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Orkin, Mark; Nicolaysen, L.; Price, Max

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UNIVERSITY OF THE WITWATERSRAND

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Title: Models for our University's Development, Recognising its Individual Socio-Economic Setting.

by: Mark Orkin, L Nicolaysen & M. Price

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Models for our University's Development, Recognising its Individual Socio-economic Setting

M. Orkin, Professor L.O. Nicolaysen and Max Price

Introduction

This working paper has been prepared for Working Group B by Professor L. O. Nicolaysen (Geophysics), Mark Orkin (Sociology - Convener) and Max Price (SRC). Successive drafts elicited some invaluable corrections, and a range of comments. We have incorporated these as far as was consistent with the overall direction of the argument; when this was not possible we have noted the most important points of disagreement. Where the entire Group did agree was on the need for the kind of issues raised here, perforce in abbreviated form, to be more fully treated in the course of the University's current planning. The University needs to make a more comprehensive scrutiny of the changing socio-economic state of the country, and the particular place of the University in that setting; and it must debate and then establish its appropriate response to the urgent tasks looming ahead. Most of the Working Group felt that the University should undertake and complete this venture during the next twelve months. In doing so, it should draw on the insights and experience available within departments; also commission special enquiries into relevant topics; and continue to involve students and lecturing staff in both the enquiry and the consequent policy-making.

1. OUTLINE

We note some salient aspects of the society surrounding the University. There are some changes in this society that are almost inexorable. These changes are so important that, if the University wants to play a constructive part in them while promoting those of its present features that are desirable, it will have to plan for altering its character significantly.

When we look elsewhere for existing university models which could guide us, we find little that is helpful. We propose instead a basic outlook: Wits wishes to participate in the future of S.A., rather than be dragged through it. This outlook allows us to formulate some aims for, and consider some constraints on, the University, in terms of which we develop some broad features for the future structure of curricula, professional degrees, research orientation and interaction with its community.

2. FEATURES OF ANY SOUTH AFRICAN FUTURE

South Africa's future may take several forms, but all of them must begin from certain brute facts:

a) The races in S.A. are now divided by staggering economic and educational inequality: average white per capita income was R182 per month in 1975 and black, R12,50 - a ratio of 14:1. There is a further, widening division between urban and rural blacks - the income ratio has increased by 18% over the last decade, up to 2.8:1. The white population is largely developed, entrepreneurial, and in close economic contact with the rest of the world. The black population is less developed.

b) A vast population explosion is already irreversibly under way. The natural rate of increase of the black population is twice that of the white, even though the black infant mortality rate is five times higher (94 vs 19 infants per 1000 from 1970-5). So by 2000 there will be 7m whites (provided net immigration keeps up), 37m blacks and 5m others. Blacks will then outnumber whites in ostensibly "white" S.A. by 3:1, yet 60% of blacks will still be on the land.

c) Urbanization, involving a change in living standards and a greater likelihood of education, significantly reduces the black urban birth rate. But there is no comparable effect for the rural group, where any increase in overall income is offset by the extra mouths to feed, so that increase in per capita income (which is important for population growth rate to slow) is not achieved. Thus a vicious circle of mutually reinforcing poverty and fertility is already in motion in the rural areas.

d) The proportion of youngsters in the overall black population is higher than in the white (44% vs 31% under 14 years).

e) Total black unemployment is estimated at between 15 and 20% over the last decade (e.g. Prof. Spandau's est. of 1.5m in a black workforce of 10m in 1977). The highest percentages are found among those in the 16-24 year old category, and among those with no education or only

primary education. Evidently, then, the tendency will continue that the highest unemployment rate is borne by young black school leavers.

f) The government's Economic Development Programme for 1976-8 stressed that a minimal annual growth rate of 5% was necessary to meet the employment demands of the rapidly growing (2.7% p.a.) labour force. These are long term figures, whereas the growth rate of the economy can fluctuate. But as a recent indication, real GDP only grew by 1.5% in 1976, and Dr. Riekert estimated that it would not grow by more than 3-4% over the programming period.

g) Apart from our own peculiarities, we share with other less developed countries the problem of industrializing in economic competition with the fully developed, mass-producing Western nations and Japan. So S.A. will continue to face harsh competition in international trade.

h) The foregoing will, on any version of S.A.'s future, encourage accelerated exploitation of our natural resources, in order to earn foreign reserves and to create local employment, by which to increase the black standard of living and thereby reduce the population growth rate. So we must expect far greater hazards to our environment during this period of accelerated resource development whose consequences would be as grave as hunger and social dislocation are now.

