first involved arithmetical computations which had to be carried out according to a rather complex set of instructions, each of the experimental groups being required to work under a different set of these. The directives were designed to discover whether performance would be better if the subject worked to a specified absolute standard of output or, on the other hand, aimed only at improving on his own previous performance. An important

aspect of this experiment, relevant to work not only in the factory but in any situation where achievement is involved – in, for example, the schoolroom – provided information about the effect of knowledge of previous results upon subsequent performance. The conclusions drawn from the data indicated that the prescription of a fixed standard gives a more rapidly rising curve of performance and that it reaches a higher level. The reports of the subjects themselves raised many interesting questions, and so this experiment was followed by another designed to discover whether, at *each stage of practice*, similar effects of a prescribed standard on performance would be found. From this experiment the most significant deduction was that increase in efficiency is achieved less by the intensification of the will to work than by its prolongation.

During these two experiments, the existence and important effects of self-set standards and affective attitudes to the task became increasingly obvious. Hence Mace followed this up with a third experiment which was designed to throw light on the effects of the *indirect* suggestion of standards to the performers. (This, incidentally, proved a popular experiment with the subjects since it consisted in an elaborately standardized and scored game of darts. Intensity of intention was increased by the fact that the subjects found that by undertaking to act as guinea-pigs for this experiment their prowess as dart-throwers at the 'local' was greatly increased!)

The results of this third experiment substantiated the previous finding that 'good incentives' intensify

and prolong the will to work. Now a further conclusion, which has wide applications in several fields of work, was arrived at – the indirect suggestion of an appropriate standard, presented at regular intervals together with clear-cut norms, will counteract the tendency to fatigue and boredom. As Mace vividly expressed it, it acts as a kind of 'psychological ratchet' to counteract those tendencies which produce plateaux and reversals in the work curve, thus wasting time and effort in the performance of repetitive tasks of any kind.

In this brief outline of the series of experiments, not all have been mentioned. There was also, for example, an engaging ball-and-slot test, the idea for which Mace probably derived from a children's toy popular during the First World War and called 'Popping into Potsdam'. The conclusions from this experiment appear to me the most significant of the deductions drawn from the data derived from this series of experiments. These led on to a general discussion of the nature and control of standards which, wittingly or unwittingly, affect the individual's performance on specific tasks. The most general and, to my mind, the most valuable conclusion at which Mace arrived was that standards are not imponderables which cannot be controlled and manipulated in the interests of achieving better output and more efficient performance. On the contrary, standards are subject to many different kinds of control, not merely by reward and punishment, but by the issue of explicit instructions concerning expected standards, and, above all, by means of

measuring the individual's output and giving him information about his own results and achievements.

Mace went on to apply his conclusions to the field of industry, where they are obviously of immediate relevance. In true Macean fashion, he ended his report with some stimulating observations about the capacities of individuals and their status and mobility within a hierarchically organized social structure – a field which he was greatly interested in at that time and had discussed fully elsewhere.[33] As always, he was seeing his specific problems within their wider setting.

As experimental work, the various studies which constitute this inquiry into incentives are outstanding. The deceptive simplicity and economy of the report was achieved only by clear and rigorous thinking and the ability to get down to the heart of the problem and state it in terms which suggested appropriate means and methods for its investigation. The findings owe their significance to the honest and objective observations on men at work which suggested the original hypotheses.

The significance of the findings is not confined to the industrial and social fields. Much that Mace said about the control of standards as a means of achieving efficiency applies equally well to work and learning in the school or lecture-room and to some of the problems of effective teaching at any level.

Finally, much that he said in his general discussion of the nature of incentives clearly implied a concept of human values in which he was unceasingly interested, but which he only explicitly discussed at a

much later date.[94] Even those problems which Mace selected as worthy of intensive and rigorous experimentation were chosen by him because of their human significance and because they had implications over a wide field of human behaviour. Others have talked of his 'global' view and his preference for seeing the wood before examining the trees. The significance of his experimental work on incentives is that it not only vindicates his approach – his insistence on first having a look at the wood – but also shows with what success he could combine the microscopic with the macroscopic eye.

C. A. MACE'S CONTRIBUTION TO INDUSTRIAL PSYCHOLOGY

BY PEARL KING

THE contribution of C. A. Mace to industrial psychology began in the laboratory. There is no need here to add anything to Ella Pratt Yule's account of his early studies of 'Incentives'. His later contribution is more difficult to delimit: perhaps it might best be designated an *attitude* to the problems of the field. On reading his published works on the subject, one is aware all the time of a philosopher's mind at work upon practical problems. A large part of his interest is *methodological*, and it is here that he makes his most characteristic contribution. But it is also characteristic of Mace that his influence on industrial psychology has been, at least to some extent, a product of his personality: of his doing the things he did at the times that he did them, and of the relationships that he established both with his co-research workers and with the world of industry. The setting in which his thinking has developed is therefore very relevant to its appreciation.

I first met Alec Mace at Bedford College in 1937, where he ran the Psychology Department, ably assisted by Madeline Kerr. When I became a student in this department, it was a small but very much alive group, and it was exciting to belong to it. From the first, I got the feeling that the ideas and experimental

results of students were valued and respected, and this, in turn, helped the students to respect both their own work and their own potentialities.

In 1939, when the Second World War broke out, Bedford College was evacuated to Cambridge, and the Psychology Department became the guest of the Cambridge Psychological Laboratory, whose director at the time was Professor F. C. Bartlett. Under Mace's guidance, the wide psychology curriculum of London University was augmented by lectures on the more specialized psycho-physiological approach followed in that department. G. C. Grindley, K. J. W. Craik, and Russell Davis reported their current research work to us, and we even attended lectures from Professor E. D. Adrian, who had been almost a mythical figure to us. For students who were able to appreciate it, this was an exciting extension of their horizons. It was also good to see Mace against the background of his own academic setting and to see his obvious pleasure in this contact with his philosophical past. It was this, perhaps, that led me at the time to 'pigeon-hole' him firmly in the psychological laboratory with philosophical psychologists whom one could not imagine ever leaving the safety of the laboratory. This stereotyped image of him, I learned later, was not altogether a correct one, even at that time. Mace had already published *Sibylla or the Revival of Prophecy* in 1927,[13] in which he had indicated the breadth of his interests.

In this short book he 'speculates' (which he regards as a vital and important aspect of creative, scientific activity) on the possible repercussions of the applica-

tion of certain psychological hypotheses about human behaviour to the organization of Society and the development and quality of human relationships within Society. I can now see that in undertaking this speculation he was attempting to extend the horizons of our thinking on these subjects, on the assumption, which I believe has characterized his work, that, if a scientist wishes to get out of a closed circle of thinking which is leading to sterile results, one way is to extend the boundaries of the problem, to see it in a wider setting, and thus to give it a new frame of reference. In *Sibylla or the Revival of Prophecy*, when discussing the growing application of psychology to industrial problems, he wrote, 'They are groping towards more solid foundations in Industrial Psychology – the philosophical significance of which has, up to the present, escaped the attention it deserves.'[13]

I can now also see that it was his philosophical interests and his capacity, stemming from these interests, to ask awkward questions, that helped him to see the everyday practical problems of living and working as relevant to the psychological understanding of man.

Another factor that I believe is important in the development of his interest in applied psychology was that in his gradual 'transition' from Bedford College to Birkbeck College, which started during the war, he came into contact with older students, who worked during the day, and who came to lectures in the evenings (or at week-ends during the war). These students brought their working problems and experi-

ences into the discussions of psychological mechanisms and, I suspect, gave Mace the stimulus, or perhaps the excuse, that he needed to concern himself more directly with applied psychology. It would involve a discussion of the 'chicken or the egg' variety to discover whether Mace first inveigled his students into industrial research in the field or whether they lured him there. Perhaps it was a two-way process! Suffice it to say that when I returned to the University after three years in industry as a personnel officer, it was to take part in some research that Mace was sponsoring: a comparison of methods of training manual workers, financed by a firm of industrial consultants. That he pioneered a number of research projects in applied psychology, at a time when it was not 'scientifically respectable' for university psychology departments to be associated with any research that could not be undertaken mainly under laboratory conditions, was in itself a valuable contribution to the advancement of this branch of the science.

Mace was not content with isolated solutions even to the practical problems of industry, although they might be shown to bring about a temporary improvement. Such problems, he felt, must be considered within the whole psycho-social setting in which they occur. This attitude may be illustrated by his approach to the study of incentives. From his early laboratory experiments on incentives he wrote what is surely a classic on the subject. But he did not stop there. In 1948, in his paper 'Satisfactions in Work',[62] he returned to the subject, and produced a summary of his think-

ing on incentives within the wider setting of 'Work'. In this paper, when discussing systems of incentives, he wrote: 'The failure to appreciate the complexity of human motivation is, perhaps, the outstanding weakness of every system of industrial incentives so far practised or proposed'; and again, 'The pay-packet theory is not a bad one to start from, but it is apt to stifle thought precisely at the point where thought should begin.' He made it clear that the point where thinking should start is with the complexity of human motives that have to be understood if we are to get anything like a true picture of events. 'Only very rarely indeed', he wrote, 'does a man do exactly as he wants. Most of our time we, all of us, are hag-ridden by our personal ties and our sense of obligation.' He formulated the principle of 'control from around', from group pressures and obligations, etc., which he maintained may be even more effective than 'control from above' or 'control from within'.

Thus, he took the problem of incentives, of how and why men work, out of the limited setting of the 'carrot or the stick' controversy, and put it into the wider setting of the satisfactions that men get from work, which he saw as being intimately connected with morale in the working group and with personal relationships. He showed how the patternings of roles, and the social perception of the tasks undertaken in these roles, carry certain covert or hidden satisfactions for the individual. In putting forward this principle of 'control from around', Mace was drawing attention to the importance of the study of the interaction

and patterning of the psycho-social and technological factors in the situation. He maintained, and I think rightly so, that the elucidation of these psycho-social factors is the main task of the psychologist.

It may well have been this realization that finally enticed Mace into what might be called 'operational research' in industry. Only in a real-life setting could he find the answers to the questions he was continually asking himself and his students. What does the plumber need to know in order to do his job? How does he do his job? How does the foreman spend his time? How does he see his problems and his manager? These were simple questions in themselves, but to answer them he had to leave the psychological laboratory and enter the work situation of the people concerned. Mace made it clear that if you can discover the answers to these kinds of questions you will have more chance of elucidating the psychological factors actually operating in the situation. Furthermore, you will be in a better position to see them as they are experienced within the frame of reference of, for example, the plumber or the foreman. If this approach were followed, it should be easier to avoid the error of formulating hypotheses or experiments based on a projection of what the psychologist *imagines* to be there and to be happening in the situation. Experiments so based could show statistically valid results, but might well bear no relation to the actual state of affairs as dynamically experienced by those concerned.

The starting-point of Mace's approach to psychological investigations was, then, the 'person in a

situation'. We might label him as a 'psychological-existentialist'. He is fascinated with the whole process of living and working, and while he is very aware of the limitations of the psychologist's contribution, he is able to see that a psychological training may help in the formulation and verbalization of certain experiences and perceptions. Thus, it was with his support that I went into a factory in 1945, to attempt to learn and then to formulate in a communicable form the skill of linking in the hosiery industry, knowledge which had hitherto been only implicit among the group of workers concerned.* 'One of the chief functions of Social Research', wrote Mace, 'is to translate this implicit knowledge into a medium which at least accelerates the rate at which experience may be handed on.'[77]

The importance of this special task of formulating social experience he again emphasized when he described some of the work of the Building Research Unit of the Medical Research Council of which he was the Honorary Director. 'This inquiry', he wrote, 'was essentially concerned with the formulation of opinion in its passage to action, and the treatment of the data was determined throughout by the actual course of events, in a social process which was only in part under control.'[77] The advantage of this approach to industrial research was, he maintained, that it led to a 'close integration of research with the realities of

* King, Pearl H. M., 'Task Perception and Interpersonal Relations in Industrial Training', Part I, *Human Relations*, 1, 1, pp. 121–30, 1947; and Part II, *Human Relations*, 3, 1, pp. 373–413, 1948.

the practical situation' and 'the practical testing of policies in the concrete situation to which these policies relate'. 'Conclusions, however tentative, can be "fed back" into the industrial situation for further trial.' Even though he is aware of the difficulty of getting any 'final conclusions' in industrial research, his formulation of this research technique of *progressive operational validation of results* marked an important advance in the *methodology of social investigation.*

This approach to industrial research makes it difficult for the psychologist to pass himself off as someone who knows all the answers. The psychological investigator becomes part of a team, and works alongside other workers, with other skills, who are also interested in investigating the same problem. I think that it was this conception of the role of the psychologist in industry that led Mace to agree to become a member of the Human Efficiency Panel of the Ministry of Works, to become the Honorary Director of the Building Research Unit of the Medical Research Council, and, later, to become a member of a team sent by the British Institute of Management under the auspices of the Anglo-American Productivity Council to study Education for Management in the United States.[85]

It was consistent with his involvement in these activities that Mace's idea of directing research was not that of just sitting in the professorial chair listening to the reports of his research workers, although he made many helpful comments when in this situation. In the course of the initial exploration of a new field of work,

or during the actual investigation, he was always prepared to visit the factory, building site, or technical college concerned, to obtain a first-hand picture of the field conditions. When his research workers needed the cooperation of certain authorities in order to obtain more data or to obtain permission to investigate a new situation, he was the perfect diplomat. As this diplomat he seemed able to blend a certain impression of stability, with a kind, fatherly interest in the current problem on the one hand, and the audacity of an explorer on the other.

