

PSYCHOLOGY AS A UNIVERSITY SUBJECT :
FOR INTEREST ? FOR ACTION ? OR FOR UNDERSTANDING ?*

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FOR this occasion I have chosen to discuss Psychology as a university subject and some of the arguments for defining it by reference to interest, or action, or understanding. In a time of ferment and dissent an address of this sort may be useful as a kind of manifesto. It may strike sympathetic chords in some, perhaps it will inform or persuade others, and hopefully in any case it will make my position clear.

I will begin by presenting the view I have of the general nature of a university subject, and later within that framework I will consider the particular case of Psychology.

Interest, action, and understanding are often presented as if they are exclusive alternatives, and to set a context I have used them in that way in the title. A little thought, however, leads one to conclude that the genuine alternatives must be expressible in some other way. In what sense is there conflict where the one person at the one time is interested, action oriented, and seeking understanding? I will attempt a resolution of this problem in terms of differential need for information of various kinds.

Promptings to seek information may be various: curiosity; need for a basis for choice amongst several lines of action; or a desire to establish some matter of fact in its bearing upon a conjecture, hypothesis, or theory. In these terms, with respect to some particular matter, one can set up three dichotomies.

About the matter in question one may or may not be curious. For example, chess is an absorbing interest both as an activity and as a subject for thought and discussion for some, while for others it is just a word. This sort of division of interest can be important for university subjects in two main ways.

Someone not curious about a subject is unlikely to lend it support if indeed he does not directly or indirectly work against it by lending his support to other subjects about which he is curious. Also within the scope of a particular subject there will be subtopics of interest to some but not to all who have any concern with it. Particular interest groups may wish to prescribe "proper" areas of study—those about which they are curious—and to proscribe other topics which do not happen to interest them at the time.

In this sense "Psychology for interest" or more specifically "Psychology for the curious" can take many forms, and for a particular interest group it will comprise

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that set of topics of interest to its members. As typically there are more than one interest groups in a situation where provision can be made for only one delineation of a subject, competition ensues amongst claims to orthodoxy. For example, in recent years politically active and vocal student groups have called for more "relevance" in university courses. Relative to the status quo they have sought to have subjects redefined in terms of their special interests or at least to relocate their centres of gravity. The criterion of relevance is urged in an unconditional way, but it is of course conditional, and any attempt so to define a university subject leads on to the question of which interest group is to prevail.

Relative to some problem one may or may not be committed to a policy bearing on its solution where the lines of action to be taken depend upon information yet to be obtained. Typically those who are "committed" or "involved" in this way take the line that the seeking of information for action has priority over other kinds of inquiry. The importance of this distinction for university subjects lies in the variation in support which might be expected according as a subject does or does not have promise for application.

In this sense "Psychology for action" comprises that set of topics inquiry into which might be expected to bring quick solutions to pressing human problems. Relative to the status quo those who want "Psychology for action" would shift the emphasis from "academic" to "applied" psychology. Again the matter of conflicting interest groups arises as there may be disagreement concerning the fact of existence of a problem, concerning priorities for attention to known problems and concerning what modes of inquiry will best contribute to their solution.

In a particular context one may or may not be seeking understanding in the sense of arriving at an explanation. For example some people devote themselves to the task of accounting for the disposition and movements of celestial objects, while others are happy simply to admire the moon and stars. It has been traditional to distinguish the critical inquiry of university work from other kinds of inquiry in just that way.

The notion of critical inquiry carries with it a particular set of values: to seek the truth; to approach questions objectively rather than with special interest or with some special action orientation; to seek explanations within a framework of determinism; to use the scientific method in seeking to establish what is the case; to encourage free dissemination of information obtained in the course of critical inquiry; and to be tolerant of what matters others choose to inquire into.

