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**FUTURE PERSPECTIVES  
ON THE UNIVERSITY  
AND THE COMMUNITY**

The subject I am to discuss in this paper is so extensive that I am obliged to restrict myself to a specific problem-area. This restriction, however, is not an arbitrary one. It is guided by the altered place and function of modern science in our highly developed civilization. In this address emphasis will be placed on the position and function of science, rather than that of the university. This shift in emphasis is not coincidental. To gain insight into the future of universities, one should have clarity about the present and expected future rôle of science in our society.

For the purpose of this address, I intend to proceed as follows:

- \* Firstly, determine the position and rôle of science in society,
- \* secondly, indicate, according to this rôle, the mutual and unavoidable interdependence between science and politics, and
- \* finally, remark on the implications this would have for the university.

**1. The position and function of science in contemporary society**

The twentieth century is without any doubt the age of science and technology. Present-day society is, in fact, to a great extent the product of science and technology, a society in which science has lost its "social innocence" to the extent that it cannot claim neutrality towards a development for which it was and still is responsible. The reality facing us today is that of science becoming increasingly "socialized" and society itself becoming "scientized". It would not be an exaggeration to claim that for his mere survival, man has become dependent on science and technology.

As recently as a century ago, science stood at the periphery of so-

cial and economic events. As such it did not have any remarkable influence; especially since science was practised for the sake of knowledge and only that. In fact, it was assumed that science was to be practised primarily for the sake of science, to the exclusion of everything else.

The situation has since, however, changed radically: science has become an available commodity, a ready instrument of service in everyday life, to the extent that one can today speak of a change from science as *theoria*, i.e. practice of science for the sake of knowledge, to science as *praxis*, i. e. practice of science as a service to human existence. This becomes increasingly apparent when one considers the “practical side” thereof, i.e. technology, where science has left the confinements of the laboratory and armchair and finds itself in the centre of society. Science today is not only confined to something as mundane as toothpaste or as essential as war-materials, but has become an undeniable and decisive determinant in man’s existence. In our so-called “planned society” science has become one of the central driving forces in the socio-economic and social processes of the world in which we live.

Science and technology have changed our “natural world” into an artificial “selfmade world”. “Free nature” has disappeared behind a barrier of glass, plastic, steel and concrete (Roszak, 1973: 3ff). It is for this reason that we nowadays are compelled to preserve in nature-reserves anything in nature which still remains untouched by man’s destructive hand. It is an indisputable fact that our present physical environment is not only and primarily the result of science and technology, but that it is also maintained largely by science and technology. Whereas one could speak in past eras of our history of a “hunting culture” or “agrarian culture”, because hunting or agriculture determined the structure of those societies, we can instead today speak of a “scientific culture” (Snijders, 1971:53; Schelsky, 1961), albeit in its initial stages.

Considering the implications thereof, we have to conclude that a so-called neutral and “disinterested” science has nowadays become a political factor and instrument for power of no mean size. It was for this very reason that H.G. Wells could declare that the history of man had become a race between knowledge and catastrophe. Without any doubt knowledge has become an instrument of power – a fact illustrated by the strong correlation between the “knowledge explosion” of recent decades and the rapid industrial and economic developments of modern times.

The “scientization” of our society and the “socialization” of science have turned knowledge into an important tool of control, influence and manipulation –, and that not only of nature, but also of man. This state of affairs calls for a radically revised look at the position and rôle of the academician and scientifically trained person. Formerly, the concept of “disinterested science” implied a rigid division between the practice of “pure” science on the one hand, and the practice of more mundane and “purposeful” activities like politics on the other hand. This division of rôles was supported by a strict institutionalized division which demanded of the academic that he confine himself exclusively to “theoretical considerations” and leave “practical politics” to those with “experience” – whether they were equipped or not.