Furthermore, if his research workers got into difficulties, he would take such steps as seemed appropriate to help them with their problem, however unusual these steps might appear to the more orthodox. A case in point, 'The Case of the Dead Cat', occurred when, together with Thelma Veness, I was interviewing workers on a bomb-damage repair job. Our task was to collect the opinions of building workers, foremen, and managers on the causes of difficulties in the building industry, and what suggestions they had for dealing with these, either nationally or in their own particular firm. But each worker that we interviewed could talk only about a dead cat on the neighbouring bombed site, and they frequently expressed the opinion that as we came from the 'Medical Research', as they called it, we should make their council remove it! Children, they said, were playing around it. It was a danger to health. When we inquired if the local council had been approached, we were informed that they had but had maintained that, as the cat was on a

privately-owned building site, they were not responsible. The owner of the site should remove it. It was soon clear to us that this was a test-out of our sincerity. They were asking us whether or not we were concerned for the common good or were we on a 'smash-and-grab raid'. We finally realized that until the dead cat was removed we would not be able to do any constructive work. It seemed, furthermore, that the local council would have to undertake this task. Mace quickly saw the importance of this problem in the total setting of the research project and its meaning in terms of group morale. He contacted the appropriate people to bring pressure to bear on the local council, explaining the problem to them. After these representations the local council did remove the corpse, to everyone's relief and satisfaction. The result was not only that the particular research could proceed, but there was a distinct improvement in the quality of the rapport that it was possible to establish with members of this firm. The whole incident seemed to me to be an 'off-centre drama', and many academic professors might well have failed to see its socio-dramatic qualities as a test-out of the validity of the research workers. That Mace was responsive to the implications of such an incident is in line with his concept of responsibility: 'It is in his susceptibilities to the pressures of surrounding expectations that a man's sense of responsibility effectively consists.'[62 75]

This capacity to respond to the pressures of surrounding expectations led Mace to try to approach a problem, not as an isolated fact, but as an aspect of the total

situation in which it occurred. This holistic approach to social and industrial problems is one that will be necessary for a long time in this field of work, where quantification and tidy experimental results are difficult to obtain without over-simplifying the original problem and removing it from the actual pressures that arise in the complex real situation. If he had been an anthropologist, I suspect we would have classified him as a supporter of the 'culture pattern theory', for it is within this conceptual frame of reference that many of his contributions to thought in this area, and especially his concern with the patterning of events, make sense.

It seems to me that it is the task of the good professor or director of research to enunciate in his own work a general frame of reference within which students of a wide diversity of interests can learn to develop their own specific skills. Few professors have the background knowledge, the skills, and the generosity to behave in this way. Alec Mace is one of the few.

WORDS AND DEEDS OF A SOCIAL PSYCHOLOGIST

BY THELMA VENESS

SOME of Alec Mace's earliest lectures to the Department of Psychology at Birkbeck were delivered at the top of Field House in Breams Buildings, EC4. He was then Dr Mace to his students: there was no Birkbeck Chair, and his week was divided between Bedford College (in Cambridge) and Birkbeck (in London), with London, contrary to custom, occupying the week-ends. And in those confused times some of the students who sat at his lectures were also acting as part-time fire watchers for the building. It was there that he gave a certain lecture one Sunday morning. Outside, there was the week-end quiet that only the City of London can produce. The lecture began with an exposition of the Hegelian dialectic. Thesis, antithesis, synthesis: the clash of opposites that engenders a new position. The remainder of that lecture was probably about body-mind theories: at that time he was giving fascinating and brilliant lectures on that subject. Yet it is the opening section of that lecture that remains so vivid to one who was in the audience; with place, person, and subject each sharply distinct yet indissolubly joined in that image. Why, when the dialectic has been encountered since, in many different contexts, should this be so lasting a memory image? The lecture was given, at Birkbeck, once only. What

subsequent reinforcement can the memory have received?

A recent re-reading of some of Mace's writings and, perhaps even more, reflection on his seventeen years as professor, have suggested the answer. That lecture was an exposition of what is always implicit in his thinking. It was a dialectician who chaired our staff meetings as well as our seminars; who would suddenly turn the discussion into a new direction by contributing a view different from, and sometimes apparently contradictory to, that which was in danger of being generally accepted, to the death of the discussion. 'But look here,' he would say; and then, if we were really lucky, one of those enchanting hypothetical examples of his would follow. From the juxtaposition of apparently incompatible ideas he would strike off a new flame. When, in *The Psychology of Study*, he makes the point that certain essayists have proclivities for certain modes of thought, it is not surprising that the example he gives is Chesterton, who – also – loved the paradox.

One of the practical applications of the dialectic in administrative affairs lies in the judicious use of compromise in resolving opposing interests. 'Compromise' is a somewhat dirty word in some quarters – not least in those where the dialectical process has been adopted and distorted for particular purposes and many of its original implications conveniently discarded. But, as Professor Mace gave us notice, as it were, in his inaugural lecture, democratic government is in large measure the resolution of conflicts of

interest by the delicate and skilled process of reaching a compromise, which is 'sometimes a genuine new alternative which no one had thought of prior to the process of negotiation'.[58] The Alumnus Society which he established owes its existence to just this kind of creative dialectical thinking on his part.

But a true Hegelian knows that the contemporary synthesis will in turn be opposed by a fresh antithesis, and new resolutions forged by a new generation of thinkers. He will not be tempted to think that the latest bright idea is the last word to be said for all time. He may, in consequence, remain 'uncommitted', since he knows that all our present commitments, however passionately held today, will take their place in the listed *isms* and schisms of the history books. When our concerns are academic, at least, non-commitment has important virtues. It allows one to see more of the game, for one thing, an advantage clearly appreciated by one who said, of the tendency of colleges to put psychology on the fourth floor, 'The attic, no doubt, is everyone's gloryhole; but it has the widest views.'[64] It permits one to become the Chairman of the Educational *and* the Industrial *and* the Social Sections of the British Psychological Society, as well as President of the parent society, and to have something original, and yet most pertinent, to say to each. Mace has frequently written, with obvious approval and enjoyment, of the essentially amateur status of certain great scientists and thinkers; men such as Erasmus, Darwin, and, nearer home, Galton and C. S. Myers. Alec Mace is perhaps one of the few people in our

world ridden with professionalism who would appreciate finding himself shining in this galaxy of Distinguished Amateurs: men who followed their interests and enthusiasms above all, however short-lived they may have been, men who never acted from, for example, the calculation of what was in their best interests in the light of contemporary fashions.

The refusal to choose (to choose once and for all, that is; for by adopting some all-embracing dogma one avoids the necessity of choosing on a multitude of separate occasions and distinct issues): the refusal to choose keeps open the possibility of taking the best features of all the choices. And while it is often profitable in science to select one 'line' and pursue it to the end, ultimately it must be linked again with others, this part of the programme being easier to follow if there have all the time been thinkers who remind us that a 'line' cannot be the whole story. Invited to unravel one important facet of human behaviour, the will to work, Mace takes this role: 'For no man ever *works* from a single motive,' he says. 'He does not work just because he must, *or* just because he should, *or* just because he wants to. When he works best he works because he wants to, *and* because he knows that in the last resort he must, *and* because all the time he feels the pressure of surrounding expectations.'[62] Some people avoid commitment because in the last resort a committed position is likely to be extremely boring. And Mace's department has undoubtedly benefited from his capacity to become bored; to indicate by eyes that wander to the clock that the horse one is flogging is

not only dead but is beginning to stink. (This capacity has possibly contributed to some of his interests within social psychology; notably his analysis of resistance to change,[86] treated throughout as an undesirable social phenomenon. And he has amassed data not about interests, but about changes of interest.) The vitality of the department he has created has come in no small measure from its ability to attract and hold the interests and loyalty of students able to appreciate the liberality of the educational aim and outlook steadfastly maintained by its Professor, and it is he who has defined a liberal education as 'one that secures the greatest areas of contact between the greatest number of different ways of life'.[84]

And so Alec Mace remains one of the few psychologists still able to take a synoptic view of psychology, and is therefore one of the teachers of vision he speaks of, both foveal and peripheral.[64] He has attacked specialism, as when he recommended that our newer universities should set up professorships in small-talk 'to keep alive an obsolescent art and to correct the serious menace of specialism'.[13] He has inveighed against the tedium of detail, as here:

> There is a strange, but I think significant, resemblance between the way in which the spirit of religion tends to become petrified and imprisoned in ritual and dogma, and the way in which the spirit of science is apt to be enslaved to methodology and technique. This is what happened to Galton's psychometric studies and to his lively exploration of human personality. The investigation of word-association was reduced by some of Galton's successors to a tedious laboratory procedure. Instruments were designed to measure association-times to

a thousandth of a second, and refined statistical techniques were developed for reaching 'significant' but uninteresting differences.[106]

Mace must surely number himself among the people he mentions in *The Psychology of Study* – 'those whose enthusiasm for the wood provokes impatience with the trees'[18] (although it must be said that since he wrote that he has in his spare time become a specialist – in flowering shrubs). 'A microscope', he says in the same book, 'is an inadequate instrument with which to find your way about a town.'[18] And if his global view occasionally led him into the illusion that all towns were much of a muchness – that Butler, McDougall, and Freud all said roughly the same thing except for the embroidery[94] – nevertheless it remains true that, as he says in *Sibylla or the Revival of Prophecy*, 'Knowledge grows not like a crystal by minute accretions, but like a work of art, from outline down to detail guided by inspiration – which, in science, is speculation.'[13]

Mace's contributions to social psychology have been diverse, but a subject which has recurrently intrigued him is organization: both principles of organization and methods of organization in practical affairs, on which he writes on almost a cosmic scale in *Sibylla*, for example. The main point he makes in discussions of method is a thoroughly dialectical one. Science, he says, is produced by the cooperation that comes from 'community of interests and diversity of talents'.[33] Again, 'No one person can combine all the intellectual virtues, but a department can. A well-balanced depart-

ment can contain its quota of slightly unbalanced minds.'[64] His most substantial theoretical contribution to the analysis of organizational structures and dynamics is the paper called 'Hierarchical Organization' of 1934. Starting from the observation that many groups and societies tend towards hierarchical structure, he goes on to consider the nature of all the ties between individuals that are the elements of such structures. His analysis constitutes a strong rebuttal of McDougall's position in this matter, and of any position that derives social relations from individual propensities. To some extent, social phenomena are analysable in terms of individuals, but the qualities of individuals relative to each other, rather than their needs or reactive tendencies. Thus leadership is derived from differences in ability and experience. The growth of leadership tendencies, however, is dependent on the existence of appropriate situations. 'The logic of the situation', as Mary Parker Follett would have put it (in undoubtedly endorsing strongly Mace's analysis), would be a primary element in the explanation. Another constituent is the habit of cooperation, which is dependent on common ends. So, hierarchical organization is finally defined as 'community of ends with diversity of talents'. The whole question of the nature and growth of the most elementary social ties has recently been revived in social psychology, by Thibaut and Kelley for example, whose analysis, while couched in the language of the 1950s, of pay-off matrices and the like, has a certain similarity to Mace's account of the intensification of one person's reactive

tendencies resulting from appropriate outcomes in the other.* In conclusion, Mace states his general position relevant to the theory of man in society, in the following words:

> It is doubtful whether, at any point in man's development or history, the individual can properly be described as a member of an undifferentiated herd, but the further he departs from this and the more he comes to 'occupy a position' in the network of interlacing hierarchies, the less adequate merely general psychological principles become for the interpretation of his behaviour and of his inner mental life. At the levels with which the sociologist is in the main concerned with him, all his reactions are the expression of the attitudes and ties which this position entails. The 'struggle for existence' has become 'the pursuit of a career' – a more or less regularized progression through hierarchical ranks, the successive steps of which are conditioned by seniority, experience, or the satisfaction of semi-automatic tests. Pugnacity has become litigation, or the operation of 'machinery of conciliation'. The instinct of escape is no longer evoked by the perils of the jungle, but by threatened loss of status. The basic social processes of suggestion, sympathy, and imitation have ceased to be random waves of herd contagion spreading in concentric rings from an arbitrary centre of initiation; they now descend downwards and outwards, through defined hierarchical channels. So far as the individual is subject to suggestion from his leaders and coordinates in a specified institution, so far has he become contra-suggestible to corresponding ranks in a rival group. Imitation likewise has become a canalized social function. The fashion of wearing a moustache may descend through the ranks of one hierarchy whilst simultaneously and with total absence of interference the fashion of removing it is descending through another.[33]

We may here be reminded of Richard Peters's position

* Thibaut and Kelley, *The Social Psychology of Groups*, 1959.

in *The Concept of Motivation*, that man is a rule-following animal. Man is a rule-following animal indeed and not a driven one; and the rules he follows are defined by the position he comes to occupy in the network of interlacing hierarchies.

One thing that emerges from this paper is that Alec Mace is no superficial democrat; no glib believer in the basic equality of all men. This analysis of social organization begins from the following categorical statement: 'Certain qualities of mind and character, in respect of which individuals differ, provide the ultimate basis for a hierarchical order in society, whilst this order in turn determines further individual differences in mind and character.'[33] He was even prompted to say, in his book of prophecy, 'Nor can I bring myself to believe that there ever was or is ever likely to be a democracy in any important sense.'[13] Yet this position somehow enhances the mode in which he *does* believe in democracy; and that there are very important ways in which he does believe in it has been evident from his practice as head of a department. This and his inaugural lecture, 'Democracy as a Problem in Social Psychology', suggest that his position is something like this: given that people are not equal to start with, how can they be made to behave as if they were, where it is desirable that they should? And this is desirable in very important aspects of life: for example, it is always important to ascertain the opinions of the governed, since, while experts must decide means, it is the general public which must define the ends. In talents, men are diverse; in motives,

they are very much alike, and so we must have government by representative sample as a 'constitutional defence against the dangers of government by those who have the itch to govern'.[58] But the skills of democracy must be learned, and they can best be learned by practice throughout life; in the family, in the school, from the time that the earliest conflicts are encountered, the earliest compromises needed.

Now, this was a fine promise of wise administration from a professor taking up his Chair: but of course Professor Mace is a democratic leader from inclination and not from precept. Fundamental democratic attitudes showed themselves, also, in the choice of subject-matter of many of his writings, and in his prescriptions about subject-matter in psychology. The psychologist is recommended to study the problems that arise in ordinary life: 'The world of natural human reactions must be his main laboratory.'[58] Mace's writings are as likely to be illustrated by letters from the Press as by references to experimental literature. 'Research', he says, 'begins in the board-room out of questions raised by practical men. The Ivory Tower is at the far end of the Market Square.'[122] He believes in ordinary human goodness, in 'a natural sense of responsibility, a natural sense of obligation'.[62] He writes often of ordinary human affairs – the family, education. For his students, he writes not a textbook of psychology, but a text that will help them to study the textbooks – *The Psychology of Study*. And while this book to a considerable degree makes use of sound scientific findings, the student may cherish most those pieces of wisdom

that come from the heart of the man: for example, his adumbration of the 'fallacy of the misplaced average', designed to encourage the faint-hearted. We should not conclude too easily, he gently insists, that we lack ability, as it takes longer to obtain proof of lack of ability than of its presence, since, 'If we have *once* performed a task, that is sufficient proof that we can do it. A single failure, on the other hand, is not sufficient proof that we cannot.'[18] Mace's many pronouncements on education, examination systems, and the like were usually designed to shock, but it must be recognized that, whenever he had a chance, he did allow candidates to take the examination paper home. Such a method of examining is more compatible than the traditional one with the type of teaching he advocates: 'The most successful way yet discovered of teaching people to think is for the teacher himself to think aloud, and hope that his pupils will catch the knack.'[13]

A democratic attitude is recommended to the psychologist not only in his choice of matter but also in his manner of writing. 'Some of the more obstinate problems of psychological terminology would be solved if only psychologists would devote some of their time to writing books for children', he wrote.* He frequently asks us to write the sort of psychology that every man could understand. But in his own writing, he goes much farther than clarity and simplicity, in fact, and always writes in prose that must

* *The Relation of Psycho-analysis to 'General' Psychology* (unpublished manuscript).

edify by the very delight it gives, by its felicity in choice of word and sense of form, and by the humour that cannot for long be kept off the page. And here, too, he preached what he invariably practises: 'Perhaps in the last of all wars to end war, victory will fall to the side which first makes its enemy laugh. The power of a sense of humour, at any rate, is a terrible weapon in the negotiation of peace.'[13]

A good democrat, a good psychologist, a good teacher must above all be life-affirming. Those who have worked closely with him will be looking back now and appreciating, among other things, particular examples of life-affirmation from which they have profited; will see, for example, how their papers and theses have benefited from his advice to rewrite in a more positive way the apologies and denigrations that are apt to weight the work of a diffident beginner. But, at a higher level, here is a glorious piece of life-affirmation from *The Idea of a Faculty*:

> Freud has taught us that crude and primitive desires persist in the unconscious of even the most refined, that below our cultured skins there are unmistakable traces of the Dyak. When we got over our surprise we found the idea not entirely unflattering.[64]

With a typical Macean use of irony softened by geniality (and an equally typical use of *litotes*), Man is put back on top again.