The Concise Oxford Dictionary cites psychology as the science of the nature, functions, and phenomena of the human soul or mind. With rare exceptions psychologists currently make no reference to soul. Also during the 20th century mind has been played down and major emphasis has been put upon animal behaviour as the subject matter of psychology. There has been some reaction in recent years and, while there were always some, there are now many who are concerned primarily with human mental activity. These variations suggest once again the existence of conflicting interest groups, but whereas there is conflict on matters of relevance

and commitment there is none of consequence concerning ways of achieving understanding. "Psychology for understanding" is the scientific study of the mental activity and behaviour of human beings and other animals.

Now I need to say something about the various groups of individuals who may entertain different points of view about the nature of a university subject.

It is erroneous and too simple to say that there are just three kinds of people, the curious, the action oriented, and those interested in scientific understanding. Something more like the real state of affairs is revealed by generating all possibilities from the three dichotomies. One may find the curious who are neither action oriented nor in search of understanding, or the action oriented who are neither curious nor in search of understanding, or those in search of understanding who are neither curious nor action oriented. But there are also five other cases to consider, and there are further complications which arise if one considers simultaneously the various attitudes one person may have to different parts of a subject. Thus, instead of just three interest groups there may be many more, and their constitution may change according to the particular focus of "relevance", "commitment", or "scientific concern".

Different interests—curiosity, action orientation, or the search for understanding—can lead to different accounts of what a university subject should be. If a subject must take a coherent form at a particular time, how shall that form be decided?

Arbitrary decisions are not free of difficulty. Suppose, for example, that recourse to tradition were taken to justify the primacy of one interest over another. Such a ground will not necessarily be generally acceptable in a conflict of interest, and if there is a struggle it becomes an accident of politics as to which interest group prevails and in consequence as to which form a university subject then takes. For this reason I prefer not to assert unconditional priorities for interests.

The alternative is to acknowledge the legitimacy of different interests *ipso facto*. Indeed to be consistent one must do so since one is rarely single-minded, but rather, sometimes curious, sometimes action oriented, and sometimes in search of understanding. The question then is how can all of these different interests be met?

I believe that the solution is to have each legitimate interest served by its own appropriate institution. Which institutions then are appropriate to the needs of the curious, the action oriented, and those who seek understanding? I will argue that it is the university which should serve the last-named group, and that there are various possibilities for the others.

I should state my own commitment: it is the promotion of critical inquiry. I believe that a university should give priority to that interest because that is a university's traditional concern, because critical inquiry is the activity which most readily distinguishes a university from other institutions, because without university support there will be little or no critical inquiry, because there exist other institutions which either serve or could serve other interests, and because any change

from its traditional role, primarily to meet the interest of the casually curious or to support the implementation of particular policies other than the promotion of critical inquiry, is inimical to such inquiry.

Firstly, on the university's traditional role. It is true that a university is a complex entity which can serve many interests besides critical inquiry. Given that much time is devoted to teaching within universities, might it not be said that the argument from tradition points more towards their serving the curious? The answer is that teaching need not be antithetical to inquiry. Ideally, teaching supports inquiry. Being the context in which unsolved problems become apparent, it can provide guides to future inquiry. It facilitates the free flow and dissemination of knowledge. Through it new generations are trained in the discipline and espouse the values of critical inquiry. It can also create a social climate favourable for the continuance of such activity. On the other hand, especially in recent years, university teaching has increasingly taken on a service function to the detriment of research. In this there is the danger that university subjects shall be defined in the terms urged by the curious or the action oriented. Despite the plurality of functions, and despite in some cases the relegation of research to a position secondary to teaching, it is, however, the case that universities are the institutions which have supported and are currently equipped to continue support of critical inquiry.

Secondly, on the existence of institutions which can serve interests other than critical inquiry. Given the ideal balance between research and teaching, a university can cater for a range of curiosity. Also, since research findings can sometimes be usefully applied, a university can serve some of the interests of the action oriented. Indeed, it can be argued that it should make such provisions, insofar as they contribute to the support of critical inquiry. Beyond this point, however, where the demands of the curious and the action oriented become so heavy that there is little time for anything else, the university should not be required to serve interests other than inquiry.