This situation has changed radically. According to Dippel (1962: 62), the race is on for the recruiting of scientists, for practical results and for influence on scientific resources: the universities and other institutions of higher education. This race extends itself to influence over the shaping of scientists and the nature of the results, a state of affairs confirmed by the well-known Steelman Report of 1947. According to the opening remarks of this report the safety and the prosperity of the United States depended as never before on the rapid development or expansion of scientific knowledge. The latter has come to be regarded as a prime factor in the safeguarding of the existence of the United States, to such an extent that the laboratory was regarded as the first line of defence and the scientist an indispensable com-

batant. It would seem as if the romanticized conception of the scientist as being free from social strictures and involvement has become a utopian delusion. In spite of the problems inherent in this situation, there are positive elements involved, viz. the awareness that scientific objectivity does not necessarily imply indifference and independence but that the scientist can maintain his scientific and academic integrity without sacrificing the opportunity of assuming a critical attitude towards social and political realities.

Thus science has today become an instrument of power and has established new dependencies. The most important of these is the mutual dependence of science and politics.

## **2. The mutual dependence of science and politics**

It has become increasingly accepted in our scientifically orientated culture that politics has become largely dependent on technological insight and scientific advice and information. The practice of politics has developed to the point where more is demanded than mere instant solutions based on already experienced situations or emotionally cosseted ideological ends. It demands the formulation of problems, the devising of strategies to solve them, in the light of expected situations and properly planned means. In this respect the academically trained expert has a very important contribution to make.

In the context of my argument, the concept "politics" should be interpreted broadly. It not only refers to the relationship between states, but also to the organization of human life within the state, an organization which is ultimately responsible for the socio-economic and social set-up within a particular state. It includes the policies that are followed and the ends visualized in order to regulate and structure human relations and the relation in which people stand toward their environment and the powers that be. The question arises: to what extent does politics,

in this sense of the word, rely on science?

As a result of the infiltration of science into just about every facet of our lives, science itself, and not merely its results, has become an important political consideration. It has become, both implicitly and explicitly, a determinant for the policies and strategies characterizing a culture. For this reason, concepts such as science, politics and the future cannot be seen in isolation any more. It is therefore wishful thinking to regard politics as the sole "property" of dedicated party politicians or ideological activists. For, while the so-called "practical politicians" are ever more determinedly involving themselves in the changing appearance of our world (a change occasioned by technological advances) they are increasingly faced with the conflicting fact that their insight is growing more limited and that they are becoming increasingly dependent on the advice of scientifically trained experts.

Alexander King (cf. B.C. van Houten, 1970:254 ff.) has pointed out that the dependence of politics on science establishes itself in seven areas:

- (1) The "scientization" of war.
- (2) The way in which a state can demonstrate scientific and technological advances for the sake of its own prestige.
- (3) The shrinking of the world as a result of ever more effective and revolutionary developments in communication techniques.
- (4) The growing influence of science on economic growth.
- (5) The promotion of international co-operation as a result of the ever-increasing costs of scientific research.
- (6) Changes in daily life resulting from the ever-expanding growth in standard of living — as a result of scientific developments.
- (7) The higher demands exacted from education.

This interdependence of science and politics implies a radical reorientation of traditional attitudes and convictions. As far as politics is concerned, the reorientation is essential because it is no

longer possible to direct politics exclusively from the confines of the Cabinet or of Parliament. The reason for this lies in the fact that local and international events have made long-term planning imperative. This planning cannot be effected only at parliamentary level. It has to be done in co-operation with extra-parliamentary experts. The demand by politicians for "experience" and "prophetic insight", has become a relative matter because of developments within our "science-orientated culture". It is becoming increasingly apparent that only those who are experts in specific areas, such as education or economics, and who can cope effectively and responsibly with specific situations, can expect the necessary public acknowledgement. The concept of the "all-rounder", as developed especially in conjunction with the British parliamentary system, and which gave rise to the practice of the interchangeability of portfolios, has become functionally less acceptable in our "science-orientated culture" and will become even less so in future. Whether politicians want to accept it or not, politics has gained the added dimension of subject expertise — a dimension which will increasingly be demanded of the responsible politicians.

Because the fundamentals of our life-style, its very nature and continuation, have become dependent on science, politics has by the same token become dependent on scientifically-based advice and information when it comes to matters like policy, planning and projections of the future. This dependence can obviously not be limited to "technical" matters, such as the building of bridges or the solution of monetary questions, but also includes socio-political and social issues such as the building of bridges between various population groups and the design of strategies and structures which would honour human dignity. That politicians are invariably agreeable to accepting expert advice on technical matters, but follow their ideological noses, proverbially speaking, on matters of socio-political issues, could well be termed a tragedy. The result has been, regrettably, that many of their findings on sensitive socio-political questions have been sorely lacking in judgement. It often happens, of course, in South Africa, that

members of the university corps are called upon to constitute commissions of inquiry in various fields. The time has probably come, not only to call upon academic experts to give advice, but also to include them in matters of execution. It would have the advantage of inspiring a sorely needed sensitivity in the proffering of expert advice in the practical political arena.