C. A. Mace, as a social psychologist thinking social psychological thoughts in the thirties and early forties, inevitably wrote about leadership. 'A leader', he said in

1934, 'becomes the object of "persistent attitudes".'[33] And he went on to specify 'confidence, affection, and respect. . .'. This is a view that his many grateful and loving students, after his seventeen years as Professor of Psychology at Birkbeck, will endorse without reservation.

C. A. MACE'S CONTRIBUTION TO THE PHILOSOPHY OF MIND

BY R. S. PETERS

THIS is indeed a ridiculous position for a philosopher to find himself in – to have to talk about his teacher's philosophy in his presence when he is unable to reply. It must be particularly frustrating for Alec Mace. For he was always at his best when hemmed in by a pack of eager and often aggressive disputants, who were trying to pin him down to saying that people were constructions out of sense-data or some such preposterous view. 'But do sense-data or images exist?' he would ask. 'And what could be the sense of "exist" in such a question?' And so he got to work. As he put the matter himself: 'Hence the appropriate reaction to a philosophical remark is not to say "How true" or to say "What nonsense" but to say "Tell me more".'[66] And that is what he said, year after year, with great patience and acuteness, to a group of us who met with him every week to discuss problems in the philosophy of mind. Several quite well-known people came to his group at various times – John Passmore, Bill O'Neill, John Thompson, John Cohen, John Maze, Fred Smith, J. O. Wisdom, to mention only a few of those who are not on the Birkbeck permanent staff.

As a teacher Alec Mace was not only clear-headed, patient, and constructive; he also had that unostentatious enthusiasm for his subject which is so much

more genuine and enduring than some of the mannerisms and brands of lifemanship that emanate from other figures in twentieth-century philosophy. If only he could get clear about how to answer the question 'What is x trying to do?' he would say. Or alternatively: 'What is it to think about thinking? I really think that images are about the most puzzling phenomena in the whole universe!' His brow would pucker and a far-away look would come into his eyes as he gazed at the ceiling in the grip of such fascinating problems – rather like Thomas Hobbes goggling at the wonder of apparition. Not that he was unaffected by Cambridge. Indeed, his whole way of thought obviously owed much to G. E. Moore and he used to take a great delight in concocting fantastic examples to make his points. 'Supposing one looked up one morning and there was a typewriter hammering out propositions in the sky. . . .' or 'Supposing one was playing billiards and the balls started making for the pockets like rabbits towards their burrows. . . '. He also shared the Cambridge set of values in which 'good' loomed larger than tiresome words like 'ought' and 'wrong'. I often think that he recoiled with the horror of a natural gentleman with thoroughly nice feelings from the modern talk of norms and man being a rule-following animal. Principles were things that might have to be formulated in order to clarify an awkward situation at staff meeting. It was almost indecent to regard them as written into the ordinary fabric of human judgement and behaviour.

The point about Alec Mace is that he cares about

truth above all things. He was thus not a bit concerned to score points or to sprawl his personality over a seminar room. Neither was he much influenced by fashions. Like Raymond Chandler's hero, he has always been a quiet man working at his job. He never tired of trying to see what lay behind the jargon of pretentious theories and of noting that many classical theories were not refuted; they simply became outmoded. 'Nursery language, please,' he used to say when confronted with a particularly pompous piece of pseudoscientific jargon. (He later modified this to the claim that anything worth saying in psychology could be said in language intelligible to a child of eleven; I never discovered what led to this mild concession.) And his writing, like his teaching, was a model of clarity, courtesy, and elegance.

The positive aspect of Mace's concern for truth is his constructiveness, his attempt to reconcile conflicting view-points and to see what they have in common. This search for a harmony that lies beneath the appearances is, I suppose, Mace's most characteristic contribution to the philosophy of mind; it also explains what look like the most glaring anomalies in his thought. And if Mace has often seemed like a patient marriage-guidance counsellor trying to convince a warring couple that in spite of all appearances to the contrary, in spite of plates flying across the kitchen, continual infidelity, and publicly delivered insults, they still love each other, there is a great need for his constructive spirit. In English philosophy the prevailing fashion is to be extremely critical of, even

rude about, the efforts of others. Yet it is easy enough to see where others go wrong; it is often more difficult and more worth while to see where they may be right. As Mace himself so charmingly puts it:

> The philosopher needs time to remove the misunderstandings that arise from this opening clause. Elucidation follows the zig-zag course of an Hegelian progression: Thesis, Antithesis, and, perhaps, a Synthesis. But by saying this no doubt someone has been misled.[66]

This constructiveness in approach is extremely obvious in the three main spheres of Mace's contribution to the philosophy of mind – those of his analytic Behaviourism, his homeostasis, and his ethical naturalism. I propose to deal with each of these contributions in turn and to show how widespread his attempts at reconciliation have been.

Consider first the most glaring anomaly in Mace's thought. He has often described himself as an analytic Behaviourist; yet he has taken introspection more seriously and has had more to say about it than any other living philosopher.[68] How has this come about? Let us start with his so-called Behaviourism. Like most modern philosophers Mace has been much influenced by the verificationist movement and by the Wittgenstein thesis that the meaning of mental concepts is not to be brought out by searching for inner states, entities, or processes to which such terms might refer, but by making explicit the public criteria of behaviour with which they are linked. Behaviourism therefore appealed to him as a doctrine because of its stress on public testability, though Mace took a certain sar-

donic delight in pointing out whenever possible that McDougall was just about the first person to lay out systematically the publicly observable hallmarks of purposive behaviour. But Behaviourism never appealed to him much as a methodological doctrine, as will be seen in a moment. It was the possibilities which it represented for philosophical analysis that excited him. He liked to suggest, I think in earnest, that thinking was a special form of doing; and generations of missionaries and cannibals were enlisted to substantiate what many would regard as a somewhat fanciful analogy.[112] He also carried on a heavy flirtation with the offshoot of the Unity of Science movement known as Physicalism.[40] He persisted for a long time with the view that the analysis of mental concepts is to be found either in behaviour or in dispositions to behave. Statements about perceiving, he suggested, could be analysed into statements about 'differential responses', statements about liking and disliking into statements about 'adient' and 'abient' responses.[68] I have a suspicion that he now thinks that such attempts at analysis were almost hopeless; but I'm not sure. I never could glean quite what he made of language; for he would be the first to see through the silly trick of extending the term 'behaviour' to cover it. For he used to say that one can use words to a certain extent as one likes; but certain usages are singularly unilluminating, as for instance the definition of 'work' as 'moving lumps of matter about'. The definition of language as 'verbal behaviour' would surely fall in the typically Macean category of 'the unilluminating'.

But on such matters I am not clear what Mace thought and what he now thinks. And if he has changed his mind he is not the sort of man who would regard it as important to make a public recantation or to draw people's attention to what he thought or said at any particular time.

If Mace ever wished to withdraw he would, of course, always have his stress on introspection to fall back on, which was his version of the doctrine of inner sense and can be traced back through Stout to John Locke. How can this characteristic emphasis be squared with his Behaviourism? Roughly speaking Mace's view has always been that the Behaviourists were somewhat limited in their view of what constituted 'data'. Though he agreed with the general thesis that there is no separate entity called 'the mind' and no special type of process that might be called 'mental', he always insisted that psychology differed from other biological sciences in that we have a special way of observing our own bodily states, dispositions, and acts, which rooks and rabbits do not share. This entailed both that mental concepts like 'perceiving' and 'striving' had to be unpacked in terms of introspective as well as overtly observable 'data' and that psychologists should not deprive themselves of this source of evidence in testing hypotheses. For there is no reason why different observers should not more or less agree on what they observe in this special way about themselves.[60] To quote him:

> Introspection is a special case of the method of making use of the data of more than one sense. I observe that someone

other than myself sees a thing, likes the look of it, and wishes to possess it, in the main by visually observing an extremely complex pattern of behaviour. I observe that I myself see it, that I like the look of it, and I desire to possess it by observing my own dispositions and inclinations. I observe these latter things by directing my attention to the felt tensions set up by these dispositions.[68]

This stress on introspective data goes right back to an early paper which Mace wrote on Hume's view of self-identity[50] in which he pointed out what a sorry show Hume made of looking into himself to find the impressions from which the idea of self was derived. Here of course Mace stands in the James/Stout tradition of the bodily self. Indeed, he often quoted with relish James's location of the sensations connected with the spiritual self in cephalic movements and in the quivering of the epiglottis and respiratory tract. But Mace gave this strange doctrine a characteristic twist. He noted that

> The awareness of a material thing which is obtained through a visual sensation, *v* – whatever else it may require – at least depends in part upon some other datum, say a tactile datum, *t*, which is or at some time has been so presented that we can judge that the thing to which *v* 'belongs' is identical with that to which *t* 'belongs'. Now one of the peculiarities of the awareness of the self obtained through awareness of our own acts is that the relevant somatic data are not presented in suitable relations to other data for such judgements to be made. We do not for example apprehend our 'cerebral adjustments' both by somatic experiences and by touch or vision.[50]

As knowledge of self given through our awareness of

mental acts is derived from a single modality of sense it has a rather peculiar diaphanous quality to it.

This is an intriguing point. Equally intriguing is Mace's frequent noting of the fact that although historically the distinction between primary and secondary qualities rested on criteria connected with peculiarities of the mathematical sciences, it was equally important to recognize that the primary qualities are in fact those which can be perceived by means of more than one sense. At times I have heard Mace suggest that the distinction between the mental and the physical is a particular case of the more general distinction between primary and secondary qualities. Smells, on this view, would be candidates for sitting at the right hand of the spiritual self. This is a typical Macean idea – an imaginative flash, a streak of impishness – but is there a serious far-reaching thesis underlying it? He was throwing off these fascinating suggestions when the Chair of Psychology was thrust upon him. After that the rest was not exactly silence; but certainly the training of minds and the patient attempt to convince rather brash behaviouristically-minded students that there was a perfectly respectable sense of 'mind' in which they could be said to have minds, left him too little time to pursue such fundamental questions in the philosophy of mind. Philosophers, whose estimate of Mace's contribution to the philosophy of mind was made clear by his election to the Presidency of the Aristotelian Society in 1948, have always regarded his absorption in the more mundane matters of running a Psychology Department as

rather a pity. But in such matters of personal vocation who is to judge, save the man himself, what it is right for a man to do?

Mace, then, claimed that in a certain rather sophisticated sense he was a Behaviourist, though his stress on introspective evidence made his claim seem a trifle quaint. But he did not, as it were, play the benign house-agent and give the introspectionists an unlimited order to view the inner aspects of acts, dispositions, and bodily states without supervision. On the contrary, he insisted on examining their credentials and often made rather whimsical remarks about their claims to be trained observers. He referred to the

> pardonable hocus pocus concerning experimental procedures, the controlled conditions of quiet rooms, etc. Titchener was writing at a time when introspective psychologists felt it important to establish their scientific status. But whilst since that time experimental psychology has justified itself in quite a variety of ways, it has not established a single introspective observation in a laboratory which was not equally apparent to those who have carried out introspection in a psycho-analyst's consulting-room or for that matter in the homely arm-chair.[76]

And Mace thinks that this is so because of his conviction that 'the difficulties encountered in introspection reside not so much in observing the facts as in knowing how to describe them'.[76] The classical problems of abstract ideas, the nature and status of mental images, and the problem of 'mental acts' derive from this fundamental difficulty.

And from this we begin to get some inkling of what happened on the occasion of Titchener's blinding revelation when he read James Mill. 'I can test this for myself', he said. Of course

he could. He, too, could guess what words in the English language mean. He, too, could play the analytic game. . . . There is, accordingly, a prima facie case for the hypothesis: The problems of introspection are in part at least problems of analysis.[76]

Mace, of course, was not original in this view. For was he not one of the few who stayed the course with Wittgenstein without incurring his charismatic displeasure? And did not Wittgenstein proclaim:

> The confusion and barrenness of psychology is not to be explained by calling it a 'young science'; its state is not comparable with that of physics, for instance, in its beginnings . . . for in psychology there are experimental methods and *conceptual confusion.**

Mace's importance was in the fact that, unlike Wittgenstein and some of his followers, he knew a lot of psychology and could substantiate this general thesis about it with a wealth of examples drawn from its history. About ten years ago I tried to persuade Mace to write a modern equivalent of Stout's *Analytical Psychology* – a psychologist's charting of the 'logical geography' mapped from rather a remote vantage point by Ryle in his *Concept of Mind*. He evinced interest but muttered about the priority of his commitment to publish his Tarner Lectures on Teleological Causation. So I started nagging him about those and have been doing so on and off ever since. As a matter of fact there was a period, about 1948 I should say, when he actually did 'set himself' in the direction of publication. He revised and read one or two of them as lectures. But they somehow got wafted out of sight in the elevation of the department to the fourth floor in the West.

* L. Wittgenstein, *Philosophical Investigations*, Blackwell, Oxford, 1953, p. 232.