(i) S.A. is now in the spotlight of world opinion, and more importantly, of superpower politics. This does not affect what we ought to do, but will magnify the consequences of whatever we decide to do.

3. HOW WILL THIS FUTURE DEVELOP?

There are a number of conceivable scenarios for the course of South Africa's future development:

(i) It will industrialize on the Western pattern;

(ii) It will develop on an African pattern, either capitalist industrialization as in Nigeria or Rhodesia or socialist development (not

necessarily emphasizing industrialization) as in Tanzania or Mozambique.

Scenario (i) is built into some of the University's current planning papers. For example, the University of Oklahoma has been suggested as a model. But sections 2(b), (e), (f) and (g) above, viz. that our population explosion and endemic unemployment will continue to eat up much of our real economic growth, surely rule out the hope that S.A. will industrialize on the same pattern as America, or even Britain. It is pointless to plan the ideal university in a vacuum; and we ought not to plan for it with a future ahead of us in which its realization must inevitably be at the expense of other graver social needs. What we can do is plan for the best-possible university in the kinds of future that are still feasible.

In doing that, scenario (i) may be of partial use in thinking about the development of the highly industrialized Pretoria-Witwatersrand-Vaal region which immediately surrounds Wits. Consider the overall structure of the Witwatersrand population, in this regard:

	Present	2000
Blacks	1,5 millions	3,0 millions
Whites	1,0 "	2,0 "
Coloureds & Indians	0,25 "	0,5 "
Total	2,75 millions	5,5 millions

The present figures show that $^{2}/3$ of the economically active people in metropolitan Johannesburg are black, coloured or Indian. Moreover, their projection to the year 2000 assumes that influx control will be fully maintained. This assumption is unrealistic; it is more likely that whites will decline to only ½ of the economically active persons. So, in the heart of the PWV region, the industrial community will largely be composed of non-white people to many of whom industry, development and education will be relatively new. There will still be great cultural and linguistic

diversity, whatever political developments may come about. The University must be willing to recognize this diversity, in its composition and in its operation. Now this PWV region is itself surrounded by the Transvaal at large. And as section 2(b) reminds us, in 2000 the countryside will still contain 22m of our fellow South Africans. This is where we might draw on scenario (ii), and the different emphases placed, for example, by Nigeria or Tanzania on rural development. For it would be irresponsible to pretend that the PWV region or any other urban areas, are self-sufficient. For example, up to 40% of the urban black workforce is migrant labour, i.e. from the rural areas; not only do they produce for the urban areas, but it is estimated that they obligingly spend 80% of their earnings there. So, while the emphasis of the University's teaching and research will obviously reflect the urban, industrial nature of its immediate environment, the University must also recognize that an important proportion of the problems which its professional graduates will encounter, and its researchers consider, will involve the relation of the PWV region to its rural surround and its considerable responsibility in its development.

These scenarios have identified what kind of future S.A. might face. We do not yet know how one or the other might come about. Scenario (i) relies on the "logic of industrialism". On this view, racially discriminatory measures, which are inefficient as well as unjust, will be inexorably swept aside by growing demands of the market for a skilled and mobile workforce. And if this does not apply? There are two standard competing views for the mechanism of scenario (ii). Both have implications for the future nature and conduct of Wits. On the one view, industrialisation in racial contexts accommodates itself to, rather than breaks down, existing racial practices; unless, of course, key figures in the process - businessmen and professionals - can be prevailed upon to act liberally, and reap the benefits of ultimately greater efficiency. On this view, Wits' contribution to the future would require that it explicitly encourage in its students a commitment to achieving a non-racial society. In this respect Wits would

limit that political neutrality, which it has tended to argue is an essential requirement of the impartial search for truth, by accepting that "the truth" as we presently see it is that non-racialism is in general the most morally acceptable aim and socially workable procedure at the present time.