As a result of the “scientization” of the most important processes and areas within contemporary society, the problem areas, functions and responsibilities of the modern politician have increased both quantitatively and qualitatively. They have increased quantitatively in the sense that he is called upon to make decisions in more areas than before and that more issues require his attention. Qualitatively there has been an increase as a result of the increasing complexity surrounding political decision-making. The majority of problems confronting contemporary politicians, cannot merely be classified as simple political issues. They also involve other “layers” or “strata”, such as technico-organizational, economic and strategic. Because “stratified issues” cannot be viewed summarily as simple problems, the politician is of necessity dependent on experts in analyzing and solving complex problems. Should he fail to consult them, he would either stagger from one catastrophic decision to the other, or become the rubber stamp of a bureaucratic apparatus.

The rôle that science can assume, is obviously not confined to problem-analyses and the making-available of advice and information to the politician: it can also extend itself to the levels of communication and democratic opinion forming. This aspect is given special emphasis by, among others, Jürgen Habermas. He places a high premium on the principles of interaction and dialogue as a basis for democracy and concludes as a result that science and the universities should act as channelling agents of information on the public forum. Incorrect and inadequate information is, after all, one of the most effective obstacles to political maturity and democratic opinion making. Important information is far too often withheld from the public in the guise

of so-called public interest. This procedure not only sabotages democracy, but necessarily contributes to political immaturity and apathy. In an attempt to bridge this communication gap effectively, universities should increase the search for effective means of communication.

Practitioners of science – especially philosophers – will have to demonstrate their expertise and insight by “translating” their terminological jargon into a language which would be intelligible to the wider public, especially when it concerns information important to democratic opinion making. The myth that science should necessarily be unintelligible to the layman, has become intolerable snobbery in our emerging science-culture.

From what I have said so far it need not necessarily be deduced that I am of the opinion that politics could be completely “scientized”, a point of view supported by technocrats. This, however, is a matter which cannot be explored in detail in the limited space at my disposal. Politics has, indeed, to a great extent and in important spheres, become a matter of scientific planning. It does not seem possible for science to alleviate, let alone eliminate completely, problems of political decision making. Science could, however, delineate political problems more clearly and by so doing permit a streamlining of decisions and solutions. This, of course, does not necessarily eliminate political decisions, as will appear from the following example. The present energy crisis is a political dilemma of universal magnitude. Scientists in various countries are at this very moment struggling with this problem and searching for alternatives. The politician will ultimately have to make a choice from among the array of alternatives. Though his scope of decisions has broadened, it has not become less complicated or merely “technical”.

Of course it is not merely a matter of politics becoming dependent on science – the reverse is also true. In our “science-orientated culture”, von Humboldt’s ideal of an autonomous science,



with regard to which the state can have at most a formal structuring function, has apparently become an impossibility. In practice it is becoming ever more essential to involve the state in priority planning which will ultimately be of influence on the development of science itself. Karl Acham (1972:44 ff) writes as follows on this matter: "In future, more than ever, we will have to keep the following state of affairs in mind at universities and other institutions: research has become a 'politicum' of major importance. And this is true in more ways than one: Firstly, modern research has, because of its magnitude, the expenses involved in its projects and apparatus required, exceeded all bounds of normal investiture. Secondly, efforts to eliminate purely theoretical research in favour of practical relevant research and to understand research as a direct, economically relevant production force, have been increased".

It is an indisputable fact that research – and I should add also in the social sciences and humanities – has become prohibitively expensive. The vast volume of research, especially that of an experimental-empirical nature, has become an onerous financial burden to universities – the consequences of which have as yet not been fully realized. It is a fact that the traditional ideal of university autonomy and academic freedom is being threatened by the emerging reality of a "scientized society". The well-known Senator Fulbright (1968:41) contends that universities who involve themselves in topical problems of government, will acquire an added commercial dimension and lose their typical educational character. According to him the natural or exact sciences are being favoured at the expense of the social sciences, and in the latter case emphasis on the behavioural school will increase at the expense of a more traditional and more human approach.