R. S. Peters

Mention of the Tarner Lectures brings me to the second main sphere of Mace's contribution to the philosophy of mind – that of purpose, goal-directedness, motivation, homeostasis, and all the other rather gruesome members of that family that are huddled together higgledy-piggledy in the psychologist's cupboard. I am not altogether clear what Mace's views on these matters now are. But he definitely has strong views. For when, a few years ago, I submitted my manuscript of *The Concept of Motivation* to him for comment he went off like a bomb. Page after page of excited and often outraged comment flowed from his feverish pen. This led me to remark in my preface that his detailed and constructive comments convinced me that he should have written the book himself. Perhaps he had. The point is that we don't know; for his lectures to us on the subject of teleological causation never got much beyond a preliminary limbering-up operation on 'introspective evidence' and 'felt tendencies'. I suspect, however, that he reacted so strongly because I could not accept what I have called his marriage guidance in this field – his attempt to make concepts like those of 'purpose', 'want', and 'need' snuggle down peacefully and respectably in the arms of homeostasis. For in this field, too, Mace has always been a reconciler. Just as he wanted to hang on to the objective emphasis of Behaviourism, while at the same time insisting that psychology was different from biology, in that human beings can introspect and by so doing enrich the meaning of mental concepts and obtain a special kind

of evidence in relation to their own acts and dispositions, so also in the sphere of teleology Mace has, as far back as his paper 'Mechanical and Teleological Causation' in 1935,[37] insisted on defining notions like 'purpose' in terms of objective criteria and underwriting them with some kind of biological or physiological theory. A process is teleological or purposive, he claimed, if there is an end-state, E, whose absence is a condition of persistent direct activity until it is attained or restored. Purposive behaviour, at the human level, which is described or explained in terms of a person's wants or needs, is a particular case of a more general type of behaviour in which the organism in question is conscious of and can plan means to the ends towards which its behaviour tends. Mace therefore extended the concept of homeostasis, which has a reasonably precise and testable application at the level of bodily functioning, to cover all forms of behaviour. Spiritual aspirations as well as sweating are to be explained in fundamentally the same kind of way. Mace was brought up on Stout's conative tendencies and McDougall's instincts; he tried to underpin this concept of purpose with a homeostatic principle which he delighted to trace back from Cannon to Spinoza.[70]

This approach to human behaviour goes against modern trends in the philosophy of mind which, by concentrating on the analysis of concepts like 'intention', 'motive', 'knowledge', 'insight', etc., and above all on man's peculiarities as a rule-following and language-using animal, resist any attempt to describe

or explain the full range of his behaviour in terms drawn from physiology or biology. In my *Concept of Motivation* I launched a sustained polemic against that yearning for over-all explanations which involve such conceptual extensions from the ground-floor upwards. (I have always thought that there was something rather distinctive about the fourth floor!) In so doing I may well have been trying to kill the father at whose knee I learnt just about all the psychology which I did not pick up by reading the stuff for myself. Mace would smile and remark characteristically: 'Lay off, Hypatia. Why must philosophy always play the part of psychology's nagging wife?' Fair enough. But why must it instead be cast in the role of the down-to-earth father who thinks that his son, when in search of a respectable union, should set so much store by breathing, sweating, and bowel movements? Is the Wisdom of the Body really much like the Wisdom of the Mind?

Typically enough Mace himself was not unsympathetic to the wisdom of the mind as revealed in morals, religion, and man's concern for values that pass beyond the level of the satisfaction of the 'necessary appetites'. Indeed, we have it from his own lips that a protracted argument over the objectivity of 'good' was one of the main bonds that held him and his wife together in the early years of their acquaintanceship. But, of course, he always tried to reconcile such rule-ridden activities and spiritual aspirations with man's physiological workings and biological tendencies. A man's good is that which would give satisfaction to the needs

of any individual on the whole and in the long run. The crucial, norm-ridden concept of 'need' is interpreted in terms of his ubiquitous homeo-stasis and the whole range of ethical concepts (even those drawn from social ethics such as 'the common good') is encompassed in a somewhat emaciated equilibrium. 'Homeostasis, Needs and Values'[94] represents, as it were, the climax of Mace's lifelong work at reconciliation, his homeostatic vision. It reveals in a majestic way his urbane audacity. For though there may be many psychologists still who would feel happy about passing from homeostasis to human behaviour, there must be very few philosophers who would wittingly ignore the age-old criticisms of naturalism in ethics and the modern stress on the logical gulf between nature and convention.

How is it that Mace can sustain such an unclouded vision of man as part of nature, striving at many different levels to persist in his own being? How can he be unmoved by the vision of man striving ceaselessly by artifice, convention, and institution to perpetuate the thin brittle crust of civilization? Because, I would suggest, he is at heart a metaphysician. But he is not, like Hobbes, a metaphysician of movement to whom life was but a motion of limbs, social life a race, and for whom happiness consisted always in proceeding. Mace is more like Spinoza – a metaphysician of equilibrium. Beneath the appearances of organisms and people, beneath the aspirations and institutions of man he always sees at work a tendency towards stabilization and harmony. For him this

principle, like the pleasure principle for Bentham, seems both an explanation of what men in fact do and a justification of what they ought to do. In his own thought and in his work with people he has always fastened on and sought to ally himself with this tendency which has not only an overt observable aspect but also a felt inner side. Indeed I should say that he really understands from the inside what Spinoza meant, which showed such great psychological insight, when he said:

> Blessedness is not the reward of right living; it is the right living itself. Nor do we delight in blessedness because we restrain our desires. On the contrary it is because we delight in it that we restrain them.

And that is how I always picture Alec Mace, sitting at peace in his arm-chair trying to reconcile ideas, and to reconcile conflicts between people who were often petty-minded, neurotic, and concerned with their own advantage. His attempts at reconciliation were never just manoeuvres to paper the cracks. He always tried to arrive at the underlying issues and to get people to see what was just. And I am sure that, like Plato, he sees justice as some kind of proportionate arrangement. He believes almost passionately in the rationality of man and is convinced, again like Spinoza, that, 'In so far as men live under the guidance of reason, thus far only they always necessarily agree in nature.' I should say that he is about the most fair-minded man that it has ever been my privilege to meet as well as one of the most shrewd and humane. But

these qualities, I feel sure, are his because of his profound convictions about the nature of man and society.

A good thing about his retirement is that it will at last give him time to work out in more detail the conclusions he has reached in all these different realms of thought, so that others may at last be able to share them. And if we don't always agree with what he says we will at least be able to fall back on his own words:

> It is characteristic of the greater amiability of contemporary philosophical discussion that philosophers are less disposed than hitherto to accuse each other of being *utterly*, if not culpably mistaken. It is in fact almost as difficult to be *utterly* mistaken as it is to be *absolutely* right. A philosopher nowadays can say almost anything he likes, but – and this is the snag – almost anything he says will be challenged as 'misleading'.[66]

THE WRITING AND THOUGHT OF C. A. MACE

BY S. G. LEE

'THE other day I planted a rare shrub in a corner of my garden because an expert had told me that it would never grow outside in England. Is it helpful to explain my action as "a need to garden"? I doubt it.'

This is pure Mace. It comes to my mind from some otherwise long-forgotten seminar and brings with it an extraordinarily vivid subjective image of the plant in question – frail but exotic, rather like a cross between a japonica and an orchid. And I find, as I begin to review some of the aspects of the psychology of C. A. Mace, that it is these visual images that persistently intrude. Rabbits; a six o'clock and firmly anti-reductionist train in Euston Station, bound for the north; savages called A and B; missionaries – in my mind all rather hearty rowing blues inadequately provided with a small boat and a superfluity of cannibals; worms (being swallowed by the more venal of McDougall's subjects or, alternatively, having the bassoon played to them by Leonard Darwin at his father's request) and indeed a whole separate gallery of objects, probable and improbable, animate and inanimate, each making an essential simple distinction and cutting through complexities of psychological discussion. These examples used by Mace are invariably

apt, vivid, striking, and, above all, memorable. Here he is like William James, and the two are also alike in their avoidance of jargon, the purity and balance of their prose, and, in many ways, their attitudes to their fellow human beings.

It is tempting to push the comparison farther, but I find this unsatisfactory for two reasons – Alec Mace is unique, and anyone who has known him personally must find it difficult to distinguish between his formal and informal statements in psychology – both are part of 'C. A. M.' and both seem equally important. Nevertheless, as I read through the published works of Alec Mace I find myself repeatedly reminded of the work of another distinguished Norwich man – of 300 years ago – Sir Thomas Browne. In the latter's *Observations on Grafting*,* after carefully giving the rules 'esteemed most successful', Browne continues:

> Now, though these rules be considerable in the usual and practised course of insitions, yet were it but reasonable for searching spirits to urge the operations of nature by conjoining plants of very different natures . . . and so render them considerable beyond their known and trite employments.

Admittedly Mace is concerned with the nature of his own motive for a similar act, cited above, and here we see the modern psychologist contrasted with the general practitioner of the seventeenth century, but the men are essentially similar in original curiosity.

Again, on 'belief', we have Sir Thomas:

* *Observations on Grafting: Collected Works*, vol. III, John Grant, Edinburgh, 1912.

I am as it were sure, and do believe without all doubt, that there is such a City as *Constantinople*; yet for me to take my oath thereon were a kind of Perjury, because I hold no infallible warrant from my own sense to confirm me in the certainty thereof.*

And, speaking of telepathy, Mace:

In principle, the evidence may be such that an 'incredible' occurrence may have to be believed; and anyone who refuses to accept this evidence, whether he be scientist or not, will thereby remove himself from court to enjoy the unenviable reputation for caution which we accord to those who choose to question the historical existence of Napoleon.[41]

But where Sir Thomas Browne could happily rely on the evidence of his 'own sense', Mace, prepared to examine any evidence before him with a remarkably open mind, is forced by the inherent doubtfulness of all sense-data to some very rigorous thinking on the topic of 'belief';[17] for example:

That the important difference between veridical perception and belief lies in the fact that when p is perceived to be q there is involved some participant which is both p and q; whereas in the belief that p is q there is only involved some participant which is p and some participant which is q.

These are, however, relatively superficial parallels. It is in broader aspects of their thinking that these two Englishmen are most alike. Each has a wide range of concern: Sir Thomas from dreams to sneezing, the *Hydriotaphia*, *Pseudodoxia*, and *Religio Medici*; Alec Mace from homeostasis to incentives, *Sibylla*, *The Principles of Logic*, and *The Human Problems of the Building Industry*. Mace is always prepared to bring a critical and keen

* *Religio Medici* (part 1, section 59): *Collected Works*, vol. 1.

intelligence to bear on the problems of man in everyday life, and he does not disdain the market place where most people behave most of the time. In his work on incentives,[36 61 62 63 74] *The Psychology of Study*,[18] and 'The Distribution of Information',[38] one is always aware that he is intensely interested in the practical difficulties of the human condition, and his findings and statements, though often highly individual (he has a tendency to trail an iconoclastic coat; for example: 'Much is lost to the reader who maps out a plan of reading *and keeps to it* [Mace's italics]'), are readily understandable by the layman. In fact he lives up to his own appraisal of the communicability of psychology as few have done – psychology which in his view apparently grows ever more difficult (see Richard Peters, page 70, and Rex Knight, page 25)!

But not only are Alec Mace's lectures and papers expressed simply. He is master of a beautifully lucid and balanced prose-style, reminiscent of William James, but with the occasional combination of elaboration and force that is to be found in Browne:

> Perfect rationality is a myth. Crass stupidity and fanatical prejudice are stark realities. But neither is an insuperable barrier to human progress. Stupidity yields to the pressure of long-continued education. Fanaticism is showy but in its purest forms is rarely productive of long-term effects. The most powerful obstructions to the amelioration of the lot of mankind are those that arise from the subtler combinations of reason and emotion.[64]

Sir Thomas Browne, in that of his work which is important to posterity, was an amateur. Mace is an

amateur psychologist – an English amateur psychologist. Ordinarily this statement would be regarded as horrid vilification of a professorial professional, but I use the word deliberately in the sense in which Mace used it of such magnificently English amateurs as Erasmus and Charles Darwin, Francis Galton and C. S. Myers. All were eminent, fertile, and rigorous thinkers, efficient and humane, and this last attribute is one of Alec Mace's own most special characteristics, which emerges clearly from all the tributes of this book. To reiterate: Mace is an amateur – an amateur who could write the varied papers included in the bibliography of his work, and who could, with a genuinely 'playful' mind, bring the concepts derived from the idea of a 'natural' golf-swing to bear on problems of human industrial performance. Here I have a sneaking suspicion that the caddy's remark on G. F. Stout[55]

> Even his caddy, who had reluctantly to report that the professor would never be a very distinguished golfer, felt constrained to add: 'But mind you, in conversation he's a rare intelligent wee mon.'

may have applied, equally, to Alec Mace, and that the whole of his work in occupational psychology may have been a displacement activity in lieu of a low handicap at golf!

The tradition of British empiricism in science appeals to Mace and in the initial stages of any investigation he is apt to prefer 'hunches' (with the concomitant freedom to follow where the hunches and their results lead) to the more dignified 'hypotheses'. But theory is

necessary: 'Hypothesis without fact is empty, but fact without hypothesis is blind.'[68] Mace could only approve Sir Thomas Browne's approach to national stereotypes in his essay 'Of the Jews':

> Thus therefore, although we concede that many opinions are true which hold some conformity unto this, yet in assenting hereto, many difficulties must arise; it being a dangerous point to annex a constant property unto any Nation, and much more this unto the Jew; since this quality is not verifiable by observation; since the grounds are feeble that should establish it; and lastly, since if all were true, yet are the reasons alleadged for it, of no sufficiency to maintain it.*

His own attitude is essentially the same[54] but here he shows considerable originality in offering a modification of the 'grain of truth' theory and showing that the reputation upon which a stereotype depends may be 'well earned' *in a particular social context*. 'Well earned', that is, from the point of view of the holder of the stereotype and, as always, he is aware of the pertinence of the attitudes underlying overt behaviour:

> But where they [stereotypes] are inadequate, the fault resides not so much in the stereotype itself as in the persistent attitude through which it has been formed and by which it is sustained. The remedy lies not in any direct attempt to alter its intellectual content, but in effecting an appropriate change in the source of motivation.

In this discussion of one of 'the subtler combinations of reason and emotion', Mace, unlike many writers who pin their faith to the demonstration of the falsity

* 'Of the Jews', *Pseudodoxia Epidemica*, The Fourth Book, Chapter 10: *Collected Works*, vol. II.

of the stereotype, sees clearly that, for practical purposes, a more complex approach is necessary.

In another paper, 'Hierarchical Organization',[33] we find again the emphasis upon both situation and individual. In dispensing with the 'instincts' of leadership and submission for the explanation of hierarchies, Mace points out, with pertinent examples, how, while the separate abilities and motives of individuals must be important in the explanation of such social structures (indeed the structures depend for their very existence upon persistent attitudes in individuals), the structures themselves must influence the behaviour of each member. This is a salutary and very clear warning which could have been heeded in the succeeding years by many one-sided sociologists and psychologists, to the profit of both disciplines.