On the second view, industrialization in formerly colonial contexts can take unique advantage of racialism, framing its ideology in locally salient racial terms. The dynamic of change is not then given by the innovations of enlightened employers, but the demands of their exploited employees. In this case, the University's contribution to development would be an involvement with the optimal resolution of conflicting interests.

Now the point is this: on whichever mechanism scenario (ii) operates, if Wits wishes to help rather than hinder the process it will have to make a far-reaching commitment to achieving a more equitable and non-racial society.

This conclusion is further supported by some insights of development economics. We noted in section 2(c) the vicious circle of poverty and fertility in the underdeveloped areas of S.A. This implies that if the production of material necessities there is to overtake the increase of population, the transfer of technology must proceed on a much greater scale. What is needed is training and research specifically oriented towards the underdeveloped areas. Mere good intentions in this direction are not enough: the lavish provision of overly sophisticated technology (through Western-orientated development agencies) only generates self-perpetuating enclaves of technology. The process is worsened when it is administered by officials from the under-developed areas whose links to the needs of their communities are tenuous. The emphasis must be on the rapid transfer of appropriate technology; and on the strong links between research, education and the developing economy which are necessary if it is to be effectively transferred. Countries like Taiwan, Singapore and Costa Rica have achieved

rapid increase in overall per capita income and consequent decrease in their birth rate. They show that the process is possible

Clearly, on either account Wits has to become an institution dedicated to education and research for the betterment of our Transvaal portion of the S.A. community. Students will have to be confronted with these facts about inequalities and imbalances in the context of their future lives. They will then perceive that their University's commitment to the achievement of a non-racial S.A. is not just political theory but vital for a viable future.

4. SHOULD WE SEEK OUT OTHER UNIVERSITIES AS MODELS FOR WITS' DEVELOPMENT?

Where, then, might we look for a comprehensive model for the role which Wits will play, not only in the development of the PWV region but in its contribution to the development of the country? The answer we suggest is: nowhere, really. We can draw on other models in selected respects; but we contend the South African situation will require a unique configuration for Wits, which we are largely going to have to sort our for ourselves.

a) Why we should not look to Western universities

The trend this century has been towards the narrowing in Europe of class inequalities in access to education. But the pace has been slow. Thus, of UK working class children born in the 1930's only 1½% obtained a University education; for working class children born in 1953/4, the proportion had increased to 4%, compared to 18% for children of middle class families (and 35% for children of upper-middle class, professional families). If the aim of the Wits plan is to contribute to a moderately just society, especially in respect of educational opportunity, there is not the time to act at that pace.

b) Why is it not especially helpful to look to African universities

(i) One might look to the University in Tanzania - we urge that Wits do so - for the commitment a developing country may demand of its students: partly by the large component of any degree devoted to studying

relevant aspects of the prevailing social reality; and partly by requiring students to repay their time at university by working for a period in the public service, preferably in a rural area. The explicit social obligations of the university, on the other hand, are met by training diplomate public servants like agricultural or medical officers. Where the analogy tends to fail for Wits is that Tanzania is a one-party, one-university country in which there is tight congruence between national and university goals.

(ii) The University at Lagos in Nigeria provides a much closer analogy, so much so that it is not particularly suggestive. The country is much less rurally oriented than Tanzania; Lagos University was founded as an explicitly urban enterprise; and it even has much the same facilities as Wits, though it is half the size. What are worth noting are its quite large Continuing Education Centre, and its Human Resources Research Unit, which does research for the Ministries of Education, Development and Labour and the National Manpower Board. So its links with both the government and the community are, appropriately for a more capitalist approach, less immediate than in socialist Tanzania.

(iii) The University of Rhodesia, like Wits in various respects, is only really suggestive in three: firstly, there is its declared stance of opposition to a race-oriented regime; secondly, it is a fact that despite this stance, while a majority of the undergraduates was black by 1976, only 6% of the academic staff and 4% of the administration were black; and thirdly, the University has found that far too few of its black students enter technologies and professions.

c) Other universities

We noted above the successful recent development of countries like Taiwan, Singapore and Costa Rica. The educational and technical training institutions of these successfully developing countries might be more plausible external models for the Wits University analysis; there

is a case for studying these countries' institutions as well as those in African countries, many of which have been notably unsuccessful in their development.