The implications of the mounting expenses involved in empirical research specifically, are becoming increasingly clear. One of these is state involvement in determining priorities of science, not

only because of financial and co-ordinating considerations, but against the background of differing aims which will in future be relevant to scientific research. This prompts the argument that modern science, because of its function and position in society and as a result of the technological orientation of our society, possesses socio-political and economic implications which can no longer be ignored. H.P. Bahrdt (1964:176) is of the opinion that the most important implication of science and technology's infiltration into almost all facets of society, is that the rôle of state authorities has changed from that of patron of the arts to that of policy-maker.

This change is of fundamental concern to universities. It emphasises the importance of an effective and comprehensive science-policy. This policy cannot be determined by the state solely on autocratic lines, but will have to be formulated by co-operative interaction between state and university, and possibly additional interested parties. The importance of such a policy is intensified as it becomes progressively obvious that society no longer regards universities as "untouchable", but does in fact cherish justified expectations. Personally, I regard the degree to which universities can cope with these expectations and demands as their greatest single challenge. The whole question of the university's relevance is intimately involved with this challenge.

The university in general and the scientist in particular can today no longer lay claim to a traditional independence and complete autonomy in determining science-policy. Therefore, university authorities will have to secure the necessary co-control and responsibility when science-policy is determined by the state, otherwise they run the risk of being demoted to "choir-boys" of commerce and "public servants" of the states.

The fact that the potential of scientific and technological developments is increasing more rapidly than the financial means to exploit them, emphasises the topicality of the problem. Of necessity this demands a choice, and invariably this proves to be

a political one. As long as communication between scientists and politicians remains at the present inadequate level, this problem cannot possibly be solved satisfactorily. Therefore it is regrettable that serious obstacles are experienced between scientists and politicians on the level of communication, especially where social scientists are concerned. And sneering references locally to "academics", are certainly not solving the problem either. For this and other reasons, relations between scientific-technical possibilities and political realities remain static and defective, a problem aggravated by the inability of scientists to reason "politically", or to "translate" their insights and results into socio-political terminology. This, of course, by no means implies a politicization of science in a limited sense of the word, rather, to quote C.A. van Peursen (1970:254): "Science should maintain a relative independence, in order to ensure an equilibrium. Broadly speaking, politicization is inevitable. Science has to function within the total framework of society's policy-making apparatus".

The adaptation awaiting scientists as a result of our "science-orientated culture" is a fundamental one. Many scientists still show a "natural resistance" to the necessity of a science-policy. The view is held that scientific research is the "prodigy of the unbounded mind" and that research, consequently, cannot be done within the confines of policy, planning and organization. This conviction has led many to adopt an attitude of passive resignation, something which is justified by the excuse of "the powerlessness of the spirit in these evil times".

I have no doubt that scientists should be delivered from this self-imposed martyrdom in order to participate actively and critically in the making of policy for science and society. Instead of gloomy predictions from an ivory tower on "the university's plight in a consumer society", serious thought and consideration should be given to ways and means by which universities could steer the direction research should follow and the aims to be considered in determining science-policy. This, as a matter of fact,

holds the promise of new dimensions and functions for universities. In closing, I would like to draw attention to some of these.

### 3. The university and the future

The view that a mutual dependence has developed between science and politics, and that, as a result, the scientist has acquired an added and inevitable social responsibility, has important functional implications for universities in a social framework within which science and technology constitute the guiding elements. Parallel to the division between theory and praxis on the one hand, and science and politics, which developed in terms of the traditional ideal of knowledge for the sake of knowledge on the other hand, the fact remains that on an institutional level a similar rigid division exists between universities and political institutions. In keeping with this division, and in view of the principle of a value-free science, politics became a university subject —, but as a neutral and apolitical political science. In return for this neutrality, the university was granted autonomy, a state of affairs which prompted B.C. van Houten (1970:260) to remark that the university's autonomy depended increasingly on a tacit consensus between the state and the academic corps on the question of the divisibility of science and politics, that is intellectual spirit and the phenomenon of power.