Alec Mace has never concerned himself with being a fashionable psychologist. He is as likely to question the ideas of cybernetics as of traditional dualism, and this enables him to look, without noticeably blenching, at the full implications of different ways of thought:

> The conception of an immaterial substance has acquired through history intense emotional significance. If then we came to the conclusion that material things are the only things that exist, shock, to those who felt it, would be followed by emotional adjustment. 'If matter is all there is,' they would say, 'what wonderful stuff it is!' And why not, indeed? If material things can be literally beautiful, why should not the behaviour of material things, and dispositions to behaviour, be literally good? [68]

However, he is no mere iconoclast. He believes in the value of psychology to man. Here he is essentially

optimistic. From *Sibylla* onwards we find him stressing the possible beneficent uses of his subject. He has little belief in the Original Sin of laymen – or psychologists – though the last paragraph of *Sibylla* is cautionary. With an appeal for humility and care by psychologists he writes:

> It may be doubted whether psychologists realize sufficiently the enormity of their implicit claims. If psychology is applicable at all, it is applicable – or one day will become so – to all the major problems of the individual and society. . . .[72]

Now there is no doubt that Mace *does* believe psychology applicable, as witness the typically Macean synthesis of experimental findings on incentives with 'The will to be good',[57] together with his strongly argued plea for the integration of psychological knowledge into the lives of ordinary human beings – 'Psychology and the Laity'.[84] Psychology in this sense is a wide entity; it consists in bringing logic, common sense, experimental evidence, introspection – indeed all the tools of the psychological scientist – to bear on the multiplicity of problems confronting man.

With this essential optimism goes an essential constructiveness. He is more conscious of the baby than of the bathwater. In the paper which caused McDougall to abandon the term 'instinct' for 'propensity' – no mean feat – Mace does not jettison the whole idea of 'instincts' but modifies it until:

> But at best they provide only the most elementary type of law, viz., that in which only constants are employed. They state that a given sort of action is uniformly connected with a specific sort of precept, emotion, and impulse. Psychologists cannot be

indefinitely satisfied with laws of that kind. What is required is to determine relations of functional dependence. That is, we must replace McDougall's constants by variables. We must show how a systematic variation in the stimulus is followed by corresponding variation in percept, emotion, impulse, and response. This involves, of course, reducing the whole theory of instinct to terms of laboratory technique.[20]

This would still be an acceptable formulation in the 'new' field of modern ethology, thirty years later.

This constructiveness and positive eclecticism is, I think, most clearly set out in a recent paper 'Emotions and the Category of Passivity',[127] a discussion of some ideas advanced by Richard Peters:

> If there is any difference between the views of Peters and myself, it is perhaps this: Peters writes as if he thought that all psychologists (and perhaps some philosophers) have been *wrong* [Mace's italics] in some important respect in what they have written about emotion.
>
> My thesis is that they have all (or most of them) been *right* [Mace's italics] in some important respect. They have all, in various ways and degrees, contributed to our understanding.
>
> These two propositions are not inconsistent.

It is not only in lectures and papers that Alec Mace is constructively tolerant of individual differences; as a supervisor of research he allows – even encourages – students to pursue 'the kind of research that they will enjoy and be good at'; and the wide variety of theses and researches carried out under his surveillance are evidence of this. His view is clearly that students should be no worse treated than pigs, and of the pig he has written:

There remains an ultimate relativity. What is good for man may not be good for other creatures. The moralist has said that he would rather be a dissatisfied philosopher than a contented pig. The pig's comment has not been reported.

The pig would no doubt say that he would rather be a discontented pig than any self-satisfied philosopher. Even the pig has its own distinctive good, needs which it would satisfy, if it could, on the whole and in the long run. Each kind of creature endeavours to persist in its own being, and in so persisting to enjoy its own distinctive quality of life.[94]

I remember clearly an American postgraduate who, before he arrived in England, had enjoyed some ten years' close supervision by psychological mentors. At first he felt lost in the 'open-ended' Macean field, but I recall him, a month before his oral examination, reaching for a drink at the Marlborough and declaring, in heartfelt and sincere tones: 'You know, I've been supervised by various well-known psychologists for years now, and in twenty-five minutes, right at the end of my thesis, I get more *real* supervision and insight than ever before.' I explained to him that this was standard Birkbeck practice. I do not think that he believed me.

For, where Sir Thomas could, rather smugly, write:

I have therefore one common and authentick Philosophy I learned in the Schools, whereby I discourse and satisfy the reason of other men; another more reserved, and drawn from experience, whereby I content mine own.*

Alec Mace has drawn no such distinction in his career – the psychology of C. A. Mace and the person of C. A. Mace are in many ways inseparable. His psychology is

* *Religio Medici* (part II, section 8): *Collected Works*, vol. I.

both a part and a reflection of his life and he has willingly shared it with his fellows.

Those of us who were his pupils or colleagues know of his wisdom, kindness, honesty, and intense concern for the individual person. If we think, we are likely so to do, partly, because we have heard him 'think aloud' and 'caught the knack'. Because of the quality of the man he will have an enduring place in the minds of his readers, but even more surely his thoughts will endure in the minds of his pupils and, in turn, of their pupils.

PART TWO

MACE, MOORE, AND WITTGENSTEIN

BY JOHN WISDOM

I CAME to know Alec Mace at St Andrews in 1929 when I took up my first teaching post. Ever since I have felt a great respect for him as a thinker and a man.

A small article, 'Faculties and Instincts', which he published in *Mind* in 1931,[20] not only makes one think again about explanation by reference to faculties and instincts but throws a light upon all explanation. I would like to say something about that article here and also about a note on emotive and descriptive language which Mace contributed to an early number of *Analysis*. But I want still more to say something about Mace's essay 'On How We Know that Material Things Exist'[52] in *The Philosophy of G. E. Moore* and also something about a remark he made in a conversation many years ago at St Andrews. Two or three of us had been discussing what we would then have described as the questions 'What do we mean when we call a thing "good"?' or 'What is the analysis of what we mean when we call a thing "good"?' The discussion had gone on for some time and had become rather warm when Mace remarked, with that shadow of a smile which those who know him will know, that it seemed to him that we need to put together not the true, the good, and the beautiful but the beautiful, the good, and the comic. We were not then able to talk much longer

but Mace's comparison stayed in my mind and about twenty years later when I was giving the Gifford Lectures at Aberdeen I recommended the comparison of one who says of something 'It's good', with one who says of something 'It's amusing'. I did not make the point of the comparison clearly enough, for when the time for questions came no one said much about it. Perhaps everyone thought the comparison just another presentation of a subjective theory of value. The question 'Can one prove that something is funny?' sounds a bit like a joke, and it is only on second thoughts that one realizes that one who says of, for instance, a play, 'It's very funny', is not saying something so unchallengeable as 'I felt I'd die of laughing' nor so much at the mercy of the reactions of others as 'It will have them all rolling in the aisles'. And if a consideration of one who says of something 'It's comic' or 'It's tragic' throws light on one who says of something 'It's good', does it not also throw light on one who says of something 'It's sweet', 'It's bitter', 'It's yellow', 'It's hot', 'It's heavy', 'It's square'? We know how many philosophical difficulties can be expressed in the form 'Are questions of this kind objective or are they subjective?' One is inclined to think that the statement 'It's amusing' is as subjective as 'It's popular'. And one finds it is not.

However much a remark seems to light up in a flash a bit of country which though familiar to us has bewildered us, we may need to explore that bit of country step by step in daylight. There is not time to do that now with Mace's remark. But I do not want

to leave it without saying something about another feature of it, namely, what it shows as to how one can meet philosophical difficulty.

Anyone who offers a rule for analysing questions of a certain sort and anyone who offers an analysis of a particular question such as 'Was it wrong to drop the bomb?' equates a question in one form with a question in another form and thus offers a comparison. Anyone who says that questions of one kind, for instance questions of praise and blame, are a species of questions of another kind, for instance questions as to matters of fact, classifies questions of the first kind and thus offers a comparison between them and other members of the class in which he puts them.

By analysis and classification, and by attempts at analysis and classification, we can go a long way in philosophy. But we can also reach a situation in which philosophical problems appear insoluble until we notice their affinity to, and then their difference from, riddles and see the value of a more primitive procedure in which we compare types of question, types of knowledge, to others without equating them to others or even classifying them with others.

Comparisons can be suggested without asserting anything, even without uttering a word. Imagine that as someone walks by us you laugh and that I say 'Why laugh?' You may then, without a word, imitate the person who walked by, and this imitation, whether it is a close imitation or an extreme caricature, may show me what had escaped me. Even when a comparison is made in words nothing need be asserted. When

John Wisdom

William James called the riddle 'Does a man who walks round a tree on which there is a squirrel which keeps its face always towards him, walk round the squirrel?' a 'metaphysical' problem, he was not asserting that that problem is a metaphysical problem. Nor was he making the feeble assertion that the riddle is in some way like a metaphysical problem.

This remarking of affinities or of differences not readily marked in ordinary language has never been absent from philosophy. Indeed philosophy, whether of the kind which asks 'Does real honesty exist?' or 'Does real love exist?' or of the very different though still like kind which asks 'Does real knowledge exist?', springs from a dissatisfaction associated with normal classification and an ordinary use of words. Without those whose thought in this way sets a cat among the pigeons philosophy would not begin. Questions raised by comparison not on established lines can be met, and in extreme cases must be met, by comparison not on established lines.

The danger of thinking in comparisons which are not presented in statements which are to be taken literally is that such thinking may become too loose. But when in Mace there is evasion of statement, there is nonetheless immense determination to look and look again at what is under discussion until what has been obscure becomes clear. This is best known to those who have discussed matters with him, but some illustration of it may be found in his essay 'On How We Know that Material Things Exist' in *The Philosophy of G. E. Moore.*[52]

Mace, Moore, and Wittgenstein

This essay, though focused on Moore, is about philosophical difficulty and how it may be met. It begins by drawing attention to a fact which though it had been familiar to all of us who had studied Moore had not sufficiently mystified us. It is this: Moore insisted that on many occasions we know things about, for instance, the past, or the material world, and at the same time said that we, in a sense, do not know what it is we know on these occasions, and also do not know how we know what on these occasions we know. Mace quotes Moore's words 'We are all in this strange position that we do *know* many things, with regard to which we *know* further that we must have had evidence for them, and yet we do not know *how* we know them, i.e. we do not know what the evidence was.'

Mace agrees that there are several sorts of situation which one might be inclined to describe in this way. He reminds us that any plain man who is asked how he knows that the Great Pyramid existed before he was born 'may for a moment at least be at a loss for an answer', and that 'If we take a couple of glances at some material thing and then are asked how we know that this thing existed throughout the time between glances we are again at a loss for an immediate answer', and that when we are actually looking at things we may be 'nonplussed and perplexed when asked to say how we know that they exist at the times when we are actually perceiving them'.

At the same time Mace reminds us that we all do acquire much knowledge of material things, and of the past. He reminds us that whenever we are in doubt

as to whether what is before us is part of a material thing, for instance a human hand, we know very well how to change this doubt into knowledge. In short, he reminds us that in a certain familiar, workaday sense we do know the evidence for the things we say about material things before us or behind us or in the past, and do know how we know these things, and do know what we know when we know these things.

In spite of Moore's questions as to how we know what we know when we know things about the past and what we mean when we talk about these things he would have gone thus far with Mace. See for instance Moore's *Some Main Problems of Philosophy*, p. 205. But Mace goes farther.

He reminds us (p. 285) that the plain man who is nonplussed by a question as to how he knows that the Great Pyramid existed before he was born 'would not be completely nonplussed', and that 'if he could not say precisely what the evidence was upon which he was relying he could say something regarding the sort of evidence that is relevant to the case'. He agrees (p. 297) that the process by which we come to know even the simplest things about the material world (or the past) is complicated. He says, 'The details of the way in which these things are discovered admit of long and tedious description and for precise analysis require perhaps to be expressed in the elaborate notation of factorial analysis.' But he reminds us that the difficulties we may feel or find when we try to say how we know what we know not only do not prevent our achieving this knowledge but also do not

prevent our having a good deal to say about how we achieve it.

Even this is still something which could be accepted as 'in a certain sense true of course' by someone who, like Moore, says that we do not know how we know what we know.

But Mace on his last page takes a further step. After saying that Moore's certainties are the certainties of the plain man and his doubts and hesitancies are the doubts and hesitancies of the plain man, he says:

> But what is more important than this is the fact that Moore's doubts would be resolved in the plain man's way.
>
> If Moore's methods are correct, the conclusion would seem to follow that the function of the philosopher is not to find new and technical evidence either for or against common-sense beliefs but to incite or provoke the plain man to find the answers to the questions posed – the answers which he 'naturally' gives if sufficiently pressed and kept to the point.

The significance of what Mace says here may easily be missed. For his words may convey the impression that the suggestion which he is making as to how philosophical difficulties may be met is a suggestion which can easily be inferred from a knowledge of Moore's methods. But the method here suggested, though like Moore's in that one who adopts it listens very carefully to what the plain man has to say, is also profoundly unlike the method we associate with Moore because he so long followed it. Moore to the last retained his willingness to think again about answers to philosophical questions and also about the way in which they may be met. But in his auto-

biography *The Philosophy of G. E. Moore* (p. 33) he says, speaking of Wittgenstein,

> He has made me think that what is required for the solution of philosophical problems which baffle me, is a method quite different from any that I have ever used – a method which he himself uses successfully, but which I have never been able to understand clearly enough to use it myself.

Most of the problems which continued to trouble Moore were either problems as to how we know things of a certain kind, for instance things about the material world or the past, or problems as to what we know when we know things of a certain kind. And I believe that he was right in thinking that these connected problems would not have baffled him as they did but for a limitation in his idea as to how these problems can be met.

When Moore felt baffled by a difficulty as to how we know propositions of a certain kind, for instance propositions about the past, what was the line of thought which had led him into this unfortunate condition? In the first place he had considered very carefully whether propositions of the kind in question are analysable into, deducible from, or disguised forms of, propositions of a kind which raise no difficulty, or at least do not raise the same difficulty; and he had found himself unable to accept any suggestion of this sort. For instance, he very much doubted whether propositions about material things are analysable into propositions about sensations and whether propositions about the past are disguised propositions about the present.

In the second place he had also, before acknowledging himself baffled, considered the suggestion that our knowledge of propositions of the kind in question is indirect, that it is reached by induction. And this suggestion, too, he had been unable to accept.