5. AIMS AND CONSTRAINTS OF WITS' DEVELOPMENT

We have gained no more than some pointers from what universities in other situations do. We shall thus fall back on what we think we ought to do, within a framework we must now try to define.

a) Constraints

(i) External constraints:

How many university students is South Africa likely to need, and how will it afford to produce them? Consider the third column of the following table for 1974 (compiled from the Unesco Statistical Yearbook, 1976 and from the SAIRR Survey of Race Relations in S.A., 1974):

Country	Students at University & Equivalent(1) Institutions	National Population (thousands)	Ratio: Students per 10 thou. of population	Students as a percentage of 20-24 yr olds(2)
Tanzania	2 644	14 763	1.8	.20
Nigeria	23 228	61 270	3.8	.48
SA (Africans)	7 845	17 745	4.4	.57
Ghana	5 625	9 607	5.9	-
Singapore(3)	8 142	2 219	37	3.4
SA (Overall)	111 808	24 920	45	6.1
Britain(3)	283 057	55 968	51	7.0
Spain	304 532	35 225	87	12.9
W. Germany	641 243	62 041	103	15.8
Australia (3)	142 859	13 339	107	12.5
Costa Rica	28 230	1 921	147	15.4
Japan	1 762 040	109 671	161	18.1
SA (Whites)	95 589	4 160	230	28.0
United States	6 912 182	211 909	326	36.2(4)

Notes

1) e.g. polytechnics in Germany and France but not in Britain.

2) This column shows that the proportion of university and equivalent students in their age cohort quite closely follows the proportion in

overall population.

3. The above figures are for students at university and equivalent institutions, not for students in tertiary education in general. The two figures differ by less than 25% of the latter in all the countries listed, except for Britain, Singapore and Australia. In these three cases the ratio for tertiary education in general is approximately double the ratio for university and equivalent institutions as specified above. So in using these countries to estimate a desirable university ratio for SA, one should weight the specified ratio upwards.

4. The figure for students in tertiary education in general in the USA is 53.6% i.e. a majority of the age cohort. This figure has stabilised, and is thought to be the maximum attainable.

The full set of S.A. ratios for 1977 (using population extrapolations from 1975 and 1976, and university enrolment from the 1977 SAIRR Survey) is:

Country	Students at University & Equivalent establishments	National Population (thousands)	Ratio:Students per 10 thou. of population
SA (Africans)	11 509	19 135	6.0
SA (Coloureds)	3 142	2 501	13
SA (Overall)	136 358	26 802	51
SA (Asians)	765	709	75
SA (Whites)	111 218	4 401	252

In other words, the proportion of S.A.'s white population at university is higher than that in every developed country shown, bar the US; while the proportion of her black population at university is similar to that in underdeveloped Ghana. The overall ratio for SA is similar to that in the UK and half that of a successfully developing country like Spain.

Now on the one hand we shall argue below that SA needs more intermediate professional and technical degrees; so she probably ought not allow the present overall ratio to drop. On the other hand, given the constraints of section 2, we will probably not be able to afford a much greater ratio than Spain's. So, since the population will have doubled by 2000, we can expect to need between 2 and 4 times the present number of university places by then.

What of the racial distribution of places? Let us suppose (cf section 2) that the country's immediate priority should be development to provide productive employment for predominantly unskilled blacks. The process

demands skilled job-creators, e.g. to innovate labour-intensive patterns in industry and agriculture while maintaining a competitive position in international trade. Given the backlog in the black schooling system, it will be difficult to recruit for the task a sufficient number of adequately qualified blacks to the universities during, say, the next twenty years. So for this sort of period the white proportion of Wits might well still be be higher than the black. But we can expect that by 2000 much of Wit's increase in size will represent black intake and that (as in Rhodesia) blacks will ultimately outnumber whites at the University.