The concept of science that accompanied this traditional idea of an "autonomous" university, and which determined the relation between universities, the state and other institutions of society, has been overtaken nowadays by the emergence of our science-culture. This is supported by the fact that at present universities are having to yield to the increasing demands of government and society in return for financial assistance. It is a matter of grave concern that basic research at university level is being impinged upon and universities are in danger of becoming conveyor belts of commerce and industry. This unfortunate state of affairs is illustrated by the fact that in planning and financing of research-

projects the “practical benefits” and “utility value” thereof become the main criteria. For this very reason academics who are closely involved in processes of production acquire, so to speak, an important market value. How should one react to this state of affairs? The founding of a university which would function independent of national interests, as suggested by Staal (1970), is not the answer. A preferable solution would be a movement, initiated from within university circles, which would point out the necessity of serious discussion on tendencies and priorities of society as a whole, and the social values involved in present-day developments. G.v.N. Viljoen (opening address, RAU, March 4, 1974) argues that university members should not only be loyal to their fellow man and society, but should also feel compelled to judge and criticize their actions and intentions. He should serve his community as touchstone, rather than amplifier; not be a mere sounding-board or echo slavishly the current ideas his superiors and leadership happen to support. He should, with the necessary tact, understanding and loyalty, ensure that all aspects of contentious matters are given serious public consideration. By an ostensibly dissenting and questioning attitude, academics can ensure a higher degree of responsibility in decisions made by their society. To foster this involvement of the university in general and academics in particular, it seems to my mind a matter of urgency to introduce interdisciplinary courses at university level on matters relating to our social, political and economic future.

This fact has added a sort of “radar” activity to the existing function of the university, to quote C.A. van Peursen (1967: 5): “The university should fulfil, to an increasing extent, a sort of radar function in a rapidly changing society. It should alert and educate the public on matters still to come. Science cannot be divorced from morality. As yet unthought of possibilities should be scanned from the proverbial radar post”. In short, universities will have to step-up reconnaissance activity marked by decisions of an ethical character, apart from their usual activities of transfer, regeneration and application of knowledge. Accepting the

responsibility for reconnaissance, does not necessarily implicate universities in decisions of a moral, social or political kind. It implies, above all, that the university will honour its educational charge, by educating people towards responsible decision-making.

Besides having a radar function, or perhaps because of it, universities will have to provide more deliberately for permanent education in our science-culture. A typical consequence of a science-culture is that human life can no longer be divided into a period of learning and a period of working. Man must learn while living and working, a circumstance which originated because of a rapidly changing world in which knowledge becomes out-dated within a short space of time. The urgency of this problem is characterized by a distress-call recently from a minister of religion, pleading in favour of refresher courses at faculties of theology. Permanent education is to my mind a matter of necessity. Such an endeavour by universities would have the added advantage of supplying the university with the necessary feed-back by alumni on the effectiveness of its teaching programme and techniques. The question of feed-back as an aid in the evaluation of teaching programmes, techniques and subject matter, has long been neglected in South Africa. It is characteristic of our older universities especially to cling rather fanatically to tradition. Typical of a science-culture is its leaning towards the future. This implies that universities should stimulate ingenuity and creativity rather than merely keep up traditional techniques and knowledge – which might, in any case, become obsolete within a short space of time. In present-day society, the student who displays ingenuity and creativity is better equipped to cope with rapidly changing situations than the one who is only textbook trained. This student is in danger of being relegated to the academic garbage pile, textbook and all.

In our science-culture the university thus faces real challenges and special problems. These are not necessarily insurmountable. Rather – they open new horizons or dimensions for man's questing spirit. It cannot be denied that education is, par excel-

lence, a field in which we already have a finger on the pulse of the future. In this regard Georg Picht quite fittingly points out that what is at present being done in schools and universities will determine, qualitatively and quantitatively, the possibilities open to man in twenty years' time. According to Picht, there is no field in which our actions and inactions, our commissions and omissions can have such a profound influence on the destiny of mankind, than that of education. I would like to express the hope that, "qualitatively and quantitatively", the PU for CHE will contribute to what man will have and be in twenty years' time.

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