In the third place Moore had considered and rejected the suggestion that we do not have knowledge of propositions of the kind in question. He had considered samples of propositions of the kind in question and his certainty that we do have a knowledge of propositions of that kind had remained quite unshaken. These results may be summed up by saying of propositions of the kind in question, e.g. propositions about material things or propositions about the past or propositions about good and evil, that they are not analysable into or classifiable as propositions which do not provoke the same difficulty, that they are not derivable by deduction nor yet by induction from such propositions, and that nevertheless they are known – that they are what they are and are known in their own way.

Moore was again and again driven toward this sort of answer. But it did not satisfy him. It was not that he thought it untrue. It was not merely that he was not quite certain of its truth, because he was not quite certain that propositions of the kind in question are not analysable into, and not derivable by induction from, propositions which do not raise the same difficulty. It was that this sort of answer left him still feeling that he did not know as he wanted to know how propositions of the kind in question are known.

He felt the answer inadequate and he also did not see how to add to it so as to remove that inadequacy.

In this double respect he was like those philosophers who have avoided this sort of answer by adopting one of those answers which Moore rejected. Much as they differed from each other and from Moore, they all, like Moore, felt that the sort of answer Moore was driven to accept is inadequate, and they also could not see any way to add to it so as to remove that inadequacy. This group includes a great many philosophers who have attempted to deal with problems as to how we know what we claim to know in this sphere or in that. But not all – not all in the same degree. G. F. Stout, for instance, was rather different. Wittgenstein was very different. True one might read Stout and then think to oneself, 'All he does is to say that propositions about material things are not reducible to, deducible from, propositions about sense experience, and that they are not known indirectly, inductively, from propositions about sense experience, and that they are known somehow "immediately" and yet "in and through" sense experience. He makes no attempt to enlighten us on what it is to know "immediately" and yet "in and through" sense experience.' But Stout does make an attempt to do this. Indeed, someone might complain: 'Stout becomes so engaged in describing how we reach our beliefs about material things, about other people, about the past, that his work reads more like a piece of psychology than an attempt to show that or how these beliefs are *justified*.'

Wittgenstein's work is very different. And yet there

is a remarkable similarity. This similarity comes out if one thinks of someone who having read Wittgenstein says: 'This man, when he is asked a philosophical question as to how from the data we have we know what we claim to know about the past or the material world, shows wonderfully well how misleading is the answer "Indirectly" or "As from reflections in a mirror we know what is behind us on the road". So much so that one would have expected him to give a positivistic answer to the philosophical question and to say that propositions about things of the kind in question are analysable into, reducible to, and thus deducible from, propositions about the data from which they are derived. But in fact he does not. He was on one occasion asked "Are propositions about material things entailed by propositions about our sensations?" and his reply was not "Yes". It was "We know them from our sensations" or "through our sensations". I cannot exactly remember his words but they were very like that. He seemed to think that in order to solve a philosophical problem or philosophical difficulty as to how we reach knowledge in a certain sphere it is enough to show the incorrectness of solutions which have been offered and then say "But is not this what we here *call* knowledge?" For instance, what more than this does he do when in his *Philosophical Investigations* (p. 137) he asks "What is *called* a justification here?" '

This is, of course, a caricature, a mischievous caricature, of Wittgenstein's procedure. Wittgenstein did what this caricaturist says he did. But he did much more. He fought the habit of thinking on the following

pattern: 'The statements we make about material things cannot be justified deductively from the sort of data on which they are based. So they must be hypotheses justified inductively from that sort of data. Or else they are not justified at all and are at best expressions of beliefs which are often useful guides to life.' And in this battle he often put a challenging question of the form: 'If this isn't justification of this sort of statement what would be justification of this sort of statement?' But when he asked such a question he did so against a background of work in which he had shown us in instance after instance how easily we come to have, temporally at least, a cramped grasp of the varieties within the unity of a kind – a kind of thing or kind of activity, for instance the playing of a game, the defending of a position, the justification of an assertion, the discovery of a truth, the attainment of knowledge. Moore in describing Wittgenstein's work in *Philosophical Papers* (p. 256) writes,

> I cannot possibly do justice to the extreme richness of illustration and comparison he used; he was really succeeding in giving what he called a 'synoptic' view of things which we all know.

The phrase 'a synoptic view of things which we all know' reminds one of words Moore used early in his philosophical career when he wished to explain the purpose of asking what an expression means even when one is quite familiar with its meaning. In *Some Main Problems of Philosophy* he writes (p. 205), '... obviously with a notion itself, it may be quite readily conveyed to us by a word, even though we cannot analyse it or

say exactly how it is related to or distinguished from other notions'. Had Moore here written not 'say exactly' but 'see exactly' and had he here recognized another way besides analysis to a synoptic view of where a notion stands among other notions, his way of working on difficulties as to how we reach knowledge of this kind and knowledge of that kind might not have suffered from that limitation which so much affected his work and the work of others.

It is easy to exaggerate here. Moore himself exaggerates the difference between himself and Wittgenstein when he says that Wittgenstein used a method quite different from any that he, Moore, had ever used. In the first place, as we have noticed already, the examination of any proposed analysis or classification of a notion or a class of propositions involves comparisons. For instance one cannot examine the 'theory' or 'theorem' that any assertion that a thing is good is equivalent to an assertion that it is approved by most people without comparing these two sorts of assertion. And whether or no the proposed analysis or classification turns out to be correct the comparison may be, and often is, enlightening. In the second place it is not true that when Moore had come to the conclusion that a class of propositions is 'unanalysable' he then never had anything more to say. When Moore wrote his essay 'The Conception of Intrinsic Value' he was still opposing any analysis of predicates of value into naturalistic predicates, but in this essay he is comparing predicates of value with other sorts of predicate. The essay is, I submit, an extremely valuable comparative

study of the difference or differences between predicates of value and other predicates. Nevertheless Moore's feeling that he succeeds only if he can 'say' or 'say exactly' or 'define' what the difference is has two mischievous effects. It makes him disparage his own achievement. He says that he can see that there is a difference but that he 'cannot see *what* it is' (p. 274). I suggest that what troubles him is not so much that he cannot *see* as that he cannot *say* what the difference is, I mean cannot say what the difference is in that way which people are regarding as the proper way of making a thing clear when they say that they 'cannot define', 'cannot state precisely', 'cannot say exactly' what they had in mind when they made a certain remark, for instance 'Hemingway's work is sentimental' or 'Jack has *changed* since he married that woman'. Two things are worth noticing about the occasions when people say this sort of thing. First, sometimes when someone says, and says truly, that he cannot 'define' or 'state precisely' or 'find the right word for' what he has in mind, he has nevertheless already made perfectly clear what he has in mind. Certainly he sometimes has not, but to remember this only reminds us more clearly that sometimes he has, that sometimes there is absolutely no need for him to say any more. Secondly, sometimes, often when someone says and says truly that he 'cannot define', 'cannot state precisely', 'cannot say properly' what he has in mind he then abandons any attempt to do what he still might do to make clearer, to make quite clear, what he has in mind. Feeling that he has failed, or that words have failed

him, he stops trying to illustrate what he has in mind or to make it clear by reference to parallel cases. Moore seldom permits himself to say anything so inconclusive, so near to saying nothing, as 'How like is one who tells us that a play is good to one who tells us that it is funny!' And Moore seldom permits himself to say anything as extravagant as what James permitted himself to say when he called the riddle about the squirrel a 'metaphysical' problem or so extravagant as that which Wittgenstein permitted himself to say when he called principles of logic 'rules of grammar', or as that which a reductionist permits himself to say when he says that statements about chairs and tables are statements about our sensations or that statements about good and evil are statements about our feelings. Moore upon the whole confined himself to opposing or at least questioning such extravagant assertions. And this opposition was of very great value. For such assertions may on the one hand mislead and on the other hand go unappreciated, unless they are opposed by a person of common sense, whether he be one who has never taken a hand in philosophy before or an old hand like Moore. But such a person need not confine himself to such opposition. He need not confine himself to saying, nor confine himself to showing, that statements as to what is good and bad are not merely statements about our sensations. He may hesitate when asked to go on but, as Mace reminds us, he can go on. For instance, suppose that someone who has never read any philosophy is asked, 'How does one know what lies

behind one in the past?' He may reply, 'By memory.' And if he then is asked, 'And how does one know that one's memory portrays faithfully what is behind one in the past?' he might then reply, 'Well I suppose one comes to know that one's memory can be trusted as to what is behind one in the past much as one comes to know that one's driving-mirror can be trusted as to what is behind one on a road.' This answer reminds one of a philosopher who says that our knowledge of the past is indirect. Indeed, as one might have expected, the answers which non-philosophers give when pressed to answer philosophical questions again and again remind one of the answers which philosophers have given. So much so that one may wonder why Mace has such high hopes of help from 'the plain man', such a respect for a 'common-sense' method of meeting philosophical difficulties. What is the way of meeting philosophical difficulties which Mace has in mind when he speaks of 'a plain man's way'?

The way in question is not one which a non-philosopher is certain to adopt nor one which a philosopher is certain not to adopt. It is a way which a philosophical training may discourage one from adopting and which the absence of philosophical training may leave one free to adopt. But what is this way like?

Suppose that someone is urged to say something indicating the differences between (a) the way one answers a question as to what is so in the material world and (b) the way one answers a question as to appearances in one's own mind and (c) the way one

answers a question as to appearances in the minds of others. He may reply somewhat as follows: 'Well to begin with if you are asked "Is there a difference between the taste of this and the taste of that?" you cannot answer this question in the simple way you can answer the question "Do you taste a difference between this and that?" or "Does it appear to you that there is a difference between the taste of this and that?".' And he may go on to say that one of the differences here is that although in order to answer the question 'Is there a difference of taste between this and that?' one may and should, if one has not already done so, taste both this and that as one should when asked 'Do you taste a difference between this and that', one must, in the case of the question as to whether there is a difference as opposed to the question whether one tastes a difference, pay some regard to what other people and animals have to say in the matter, though not that regard one must pay in order to answer a question as to whether Jack or Jill or most people taste a difference between this and that.

These remarks sound childish – I mean they sound like the sort of thing one might say to a very young child when explaining to him the difference between lions in dreams and lions in the jungle or between imaginary voices and real voices. They tell us, who are not children, only what we very well know already. And yet they are to the purpose. They mention what is very relevant to what philosophers have had in mind when they have said that one cannot know or

cannot know directly the material world, while one cannot but know what is in one's own mind at the moment.

But though these remarks are to the purpose are they adequate to the purpose? May they not meet with the response: 'This is all very well but go on. What is the difference between the way in which one must, as you put it, "pay regard to what others have to say" when answering the question "Is there a difference between the taste of this and that?" and the way one must pay regard to what others have to say when answering the question "Does Jack, does Jill, do most people taste a difference between this and that?"'

Certainly these remarks may meet with this response. They may not. They may meet instead with the response 'Ah that's it. That points to those differences and affinities between knowledge of one's own mind, knowledge of the material world, and knowledge of the minds of others which some philosophers have naturally but misleadingly indicated by saying that knowledge of one's own mind is direct while knowledge of the material world is indirect and knowledge of the minds of others doubly indirect.' But though these remarks *may* meet with such a welcome it must be confessed that they are likely to meet with a complaint or at least a request to go on.

However, there is nothing to stop us from going on. There is nothing to discourage us from going on with further remarks of the same sort unless we think that however much we go on with remarks of this sort they will never meet the need expressed by the

questions 'How do we know about material things? What is the difference between our knowledge of material things and other kinds of knowledge?'

Unfortunately we sometimes do come near to thinking this. The tendency to think on these lines does not show itself only in philosophy. It shows itself on many occasions when someone endeavours to meet a question as to what it is for things to differ in a certain way or what it is for a thing to be of a certain kind. Suppose that someone who very well knows what poetry is asks 'What is poetry?' or 'What is the difference between poetry and prose?' and that we reply 'Well if one were to write

> Whatever is to come, is not;
> How can it then be mine?
> The present moment's all my lot,
> And that, as fast as it is got,
> Phyllis, is wholly thine.

one would be writing poetry, while if one were to write "The future, since it does not now exist, is not now at my disposal. Only the present moment is. But that, Phyllis, is always at once wholly yours" then one would be writing prose.' We should not be thought to have said anything untrue nor anything altogether beside the point. But our answer would be likely to be called 'hardly an answer' and 'inadequate'. And certainly it does little to bring before the mind the range of poetry and the range of prose. We might, of course, add many other examples of poetry and of prose. We might without attempting a definition of poetry add remarks about the examples. We might

draw attention to the presence or absence of rhyme or of rhythm of a certain sort. Many might then find our answer more satisfactory, more adequate. And yet there might be in many still the thought that any answer of this sort must at best be a second best.

And this is very natural. One may of course teach by examples the meaning of the word 'poetry' to one who does not know what is poetry and what is not, as one may by examples teach a child the meaning of 'bow wow' or 'moo cow'. But if someone already knows what is poetry and what isn't when he asks 'What is poetry?' then surely what he needs cannot be provided by pointing to examples of what is and is not poetry? If someone who already knows which arguments are syllogistic and which are not now asks 'What is syllogistic argument?', shall we help him much if we set before him from his own repertoire examples of argument which is syllogistic and argument which is not? Without saying that such examples would be useless to him it is surely very likely that an answer which provides a definition of the term 'syllogistic argument' will meet his need more quickly and more adequately. How admirably does the definition of 'cousin' provided by the *Oxford Dictionary* enable us to review the varieties of cousin. Examples, on the other hand, even when numerous and well chosen, always put a tax on our power to extract the relevant from the irrelevant, to abstract the universal from the particular. One who gives a definition of the difference between things of a certain kind and things not of that kind specifies, states, just what is, and, by implication,

what is not necessary to that difference in a way in which no one who does not give a definition does.

So it is not surprising that often when someone who has been asked a question as to the nature of a certain difference, for instance, the difference between poetry and prose, feels that he cannot define that difference he is somewhat apologetic in his reply. He may say, 'I am afraid I cannot define the difference'; and even if he then goes on to try to give some account of that difference he often does so with an air of providing what is inevitably only a second best. Indeed he may be so discouraged by his inability to define the difference that he abandons any attempt to give an account of it and says, 'Well there is a difference but I'm afraid I cannot explain what it is.' He may even say that he does not know what it is or even that no one knows what it is. A certain critic – it was Humbert Wolf – when reviewing the poems of Laura Riding, found himself obliged to reject as incorrect several definitions of poetry. He then came very near to drawing the conclusion that we do not know what poetry is. A philosopher who has rejected as either incorrect or futile every definition of the difference between necessary and contingent statements may be tempted to suggest that we have no reason to think that there is a difference and even that there is no difference. Even such extreme reactions to an inability to meet by a definition the need of one who asks the nature of a difference are understandable.