What do these findings imply? Clearly, there will be intense - and fully justified - pressure from black youth, their parents and their political leaders for more urban university places. What can Wits start doing now to meet this need? This is surely a crucial issue in the University plan. We must not only respond, but be seen to respond. And our response must meet the magnitude of the factors outlined in section 2, and the implications of the likely processes as analysed in section 3. We present the following issues for discussion:

(1) Where might our black students come from? One might expect in the long term (on an impartial selection of Wits students from pupils of all races, who have ideally received comparable schooling and home encouragement) that the composition of the Wits student population might roughly reflect that of the overall population. But in 1975 there were only 8400 blacks in matric (compared to 44000 whites) of whom only 3500 got matric exemption passes. Average per capita expenditure on school pupils was R644 for whites and R42 for blacks; and average teacher/pupil ratios were 1:20 and 1:52 respectively. Evidently, both the quantity and quality of black secondary education will have to improve dramatically. What might this involve? As an indication, let us suppose SA decided to enrol, fund and teach black pupils on the same basis as whites. Consider the 1976

figures (in thousands):

	Primary school pupils	High school pupils	Total
White	585	334	919
Black	3 401	498	3 899

On these figures, only 13% of black pupils, as against 36% of white pupils, were in high school. If one were to apply the white high school: primary school ratio to the number of blacks then in primary school, one would have expected 1 942 000 blacks in high school, giving a total of 5 343 000 blacks in school. (One arrives at a very similar figure by taking the percentage of white pupils in each white age-cohort, and applying it to the corresponding black age-cohort). To fund this number of black pupils at the white 1976 rate would cost R3 440 million p.a., i.e. 12.5% of the 1976 GDP. (S.A. in 1976 spent 0.6% of GDP on black education, and 2.7% on white; cf Ghana's 14% and Zambia's 17%). And to teach them? At white schools, nearly all teachers have the matric, plus a professional qualification. Our projection would thus require, using the white teacher:pupil ratio, a quarter of a million correspondingly qualified black teachers. Contrast this with the actual situation in 1976, when only 2% of the 64 000 black teachers had the above qualifications. And of the 6 600 new black teachers who completed their training in 1976, only 110, again about 2%, had these qualifications.

The implication seems unavoidable. Only on a fundamental reconsideration of national priorities could S.A. afford to extend schooling on the present white pattern to black pupils in an equitable way. Alternatively, since systematic discrimination is unacceptable, the present white pattern of schooling will have to be fundamentally changed, in ways which need not detain

us here. Either way, Wits could made a two-fold contribution to the problem. Firstly, it could seek to provide crash programmes for producing and upgrading black teachers, to help increase the output of black matriculants. Secondly, it could provide for black adults, who have completed their schooling part-time in Soweto and done better than many of our present full-time admissions, wanting to study part time at Wits in preference to doing a correspondence course through UNISA. These will be mature, motivated, valuable students. Wits should make more of its present courses, especially for teachers and the new intermediate courses we propose below, accessible to them part-time. This has a further advantage. It would allow the University a large increase in its enrolment without a correspondingly large outlay on new premises, buildings, etc.

(2) There is then the problem of "affirmative action", i.e. some sort of interim reverse discrimination in our student admissions criteria, aimed at redressing the advantage which a child brought up in a well-off and cultured home has over a child of equal native ability brought up in trying circumstances by semi-literate parents. The Committee was divided on this issue. Some felt that students admitted on this basis suffered even more from a consequent sense of their inferiority, and that the procedure had ridiculous implications. Others felt, looking for example at the very slow improvement otherwise found in inequalities of university access in the UK, that effective progress towards the achievement of a non-racial society in the long run demanded some sort of affirmative action

in the short term. This would be workable provided that the admissions policy was coupled with special courses to make up for deficiencies most notable in, but not confined to, the black school system. (Such courses would accordingly be required of all students below a certain qualifying standard).

(3) The question of affirmative action also applies, even more controversially, to staff appointments. Perhaps the arguments against it weigh more heavily here. But given the emphasis on locally-oriented curricula which we urge below, one might expect that in many cases not only the best but the only academically qualified staff would be black. On the administrative side, it might be current practice only, or else initially, to advertize secretarial or administrative posts above a certain level in predominantly white-readership newspapers. If so, the practice should be revised.

(4) Wits will need a relationship with black leaders whereby they perceive the importance of high standards in the University and argue for them to be maintained. Surely we need to bring black community and political leaders into high level advisory roles in our University without delay - e.g., on Council?