How then shall the excess demands be met? For this one looks to other institutions. There are political institutions and governmental agencies whose constitutional function it is to be engaged in programmes of social action. It is their role to formulate policies, to obtain the resources for their implementation, and to put them into effect. In most cases objectivity in the exploration of problems and in the formulation of possible solutions will be desirable; but that is not an argument that such action oriented inquiries should be conducted by universities. The desired result can be obtained by using appropriately trained individuals, be they full-time staff, or staff shared part-time with a university, or university staff working in their capacity of private individual. General educational and vocational interests can be met by the many non-university educational institutions; and there are social clubs for the idly curious. Part of the argument of course has to be that such institutions should maintain their appropriate identities and functions. It will not serve the interests of the curious or the action oriented if,

for example, a college or an applied research unit should seek to take on the traditional functions of a university.

I am not saying that there are no significant social problems nor am I denying that many of them cry out for attention. There are wars, injury and death on the roads, poverty, pollution of the environment, and so on. Neither am I arguing that the university man should not concern himself with political questions or be curious about subjects into which he is not directly inquiring. Clearly each individual in his private capacity decides for himself. My contention is that there are institutions other than the universities which can meet general educational and vocational needs or through which social action can be taken, in which case the universities can and should be left to their own proper concerns.

Thirdly, on activities inimical to critical inquiry. I distinguish the university as an entity from its personnel in their individual roles as citizens. In several ways it is inimical to critical inquiry for the university as a corporate body to cater primarily for the curious or to align itself with any particular social policy other than the maintenance of its traditional functions. Perhaps not necessarily but nevertheless in practice the essential discipline of critical inquiry gets lost in superficial presentation of subjects. Very important also is the matter of allocation of resources. If manpower, equipment, and so on are directed to the tackling of immediate and current problems, then they are just not available for the support of critical inquiry over a longer time span. Another aspect of action orientation is political commitment. Apart from the dilemma posed for the individual by a demand for one or another alignment, there are special problems for an institution. Institutional alignment disregards the diversity of opinion across its personnel and can create internal difficulties. Also, political action invites political reaction and in such a situation there is a danger that critical inquiry will be suppressed.

To sum up, I take the university's primary function to be the support of critical inquiry, and I believe that it should hold to that purpose leaving the support of simple curiosity and social action programmes to other educational and political institutions. In this way all legitimate interests can be served.

This indicates my position on what a university subject should be. There will be a traditional subject matter, a body of knowledge and its growing points. The approach to the subject will be objective and critical. There will be tolerance of the interests of individuals within the limits of the accepted disciplines. There will be free exchange of information. Within that framework I can now talk specifically about Psychology as a university subject.

In this task I need to comment separately on what might go into courses to be taught and what topics might be taken up in research.

Concerning the teaching content of Psychology as a university subject, I am suspicious of the urgings of the simply curious for the inclusion of what they call "relevant" material. In my opinion, material is relevant provided that it falls within the scope of the definition of Psychology proffered above. Thereafter, if there is

too much ground to be covered, one must set priorities in terms of the requirements for logical development of the subject. Also, I am reluctant to go along with primarily action-oriented programmes, for reasons already stated. On the positive side I believe that a Psychology course should include both content and method as follows.

The content will include current knowledge of theories and findings concerning mental activity and behaviour.

As a typical student spends a relatively short period of his life working at formal studies, whereas the body of knowledge about a subject will continue to change and develop, it is important that he should acquire not only a current knowledge of content but also a capacity to continue his education independently. He needs to know how to go about the task of inquiry, and for this he must acquire the disciplines of the subject. A good background will be provided by independent study of other subjects like philosophy, logic, mathematics, statistics, and computing. To learn about inquiry within Psychology in particular he will also need to see their applications. This is the reason for including within the Psychology course itself, discussions of scientific method, statistical inference, the design of experiments and the analysis of the data which they yield, the logic of measurement, measurement techniques, mathematical and computer models, and so on.