It has however often been remarked, for instance by judges, that the fact that we cannot define a difference

does not mean that we do not know what that difference is. Whether or no we have defined or can define the difference between an elephant and a kangaroo or a mammoth there is a difference and we know that difference. Is it true perhaps that we inevitably have a *better* grasp of a difference, of a notion, we have defined than we have of one we have not? But this too is not so. When we have defined the difference between squares and rectangles by saying that squares are rectangles which have all their sides equal, we do not have a better grasp of that difference than we have of the difference between sides which are equal and sides which are not, whether or no we have defined the differences between sides which are equal and sides which are not. Is it true that when someone already knows the difference between things of a certain kind and things not of that kind, in the sense that he can always say whether a thing is of that kind or not, then no review of examples can improve his grasp of that difference as a definition could? But this, too, is not so. A person who can recognize arguments which are syllogistic and arguments which are not *may* by a careful consideration of different examples of each come to see better the relations between arguments of the two sorts just as much as one who finds or is offered a definition of syllogistic argument. Indeed it may happen that the improvement in our grasp of the varieties of a kind produced by the consideration of examples is greater than the improvement produced by a definition. For it may happen that the definition provides only a way of saying what has

already been seen while the examples show what has not been seen. It may happen that someone notices a difference – perhaps a difference between ways to knowledge or ways of life – for which there is at present no name and *a fortiori* no definition. In such a situation the idea that nothing but a definition will enable one to see clearly what one wishes to see may discourage one from looking again and thinking afresh in that way in which, at such a juncture, one so much needs to look again and think afresh.

Wittgenstein and his followers were anxious to make clear the mischief this idea may make and, in particular, the mischief it may make in philosophy, which is an inquiry in which one is again and again concerned to study some disturbing difference or affinity which language as it stands does not mark and even obscures.

Logicians provided us with an excellent system of words and symbols for describing the differences and affinities between the various forms of demonstrative and non-demonstrative, deductive and inductive, justification for beliefs. But all this good work did not clear up the difficulties philosophers felt when they asked themselves questions as to the *ultimate* justification for our beliefs – our beliefs about the past, our beliefs about the minds of others. It left them still hesitant as to whether this ultimate justification is deductive or inductive and it did nothing to diminish an inclination to think that unless the process by which we reach our beliefs is deductive or at least inductive then it is not a process of justification at all.

Some philosophers like Moore freed themselves from this confusing idea as to what a process leading to belief must be like if it is to give knowledge. But even one who has freed himself from this idea may still have the confining idea that the knowledge desired by one who asks a question as to what it is for a thing to be of a certain kind or as to how a thing is done can be provided only by a definition, an analysis. And such a person is likely to feel that though on many occasions we know things about the past, the minds of others, material things, nevertheless, unless we can (a) define, analyse, what we know on these occasions and (b) define, analyse, what it is to know what we know on these occasions, then we (a) do not know what we know on these occasions and (b) do not know how we know it. Moore was often very nearly in this position, though in his later years, influenced by Wittgenstein, he was moving out of it.

Unfortunately Wittgenstein and his followers were so anxious to draw attention to the mischievous effects of the idea that a better grasp of what it is for a thing to be of a certain kind can be gained only by finding a correct definition of what it is for a thing to be of that kind that they sometimes gave the impression that whenever no such definition exists it is a waste of time to look for one. But incorrect definitions can be extremely valuable to us provided we come to see how they are incorrect, and this we can do even when we cannot define that incorrectness. We betray a still limited idea about how a better grasp of what it is for a thing to be of a certain kind if we represent as inevi-

tably altogether useless all attempts to define the indefinable.

Mace does not do this. He does indeed make it clear that he does not believe that when we are faced with a philosophical question 'Do we on these occasions have real knowledge and if so what is it that we know and how do we know it?' then we can achieve the desired synoptic view of what we know and how we know it only if we can find definitions of what we know and how we know it which are both illuminating and perfectly correct. But he does not induce in us a fear that any search for such definitions is bound to hinder our efforts to meet the need which prompts such questions by saying what 'naturally occurs' to us, when such questions are asked. What naturally occurs to us when we are asked 'What is knowledge?' or 'What is knowledge of this kind?' is of the same variety as what occurs to us if we are asked 'What is deductive reasoning?' or 'What is poetry?' or 'What is drama?' or 'What is life?' When we are asked such questions we offer definitions, mention characteristic features, employ similes and metaphors, present parables and examples.

If we follow this natural course we shall soon hear voices telling us that this or that part of our procedure is inappropriate, useless. For instance we shall be told that if we wish to gain a more than piecemeal, a synoptic view of life, then we should abandon the reading of novels and plays which merely represent happenings in life as familiar as a young officer's falling in love with a beautiful married woman, and turn to

more philosophical works. (Here we may remember that Tolstoy was vexed because people gave more attention to his stories than to his philosophical writings.) But if we take this advice we shall soon hear someone telling us that we are following a wrong and even ludicrous course since a philosophical treatment of questions such as 'What is life?' or 'What is the meaning of life?' is bound to end in answers which are unverifiable and meaningless or in answers which when they are not incorrect are trite. We may indeed be told that such questions as 'What is life?' or 'What is the meaning of life?' are still asked only because people have the idea that these questions have an answer when in fact they have no answer. We may be given the impression that when such questions are asked there is nothing to be done beyond bringing to light the confusions which prompt people to ask them.

Here we may remember that some people have gathered from Wittgenstein the impression that one should not expect from philosophy anything more than (1) the cure of certain persistent illusions as to the nature of philosophical statements and questions and (2) the cure of certain intermittent illusions as to the nature of non-philosophical statements and questions – illusions which overcome us in idle moments. Some people get the mistaken impression that one cannot expect from psycho-analysis anything more than the restoration of a normal view of life. Some people get the mistaken impression that one cannot expect from philosophy anything more than the restoration of a normal view of knowledge. Mace

does not give this impression. He reminds us that in philosophy we are concerned only with what is as familiar to us as the way in which we settle doubts as to whether what appears to be a dagger is a real dagger or a reflection in a mirror, or a figment of the mind. So he discourages the idea that in philosophy we make discoveries, gain knowledge, like one who with X-ray photographs learns more of the nature of matter. But on the other hand he does not give the impression that in philosophy the best we can hope for is the restoration of a normal view of the various species of knowledge. On the contrary he gives the impression that if when we encounter a philosophical question, whether it be as sober-sounding as 'How do we know the material world?' or as crazy-sounding as 'Do we know the material world?', then if we succeed in meeting it we shall obtain a better view of the familiar processes with which it is concerned than any view of them we had in our normal, common-sensical, pre-philosophical days. And he encourages us to believe that we can succeed if we permit ourselves to use all the resources available to us.

Mace is one of those who, whether they are doing philosophy or not doing philosophy, combat our inclination to allow habits of thought and talk to confine our efforts to see better than we have before what things are like.

BIBLIOGRAPHY
THE WORKS OF C. A. MACE

COMPILED BY B. R. SINGER

For help and suggestions in the preparation of this bibliography I am grateful to Professor C. A. Mace, and to my colleagues A. J. Flook, R. Hall, and P. Heath of the University of St Andrews

1922–6

1. 'The Effects of the System' being part II of: Hobhouse, S., and Brockway, A. F., *English Prisons Today*, Report of Prison System Enquiry Committee, Longmans, Green, London, 1922.
2. Review: Roback, A. A., *Behaviourism and Psychology*, University Bookstore, Cambridge, Mass., 1923. *Mind*, 1924, XXXIII, pp. 109–10.
3. Review: Hobson, E. W., *The Domain of Natural Science*, Gifford Lectures delivered in the University of Aberdeen in 1921 and 1922, Cambridge University Press, 1923. *Mind*, 1924, XXXIII, pp. 209–11.
4. Review: Thurstone, L. L., *The Nature of Intelligence*, Routledge & Kegan Paul, London, 1924. *Mind*, 1925, XXXIV, pp. 381–2.
5. Review: Wolf, A., *Essentials of Scientific Method*, Allen & Unwin, London, 1925. *Mind*, 1926, XXXV, pp. 253–4.
6. Review: Brown, W., *Psychology and the Sciences*, A. & C. Black, London, 1924. *Mind*, 1926, XXXV, p. 115.
7. Review: Collins, M., and Drever, J., *Experimental Psychology*, Methuen, London, 1926. *Mind*, 1926, XXXV, pp. 520–1.
8. Review: Pear, T. H., *Skill in Work and Play*, Methuen, London, 1924. *Mind*, 1926, XXXV, p. 115.
9. Critical notice: Watt, H. J., *The Sensory Basis and Structure of Knowledge*, Methuen, London, 1925. *Mind*, 1926, XXXV, pp. 93–7.

10. Review: *Problems of Personality*, Studies in honour of Dr Morton Prince, Kegan Paul, London, 1925. *Mind*, 1926, XXXV, pp. 254–5.

1927–31

11. Review: Hazlitt, V., *Ability*, Methuen, London, 1926. *Mind*, 1927, XXXVI, pp. 250–1.
12. Review: Dunlap, K., *Old and New Viewpoints in Psychology*, Henry Kimpton, London, 1925. *Mind*, 1927, XXXVI, p. 109.
13. *Sibylla or the Revival of Prophecy*, 'Today and Tomorrow' Series, Kegan Paul, Trench, Trubner, London, 1927.
14. Review: Campbell Garnett, A., *Instinct and Personality*, Allen & Unwin, London, 1928. *Journal of Philosophical Studies*, 1928, III, pp. 396–7.
15. Review: Lane, H., *Talks to Parents and Teachers*, Allen & Unwin, London, 1928. *Journal of Philosophical Studies*, 1928, III, pp. 397–8.
16. Review: Foucault, M., *Cours de Psychologie*, Tome Premier, Félix Alcan, Paris, 1926. *Mind*, 1928, XXXVII, pp. 116–18.
17. 'Belief', *Proceedings of the Aristotelian Society*, 1928–9, XXIX, pp. 227–50.
18. *The Psychology of Study*, Methuen, London, 1929. See also 143.
19. 'Psychology', with Stout, G. F., in *Encyclopaedia Britannica*, 14th edition, 1929.
20. 'Faculties and Instincts', *Mind*, 1931, XL, pp. 37–48.
21. 'The Influence of Indirect Incentives upon the Accuracy of Skilled Movements', *British Journal of Psychology*, 1931, 22, pp. 101–14.
22. 'The Nature and Validity of Formal Logic', *Proceedings of the Aristotelian Society*, 1931, supp. vol. X, pp. 27–42.
23. Critical notice: Stebbing, L. S., *A Modern Introduction to Logic*, Methuen, London, 1930. *Mind*, 1931, XL, pp. 354–64.
24. 'Hume's Doctrine of Causality', *Proceedings of the Aristotelian Society*, 1931–2, XXXII, pp. 301–28.

Bibliography

1932–6

25. 'Formalism', *Mind*, 1932, XLI, pp. 208–11.
26. 'Formalism: a Rejoinder', *Mind*, 1932, XLI, pp. 483–4.
27. Review: Alverdes, F., *The Psychology of Animals*, Kegan Paul, Trench, Trubner, London, 1932. *Philosophy*, 1933, VIII, pp. 494–5.
28. Critical notice: Montmasson, J. M., *Invention and the Unconscious*, Kegan Paul, London, 1931. *Philosophy*, 1933, VIII, pp. 243–5.
29. 'Must Philosophers Disagree?', Symposium, *Proceedings of the Aristotelian Society*, 1933, supp. vol. XII, pp. 131–7.
30. *The Principles of Logic*, Longmans, Green, London, 1933.
31. 'Representation and Expression', *Analysis*, 1934, I, pp. 33–8.
32. Review: Eaton, R. M., *General Logic*, Scribner's, London, 1931. *Mind*, 1934, XLIII, pp. 238–40.
33. 'Hierarchical Organization', *Sociological Review*, 1934, 26, pp. 373–92.
34. 'Metaphysics and Emotive Language', *Analysis*, 1934–5, pp. 6–10.
35. 'Knowledge and Action', *Philosopher*, 1935, XIII, no. 1, pp. 19–25.
36. 'Incentives: Some Experimental Studies', *Industrial Health Research Board Report No. 72*, Medical Research Council, H.M.S.O., London, 1935.
37. 'Mechanical and Teleological Causation', *Proceedings of the Aristotelian Society*, 1935, supp. vol. XIV, pp. 22–45.
38. 'The Distribution of Information', *Human Factor*, 1935, IX, no. 10, pp. 339–49.
39. Critical notice: Cohen, M., and Nagel, E., *An Introduction to Logic and Scientific Method*, Routledge & Kegan Paul, London, 1934. *Philosophy*, 1936, XI, pp. 219–21.
40. 'Physicalism', *Proceedings of the Aristotelian Society*, 1936–7, XXXVII, pp. 23–40.
41. 'Supernormal Faculty in the Structure of the Mind', F. W. H. Myers Lecture, *Proceedings of the Society for Psychical Research*, 1936–7, XLIV, pp. 279–302.

B. R. Singer

1937–41

42. 'Beliefs and Attitudes in Class Relations', Third Conference on the Social Sciences, 1937.
43. 'Planning Peace', *Science and Society*, 1937–8, vol. I, no. 4, pp. 214–20.
44. Revision of Stout, G. F., *Manual of Psychology*, University Tutorial Press, London, 1938.
45. 'Reading Habits of Today', *Adult Education*, 1939, XII, no. 1, pp. 19–28.
46. Review: Phillips, M., *The Education of the Emotions Through Sentiment Development*, Allen & Unwin, London, 1937. *Philosophy*, 1939, XIV, pp. 234–5.
47. 'Making up our Minds', *Highway*, 1939, XXXI, January.
48. Critical notice: Sprott, W. J. H., *Psychology for Everyone*, Longmans, Green, London, 1937. *Mind*, 1939, XLVIII, pp. 94–8.
49. Review: Allport, G., *Personality – a Psychological Interpretation*, Constable, London, 1938. *Occupational Psychology*, 1939, 13, pp. 64–6.
50. 'Self-Identity', Symposium, *Proceedings of the Aristotelian Society*, 1939, supp. vol. XVIII, pp. 31–48.
51. 'Propaganda and Democracy', *Sociological Review*, 1941, XXXIII, nos. 3 and 4, pp. 169–76.