(5) The above three points have dealt with existing criteria, used here or overseas, for selection of members of a University. New criteria also need to be considered - e.g. selecting students, staff, etc. according to their readiness to undertake, as part of their coursework, duties, etc. an involvement with their community. This would guarantee that they did not enter the University with a view to using their degree simply as a passport to move overseas.

(ii) Internal

The Vice-Chancellor argues that Wits must grow, to a size of 17 000 students. One of his reasons is that many departments in the University are presently of less than "critical size", i.e. they cannot offer enough options, they struggle when a member of staff goes on leave, there is not enough

diversity of interest for staff research seminars, etc. Given lots more students, these departments would be allocated more posts, and reach critical size.

We fully agree with this account of the desirable minimum size of a department. But our argument has been that S.A. cannot afford more than twice the present ratio of students to the overall population. Since the population will double by 2000, the overall university population should be 2-4 times the present size by 2000. But what of departments that are then still sub-critical? One possibility is that Wits should take any opportunity to grow as fast as possible, especially given its central situation in the PWV region. But then we should not be surprised if some university elsewhere, some time in the future, has to be turned into something else less expensive. Another possibility is that neither Wits nor any other university be allowed to grow at faster than the above rate. Rather, let the provision of departments and even faculties be co-ordinated among universities in some workable configuration, thereby avoiding the needless duplication of sub-critical departments that exists at the moment. This would diminish the freedom of choice of both teacher and student. But that may be the price of accepting the argument about critical size while also conceding the limits to the rate of university growth in S.A.

b) Aims

It would be worth a separate paper to consider what might be the guiding moral aims of a university which sought to help, achieve and maintain a good society. We shall confine ourselves to listing the few very general principles which our argument so far has implicitly invoked:

(i) At the individual level, education involves the acquiring of some specified corpus of knowledge, and the learning of associated cognitive or practical skills. The point of education at this level is primarily that the individual in realising his characteristic aptitudes, often in interaction with others, enhances both his and their human well being; the point is only secondarily, if at all, that he can thereby earn more.

(ii) At the social level, therefore, the university would want there to be equal access to its educational opportunities. This aim requires firstly that the competition for university places be fair: so that the University would try - either in its own programmes, or else through what influence it can exert on the school and social system - to eliminate, and otherwise to compensate for, disadvantages in the home background of its (prospective) students. Secondly, the university would have to offer scholarships for students who might not apply because they could not afford to take up the places they win.

(iii) At a political level, the University would want to realise its own institutional destiny in social interaction; not only by reaping the benefits when its chosen goals happen to coincide with social imperatives, but by participating in the national debate about what they should be and how they can best be achieved.

6. BROAD FEATURES OF OUR FUTURE UNIVERSITY, AS GOVERNED BY AIMS AND CONSTRAINTS

The guidelines for our future have been set, then, by the demands of a modicum of social justice (section 5(b)); what a just distribution of educational resources in S.A. can afford (section 5(a)); and the kind of future development of the country within which these have to be achieved (section 3). Working within these guidelines we must take account of Wits' unique inheritance: an urban university in the middle of the industrial powerhouse of the country, which in turn is significantly fuelled by the rural majority of the country; and a University that has hitherto shaped itself along laissez-faire Western lines, but now must help meet the daunting challenges of any South African future (section 2).

Now the functions of the University as traditionally conceived are the seeking and transmitting of knowledge. But these two functions have always been modified by a third, the production of skilled manpower:

originally for the Church, then for industry and the private professions, and most recently also for range of technical and specialised occupations required in the civil services of a modern state. So what is crucial is the balance which Wits will choose to strike, between two extremes: on the one hand, research and teaching for their own sake; and on the other hand, research directed towards resolving the debates and solving the problems of national development, and the training of technical and professional manpower.