While the general range of content and method topics remains fixed some flexibility in treatment and emphasis is desirable. From whence might come suggestions for variation? In its ideal form the teacher-pupil relationship is asymmetric: the teacher has knowledge which the pupil lacks, and the former imparts it to the latter. Not necessarily, but usually, the teacher is older than the pupil and in our context has a formal university designation. Sometimes this leads to confusion of the incidental asymmetries of age and appointment with the intrinsic asymmetry of the teacher-pupil relation. Because some older people can become forgetful and lose touch with their subject, some younger people may fall into stereotyped ways of thinking about "oldies" as set in their ways, closed in their minds, "past it". It can also happen that some older persons believe students to be necessarily less well informed simply because of their youth. On balance, because the university teacher has had a longer period of training and has worked fulltime at his subject, it is likely that more often than not and on a wider range of topics he will be better informed than his student. As this will not invariably be the case, I believe it to be important to leave ways open for the receipt of suggestions about course content from various sources, be they students or other university teachers. It seems obvious that the guiding principle should be the objective merit of an idea and the cogency of supporting arguments rather than the personality, status, or seniority of the originating person.

Whereas the content of Psychology courses is a matter for discussion and agreement amongst interested parties, choice of topics for research is, I believe, much more an individual matter. No university teacher can personally engage in detailed research into every topic included in the courses which he teaches. It is expected that his approach to the literature and its presentation will be critical and

objective, but he will make a personal contribution only on a limited set of topics and some of these may not enter into courses which he teaches. I believe that the closer the connection between one's research and teaching the better for each. Teaching is enlivened and new lines of research can be developed. Thus a case can be made in general for the university teacher engaging in some individual research, but I believe that the choice of particular topics should be left to personal interest.

While I am reluctant to urge upon others particular priorities for research in Psychology, I can state my own interests. In this there is need for care. Some psychologists keep their own counsel, but others make implied criticisms, or explicit criticisms, or go so far as to contend that certain lines of theorizing and research are a waste of time. It is almost an implied criticism of the work of others to put forward one's own framework of thinking and choice of problems for investigation. I hope that any implied criticisms which I might make are limited by the following grounds.

Differential experience over 25 years has led me to my current research interests. Where lines of inquiry proved unrewarding I did not pursue them further, and I am giving my energies now to modes of thinking, methods of analysis, and empirical studies which seem to me to have promise for explanation and through it for understanding of psychological events. There are objective guides: hypotheses can be shown to be imprecise or false; theories can be shown to be incomplete, or inconsistent, or inadequate to account for some order of complexity; methods can be shown to be inaccurate; and so on. I do what I do in the hope that my current research is less subject to such difficulties than some other work I may have done or might otherwise be doing. I am critical of work fallible in those ways, and I believe that more often than not it is a waste of time to go over previously well trodden ground, but they are the limits to intolerance.

Subject to the application of the same strictures to my own work, I value the freedom to make my own choice of problems for study and methods for their investigation. I urge this freedom both for the university teacher and for research students.

The time limits of this occasion prevent me discussing in detail any one of my particular pieces of research. Instead I will describe the general context within which I am studying human cognitive processes.

In a remarkable paper entitled "Computing machinery and intelligence" published in *Mind* in 1950, A. M. Turing gave an entirely new direction to psychological theory and research. I believe that substantial progress has been made and will continue to be made through development and application of his ideas.

First he described a methodological device which was to enable him to recast the question posed in the title of his paper. He called it the "imitation game" and it is now known more commonly as "Turing's Test". Imagine three people able to communicate with each other only by teletype. There is a man and a woman and the task of the third person, the interrogator, is to identify which is the woman. There is no requirement that either the man or the woman be truthful in their answers to questions put to them via the teletype. The man wins the imitation game

if the interrogator picks him or is unable to decide which is the woman. In its extended form the game can be played again and again, with reasons for loss being explained to the man after each losing round and with the interrogator free to vary his questions.

Turing applied the device to the question of machine thought by making the following substitutions: machine for man; generic human being for woman; scientist for interrogator. More explicitly the machine is a realization of some theory (as via a computer programme). The machine wins the imitation game if the interrogator judges its behaviour to be human, or is unable to decide. As an example of dialogue which might lead a questioner to conclude in such a situation that a machine can think, Turing set down the following:

Q: Please write me a sonnet on the subject of the Forth Bridge.