1942–6

52. 'On How We Know that Material Things Exist', in Schilpp, P. A. (ed.), *The Philosophy of G. E. Moore*, Cambridge University Press, London, 1942.
53. 'Concerning Imagination', *Proceedings of the Aristotelian Society*, 1942–3, XLIII, pp. 21–36.
54. 'National Stereotypes: Their Nature and Function', *Sociological Review*, 1943, XXXV, nos. 1 and 2.
55. Obituary notice: 'George Frederick Stout, 1860–1944', *Proceedings of the British Academy*, 1945, 31, pp. 307–16.

56. Critical notice: Flugel, J., *Man, Morals and Society*, Duckworth, London, 1945. *British Journal of Educational Psychology*, 1946, 16, pp. 39–42.
57. 'The Will to be Good', *Philosopher*, 1946, XXII, no. 12.
58. 'Democracy as a Problem in Social Psychology', inaugural lecture as Professor of Psychology in the University of London, Birkbeck College. Birkbeck College, London, 1946.
59. Obituary notice: 'George Frederick Stout, 1860–1944', *British Journal of Psychology*, 1946, 36, pp. 51–4.

1947—51

60. 'Does Psychology Study Mental Acts or Dispositions?', Symposium, *Proceedings of the Aristotelian Society*, 1947, supp. vol. XXI, pp. 164–74.
61. 'Nature of Incentives', *Nature*, 1948, 162, pp. 557–8.
62. 'Satisfactions in Work', *Occupational Psychology*, 1948, 22, pp. 5–19.
63. 'Satisfactions in Work: a Further Comment', *Occupational Psychology*, 1948, 22, pp. 103–4.
64. *The Idea of a Faculty*, an inter-faculty lecture, Birkbeck College, London, 1948.
65. 'Industrial Incentives and Morale', *Nineteenth Century*, 1948, CXLIV, pp. 321–7.
66. 'The Logic of Elucidation', in *Philosophical Studies: Essays in Memory of L. Susan Stebbing*, Allen & Unwin, London, 1948.
67. Review: Sartre, J.-P., *The Psychology of Imagination*, Philosophical Library, New York, 1948. *Hibbert Journal*, 1948, 47, p. 99.
68. 'Some Implications of Analytical Behaviourism', presidential address, *Proceedings of the Aristotelian Society*, 1948–9, XLIX, pp. 1–16.
69. 'Status and Morale', *Nineteenth Century*, 1949, CXLVI, pp. 169–73.
70. 'Causal Laws in Psychology', Symposium, *Proceedings of the Aristotelian Society*, 1949, supp. vol. XXIII, pp. 61–8.

71. Review: Ryle, G., *The Concept of Mind*, Hutchinson, London, 1949. *Listener*, 1949, 42, p. 1015.
72. Critical notice: *The Place of Psychology in an Ideal University*, the report of the University Commission to advise on the future of Psychology at Harvard. Harvard University Press, Cambridge, Mass.; Geoffrey Cumberlege, London, 1947. *British Journal of Psychology*, 1949, 39, pp. 211–13.
73. 'Haptic Experience and the Plastic Art of the Blind', *Nineteenth Century*, 1950, CXLVIII, pp. 185–92.
74. 'Advance in the Theory and Practice of Incentives', *Occupational Psychology*, 1950, 24, pp. 239–44.
75. 'The Analysis of Human Skills', *Occupational Psychology*, 1950, 24, pp. 125–40.
76. 'Introspection and Analysis', in Black, Max (ed.), *Philosophical Analysis*, pp. 230–43, Cornell University Press, New York, 1950.
77. 'The Human Problems of the Building Industry: a General Survey', *Occupational Psychology*, 1950, 24, pp. 18–30.
78. Critical notice: Sprott, W. J. H., 'Philosophy and Common Sense', inaugural lecture as Professor of Philosophy in the University of Nottingham. *Philosophy*, 1950, XXV, pp. 283–5.
79. 'Logical Positivism', in *Chambers's Encyclopaedia*, vol. 8, pp. 650–1, George Newnes, London, 1950.
80. 'Satisfactions in Life', *Rider's Review*, 1950–1, LXXVII, no. 3, pp. 18–23.
81. 'Psychology and the Ph.D.', an abstract, *Bulletin of the British Psychological Society*, 1950, vol. 1, no. 8, p. 298.
82. 'Teaching Industrial Psychology: a Symposium', *Discussion*, 1950, 15, p. 11.
83. 'Work in Industrial Society', the Present Question Conference, *Question*, 1951, 3, no. 2, pp. 128–38.
84. 'Psychology and the Laity', presidential address to the Psychology Section of the British Association, Edinburgh, 1951. *The Advancement of Science*, 1951, VIII, p. 30.

Bibliography

1952–6

85. 'Education for Management in the United States: Some Impressions and Reflections', *Occupational Psychology*, 1952, 26, pp. 61–92.
86. 'Resistance to Change', *Nursing Times*, 1952, XLVIII, no. 43, pp. 1047–9.
87. 'Can Managers be Trained? What America Thinks', *Manager*, 1952, 20, pp. 81–2.
88. 'Factors Influencing Change in Human Behaviour', *Nature*, 1952, 170, pp. 170–4.
89. Critical notice: Anglo-American Council on Productivity, *Universities and Industry*, report of a specialist team which visited the United States of America in 1951. *Occupational Psychology*, 1952, 26, pp. 120–2.
90. Critical notice: Roback, A. A., *The History of American Psychology*, Library Publishers, New York, 1952. *Philosophy*, 1953, XXVIII, pp. 371–3.
91. 'Abstract Ideas and Images', *Proceedings of the Aristotelian Society*, 1953, supp. vol. XXVII, pp. 137–48.
92. 'Adaptability in a Technological Age', *B.A.C.I.E. Journal*, 1953, 7, no. 6, pp. 220–8.
93. Editor (with P. E. Vernon), *Current Trends in British Psychology*, Methuen, London, 1953.
94. 'Homeostasis, Needs and Values', an abstract from the Presidential Address to the British Psychological Society delivered at Nottingham on 11 April 1953 under the title 'A Psychologist's Approach to the Theory of Values', *British Journal of Psychology*, 1953, 44, pp. 200–10.
95. 'Resistance to Change', *Occupational Psychology*, 1953, 27, pp. 23–9.
96. Critical notice: Humphrey, G., *Thinking: an Introduction to its Experimental Psychology*, Methuen, London, 1951. *Mind*, 1953, LXII, pp. 253–8.
97. 'Representation and Expression', in Macdonald, Margaret (ed.), *Philosophy and Analysis*, Blackwell, Oxford, 1954, pp. 15–22.

98. 'The Psychological Approach to Scientific Management. Can This be Applied in the Home?', British Institute of Management and Council of Scientific Management in the Home, London, 1954, pp. 1–19.
99. 'Human Factors in Technological Change', report of the 1954 Production Conference, Institution of Production Engineers, London, 1954, pp. 151–5.
100. 'The Permanent Contribution to Psychology of George Frederick Stout', *British Journal of Educational Psychology*, 1954, 24, pp. 64–75.
101. '"Thinking" as a Psychological Function of Social Groups', an abstract, *Bulletin of the British Psychological Society*, 1955, 25, p. 38.
102. Critical notice: Caplow, T., *The Sociology of Work*, University of Minnesota Press, Minneapolis, 1954. *Occupational Psychology*, 1955, 29, pp. 254–6.
103. 'Class Distinctions in England', *Literary Guide*, 1955, 70, pp. 6–8.
104. Critical notice: Zangwill, O. L., *Psychology as the Study of Behaviour*, an inaugural lecture, Professor of Experimental Psychology in the University of Cambridge, Cambridge University Press, 1954. *British Journal of Psychology*, 1955, 46, pp. 312–13.
105. Review: Farrell, B. A. (ed.), *Experimental Psychology*, Blackwell, Oxford, 1955. *Philosophy*, 1956, XXXI, pp. 280–1.
106. 'On the Eightieth Birthday of C. G. Jung', *Journal of Analytical Psychology*, 1956, 1, pp. 189–92.

1957–62

107. 'Behaviourism', in Judges, A. V. (ed.), *Education and the Philosophic Mind*, Harrap, London, 1957, pp. 102–20.
108. 'The Will to Work', in *His Royal Highness the Duke of Edinburgh's Study Conference on the Human Problems of Industrial Communities within the Commonwealth and Empire*, vol. 11, Oxford University Press, London, 1957, pp. 115–20.

109. 'The Functions of the Manager: an Operational Analysis', in Thomson, D. Gleghorn (ed.), *Management, Labour and Community*, Pitman, London, 1957, pp. 49–63.
110. Editor, *British Philosophy in the Mid-century*, Allen & Unwin, London, 1957.
111. 'Some Trends in the Philosophy of Mind', in *British Philosophy in the Mid-century*, Allen & Unwin, London, 1957, pp. 99–112.
112. 'Thinking and Discovery in Science', *New Scientist*, 24 July 1958, vol. 4, no. 88, pp. 488–90.
113. With Peters, R. S., 'Psychology and Philosophy', in Klibansky, R. (ed.), *Philosophy in the Mid-century*, La Nuova Italia Editrice, Firenze, 1958.
114. 'Religious Propaganda in Schools', *Humanist*, 1959, 74, pp. 11–13.
115. 'Rudolf Hermann Lotze', *Encyclopaedia Britannica*, 1959 impression.
116. 'Johann Friedrich Herbart', *Encyclopaedia Britannica*, 1959 impression.
117. 'Some Implications of Analytical Behaviourism', in Krikorian, Y. H., and Edel, A. (eds.), *Contemporary Philosophic Problems*, Macmillan, New York, 1959, pp. 412–23.
118. 'What Travellers Mean by Comfort', *British Transport Review*, 1959, v, no. 4, pp. 330–2.
119. Introduction to 'Moral Issues in the Training of Teachers and Social Workers', *Sociological Review Monograph*, no. 3, August 1960.
120. 'Psychology', in Williams, W. E. (ed.), *The Reader's Guide*, Penguin Books, Harmondsworth, 1960, pp. 273–91.
121. Critical notice: Murphy, G., *Human Potentialities*, Allen & Unwin, London, 1960. *British Journal of Psychology*, 1961, 52, pp. 71–2.
122. 'The Place of Psychology in the Sciences and the Technologies', *Advancement of Science*, vol. XVII, no. 69, January 1961.
123. 'The Place of Psychology in the Sciences and the Technologies', *Embryo*, 1961, 1, pp. 7–12.

B. R. Singer

124. 'Psychology Comes to Birkbeck', *Lodestone*, 1961, 52, no. 1, pp. 3–6.
125. 'Le monde intérieur et le monde extérieur dans la philosophie de l'esprit contemporaine', *Archives de Philosophie*, 1961, XXIV, pp. 468–79.
126. 'The Aesthetic Attitude', Hussain, Fakhir (ed.), *Essays on Aesthetics*, Institute of Islamic Culture, Lahore, in the press.
127. 'Emotion and the Category of Passivity', Symposium with Peters, R. S., *Proceedings of the Aristotelian Society*, 1961–2 (in press).
128. 'Psychology and Aesthetics', *British Journal of Aesthetics*, 1962, vol. 2, no. 1 (in press).
129. 'Human Motivation in an Affluent Society', in Farber, S. (ed.), *Man and Civilization: Control of the Mind*, McGraw-Hill, New York, 1961.

THE PELICAN PSYCHOLOGY SERIES

EDITED BY C. A. MACE

In alphabetical order

130. Brown, J. A. C., *The Social Psychology of Industry*, 1954 (A 296)
131. Brown, J. A. C., *Freud and the Post-Freudians*, 1961 (A 522)
132. Cohen, J., *Chance, Skill, and Luck*, 1960 (A 482)
133. Eysenck, H. J., *Uses and Abuses of Psychology*, 1953 (A 281)
134. Eysenck, H. J., *Sense and Nonsense in Psychology*, 1957 (A 385)
135. Flugel, J. C., *Man, Morals and Society*, 1955 (A 324)
136. Fordham, F., *An Introduction to Jung's Psychology*, 1953 (A 273)
137. Foulkes, S. H., and Anthony, E. J., *Group Psychotherapy*, 1957 (A 370)
138. Hadfield, J. A., *Dreams and Nightmares*, 1954 (A 294)
139. Hadfield, J. A., *Childhood and Adolescence*, 1962 (A 531)
140. Hunter, I. M. L., *Memory: Facts and Fallacies*, 1957 (A 405)
141. Katz, D., *Animals and Men*, 1953 (A 279)
142. Knight, M., *William James*, 1950 (A 229)
143. Mace, C. A., *The Psychology of Study*, 1962 (A 582)
144. Marcuse, F. L., *Hypnosis, Fact and Fiction*, 1959 (A 446)
145. Sluckin, W., *Minds and Machines*, 1954 (A 308)
146. Sprott, W. J. H., *Human Groups*, 1958 (A 346)
147. Suttie, I. D., *The Origins of Love and Hate*, 1960 (A 444)
148. Thomson, R., *The Psychology of Thinking*, 1959 (A 453)
149. Valentine, C. W., *The Normal Child and Some of His Abnormalities*, 1956 (A 255)
150. Vernon, M. D., *The Psychology of Perception*, 1962 (A 530)
151. Way, L., *Alfred Adler: An Introduction to His Psychology*, 1956 (A 366)
152. Wynn Reeves, J., *Body and Mind in Western Thought*, 1958 (A 423)
153. Yellowlees, H., *To Define True Madness*, 1955 (A 357)
154. Zweig, F., *The British Worker*, 1952 (A 237)

METHUEN'S MANUALS OF MODERN PSYCHOLOGY

EDITED BY C. A. MACE

In alphabetical order

155. Argyle, M., *The Scientific Study of Social Behaviour*, 1957
156. Clarke, A. N. and A. D. B., *Mental Deficiency*, 1958
157. Dry, A., *The Psychology of Jung: A Critical Interpretation*, 1962
158. Eysenck, H. J., *The Structure of Human Personality*, 1953
159. Fleming, C. M., *Teaching: A Psychological Analysis*, 1958
160. George, F. H., *Cognition*, 1962
161. Humphrey, G., *Thinking*, 1951
162. Katz, D., *Gestalt Psychology*, 1951
163. Maxwell, A. E., *Experimental Design in Psychology and the Medical Sciences*, 1958
164. Michotte, A., *The Perception of Causality*, 1961
165. Notcutt, B., *The Psychology of Personality*, 1953
166. Sprott, W. J. H., *Social Psychology*, 1952
167. Valentine, C. W., *The Experimental Psychology of Beauty*, 1962
168. Vernon, P. E., *Personality Tests and Assessments*, 1953
169. Vernon, P. E., *The Structure of Human Abilities*, second edition, 1961
170. Yates, A. J., *Frustration and Conflict*, 1962