In the context of the future summarized above, the balance we propose is this:

a) The University as a forum

The South Africa we have sketched is a troubled society overdue for change, yet chronically divided as to how to achieve it. There are too few institutions fostering regular analysis and debate on the divisive issues. Even for the moment, when the role of Wits as an institution is mainly oppositional, it should participate constructively, with its constituency, by inviting community leaders and public figures to articulate their policies and proposals. In doing this we should aim to coax all of our staff and the student body into coming to hear, and rationally assessing, even unpopular opinions. Subsequently we might hope that the commitment to achieving a non-racial society which we espouse as an institution will, partly through our own efforts, be more widely shared. The University would then expect to play an influential consultative role in initiating, as well as analysing and responding to, public policy.

b) Role of research

Our ability to conduct vigorous independent inquiry becomes increasingly important with people having to introduce and adjust to social change, while all the time our society becomes more crowded and our environment and resources come under pressure. Thus, two complex questions of priorities need fresh and concerted debate: research versus other social needs; and pure research versus applied research. Their complexity is highlighted by

the following, which need to be incorporated into the standard debates. On the first question, one should note that a developing country may attach as much significance as a developed one to the creative achievements of its own scholars, scientists, and artists. The community feels validated in its standing in the world, and the consequent gain in self respect is an important part of the development process. Work of true distinction will have this value even if it does not have practical import. However, even the prestige value of distinguished research will not justify our spending vast sums on esoteric "big science" of the kind that developed Western societies can no longer afford on their own. On the second question, one should note that even applied research is not necessarily actually applicable to local needs. Some aspects of high technology do appear to be important for the future; say, the mastery of fuel synthesis manifested in SASOL II. On the other hand, there is a strong tendency to build up high technology enclaves which widen the gap between the enclave-dwellers, ourselves, and those affected by poverty and fertility. We should rather weight our efforts towards those which narrow the gap: for example, research on birth control methods which are workable in our context, the physiology of malnutrition, solar energy utilisation, land deterioration in the tribal areas, etc. The prize waiting for the doctor who discovers why throat cancer is rampant in the Transkei will be different from a Nobel Prize; it will lie in the fulfilment of an education having a different orientation.

In general, we must discover how the country ticks while deciding how best we can guide its development towards what we believe is desirable. Wits, for example, surely needs an adequately-funded, problem-orientated interdisciplinary centre for contemporary social research. Such a centre would allow it to fulfil the commitment towards achieving a viable non-racial future which we urged above: by undertaking comprehensive and above all locally-committed projects, recognizing both the urban nature of the PWV region and its ties to the rural areas; by fostering keen debates on urban and national planning, which include the planners themselves, and which are rooted in solid research data.

Consideration would be given between universities to the national distribution of centres in which such research is done. Competition among local scientists as well as with overseas scientists may be a necessary spur to South Africa's efforts (on work of possible local relevance, on a scale we can afford). But at the same time we cannot afford to leave so many important areas without any researchers at all. Our hope is that this problem will be overcome in the long run by the changed approach to education, the moral commitments implied in the overall orientation of the university, and its eventual close involvement in the framing and advancing of national goals. Gifted individuals will choose to manifest their creativity, and reward their striving for high intellectual achievement, in terms of the more relevant opportunities.

c) Professional and technical training

The University of Ibadan had a classics department for ten yaars before it taught agriculture or law, whereas Wits has from the outset been mostly a technical and professional training institution. So it is easier for Wits than for African universities which adopted the idea of a British arts-and-science university to give due attention to the professional needs of the community. But who is the community? The constitution of the University Council suggests, and the content and structure of curricula in law, engineering, medicine, the Business School, etc. confirm, that the community which the University sees itself as serving is in the main white and wealthy.

Our paper has sketched a very different reality. We have proposed a re-orientation of the University in one area of its licenced competence, viz. research. It remains for us to do so in the other area, over which we have even greater control: teaching students for degrees.

(i) Local re-orientation of curricula

The simplest way to begin is with what Wits teaches: to meet the commitment we have argued for, we need to teach labour law as well as corporation

law; preventive medicine for black communities, as well as the intensive care of white individuals; rural development economics as well as marketing management; the design of low-cost housing as well as high-rise office blocks; and so on.

But our argument has also demonstrated that the features of the situation in which Wits will be working are crucially related. They can only be effectively tackled in a co-ordinated fashion. This needs to be reflected in the courses. They will have to base their approach on problems, the resolution of which will demand the effective integration of an appropriate interdisciplinary component in each course (rather than a few lectures not for credit, tacked on as an afterthought). This will, in any case, mean a lot of new work for lecturing staff. And it will still only be feasible with a lot more team-teaching, and a freer flow of students between departments for portions of their courses; plus an administration interested, flexible and responsive enough to handle the ensuing complexity.