A: Count me out on this one. I never could write poetry.

Q: Add 34957 to 70764.

A: (Pause of about 30 seconds, then) 105621.

Q: Do you play chess?

A: Yes.

A: I have K at my K1, and no other pieces. You have only K at K6 and R at R1. It is your move. What do you play?

A: (Pause of about 15 seconds, then) R-R8 mate.

Here, if the machine loses the round, the theorist can modify the programme for the next play. If it wins the interrogator may seek a replay with new questions. In this way the complexity and sophistication of the theorizing and its programme realization can develop in the expectation of convergence upon satisfactory explanation up to whatever demands have currently been set by the interrogator.

Out of Turing's scheme have developed both the engineering technology of "artificial intelligence" and various approaches to computer simulation of psychological processes. The methodology is sufficiently general to accommodate different kinds of theories. In practice, however, the theories have been ones concerned with process and their terms have been ones borrowed from information science.

In these developments, a second idea presented by Turing in his 1950 paper has not been given the attention it deserves. The very fact of its complexity makes adult human behaviour difficult to explain. Turing recognized that the task is made more difficult by ignoring the adult's developmental history. Thus, said Turing. . . . "Instead of trying to produce a programme to simulate the adult mind, why not rather try to produce one which simulates the child's. If this were subjected to an appropriate course of education one would obtain the adult brain." Many failures in early rounds of the imitation game will be due to the ignoring of this advice. Indeed many simulations amount to realizations of particular problem-solving routines without regard to the way a human might acquire them and without provision for their adaptation to new situations.

The third main contribution in Turing's 1950 paper is his listing and discussion of a range of *a priori* objections. He knew that the real test of his scheme would be

achievement, but he was writing in a period before the computing "hardware" and "software" needed for implementation of his programme was available. Accordingly he took the negative course of rebutting contentions that such a programme could not succeed. In the years since many of his anticipations have been met. There now exist devices (programmes) which play games, recognize patterns, form concepts, solve problems, and so on. Most attention has been given to cognitive processes, but action has not been neglected. There is, for example, one device with a television camera "eye" which upon instruction can move its mechanical arm to rearrange the location and placement of objects arbitrarily arranged in its "visual field". Anyone dubious about yet other applications, such as accommodating feeling and emotion, should read Turing's discussion of "the arguments from various disabilities".

It must be said that theories realized in artificial intelligence devices and computer simulations of psychological processes are not above criticism. This fact should, however, be evaluated both relatively and absolutely. With respect to the latter it should be noted that, although the imitation game allows repeated plays, so far evaluations of theories are available only for the early rounds. With respect to the former one should compare process theorizing—whatever its inadequacies—with those forms of psychological theorizing which are uninfluenced by the new ideas which have come with digital computing. Turing's Test is severe, and were it to be applied equally to other modes of theorizing it is doubtful that they would fare any better. Such theories as have been examined in this way have been shown to fare worse.

The advantage goes to process theorizing because of the following requirements for programme realization of a theory. One must be precise and complete in one's theorizing, at least within a limited context. Otherwise there is no "effective procedure" for a programme, and if a programme does not run the simulation fails *a priori*. If the programme runs the theory is logically consistent. If one has got this far then there is the further advantage of being able to explore systematically and precisely the implications of the theory by running the programme under various conditions. In principle these logical features are not denied to other forms of theorizing, but in practice they are rarely, if ever, used. On the other hand with process theorizing they are used all the time because they form a necessary part of the logical structure of the theory.

By formulating process theories which allow for the development of complexity through experience, and by working within the rules of the imitation game, one has the potential for building working models which mirror human mental activity and behaviour. By such means one can arrive at explanations and understanding.

From my earlier remarks and my evident interest in working models for mental activity and behaviour you will by now have concluded that my preference is for "Psychology for understanding". That indeed is my choice amongst the various possibilities for Psychology as a university subject.