(ii) Restructuring of degrees

These curricula will get off the ground at all, and then avoid degenerating into academic chat, only if one can guarantee a system of fruitful involvement with the real needs of communities towards which they are being orientated. And what are those needs? More doctors, engineers, lawyers? Even if this were true, S.A. could not afford to put the requisite number of people though the long professional degrees. But in fact what S.A. really needs, we contend, are more medically skilled, technically skilled, administratively skilled, people, i.e. at an intermediate rather than a fully professional or fully specialised level. Take medicine as an example. Let S.A. aim to produce fewer doctors. This need not reduce the overall availability of doctors' skills, provided they were saved the time they presently waste dispensing aspirins and stitching cuts. For each doctor the society can thus save on, it can afford to train two medical assistants in a shorter programme. One of them would take over dispensing

the aspirins and stitching the cuts, while the other can get some medical skills to people who previously had no access to them at all.

Given a specified slice of the pie available for medical training, how would one arrange to teach such intermediate professionals in suitable numbers, while guaranteeing the connection with the community that is their raison d'etre? One way would be to make the intermediate qualifications leading to a final medical degree cumulative, and separated by mandatory stints in the community which count as a qualifying part of each degree. Thus, the graduating doctor will have done, say, the same initial eighteen months, plus a six month stint in the community, as a health official who does not proceed further. And he will have done the same next two years, plus a further one year stint in the community, as a medical officer who does not proceed further. The more purely medical component of each year would increase as the student moves further through the overall programme. One would expect students of various experience and all ages at each stage of the course; and one need not limit first year admissions to students wealthy enough to envisage several successive years out of work.

The standard of the final product will be equal in the rigour of his thought and skill to the doctor from Minneapolis; and vastly superior in practical experience; but the content of his training will not be comparable, since it will have been so closely linked to local requirements and research. This will, of course, solve at a stroke the problem of South African doctors training here in order to leave immediately for overseas. They simply won't be able to, and anyone explicitly planning to go overseas would as little do medicine or engineering with that in mind as they would now do law.

It might be argued against this scheme that the training for the respective jobs will have to be qualitatively as well as quantitatively different, so that if the training of the final doctor is not to suffer, the University must retain discrete courses for each category (perhaps lodging the most junior course in a College for Advanced Technology). This alternative is equally plausible. Moreover, it might not require a substantial increase in the overall medical slice of the economic pie. For the extra teachers and facilities needed to train adequate numbers of health assistants and medical officers (and similar dental officers) in discrete courses could be made available by combining the reduced numbers of actual medical and dental students in large classes in junior

years.

We envisage (and we understand these ideas have already been canvassed in some faculties) comparable restructuring, on one or other arrangement, of the other professional degrees: e.g. supplementing fewer engineers with greater numbers of technologists and technicians; fewer lawyers with greater numbers of legal officials to handle routine procedures; and so on. In each case work in the community would count for credit to completing each stage; and - specially with the help of evening classes as urged earlier in the paper - one would expect adults, armed with invaluable experience, seeking to further their studies throughout their working lives. This sketch evidently has implications for nearly all the planning committees. In each case, what must be considered is not only a future-best solution in our likely future context, but what Wits must start doing right now towards getting there.

7. CONCLUSION

Some of our actual suggestions are controversial; better ones can quite probably be developed, within the situation we have identified. But we are convinced that within this situation any workable and coherent plan will demand the kind of suggestions we have made. What we are basically advocating is this: Wits must change its ethos. We must become a University primarily orientated towards S.A., and only then towards the international university and professional community.

We advocate this because the University is an engine of development, whether we like it or not. So let us rather direct it with rational planning and determined action. In doing so, we must accept the responsibilities Wits has in regard to the gross tasks of South Africa's future.

Otherwise, we shall be taking a seat on the sidelines of the country's future, from which to shout inappropriate or even harmful advice. If that is all the participation Wits is prepared to aim at, we do not need to plan at all.

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