

**Universities of Science and Technology for Rural Development as Agency, Freedom, and
Justice: The Politics of Knowledge, Evidence, and Decision**

**Albert Luthuli Research Chair Founders Lecture, Commissioned by the University of South
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Introduction

Calling this the Albert Luthuli Research Chair Inaugural Lecture should be understood as an act of homage. His celebrated legacy as politician, educator, community builder, and man of faith, concentrated as it is in *Let My People Go*, his autobiography, as well as in his seminal speeches and essays – ‘The Vernacular as a Medium of Instruction’, ‘The Road to Freedom is via the Cross’, ‘The Rivonia Statement’, ‘Let Us Speak Together of Freedom’, and the Nobel Peace Prize Acceptance Address – provide rare insights into the vital links between lived experience, knowledge, agency, freedom and justice that government, civil society, information and knowledge institutions, and the private sector are called upon to mediate. In recent years, there has been a continuous effort, by the University of South Africa, to mobilize its community and enlist its energies, loyalties and skills in creating a new institutional order and a new political consciousness about the past, present, and future of the country. This has entailed naming and renaming university buildings and professional structures, broad-based political socialization, the inculcation of political information, values, and practices in formal fashion (Luthuli, 1962).

In this sense, the movement for fundamental change in learning, teaching, research, innovation, and community engagement continues to be an extraordinary process of education and socialization, and everything must be done to ensure that students, lecturers, administrators, workers, and policy makers learn a new set of political, social, and economic values and practices. In pursuing this imperative, however, the movement for fundamental change, at the University of South Africa, is compelled to negotiate the contradictions, within its structures, arising from its political derivation from apartheid colonialism on the one hand, and its cognitive, social, political, and ethical obligation to be meaningfully inaugural and inventive, on the other. Thus, the decision to fundamentally transform its curriculum as

well as its governance is predicated upon its ability to imagine and execute a decisive departure from its apartheid colonial past.

Twenty six years after the democratic transition in 1994, what is the meaning and value of naming a Research Chair after an iconic figure? How does the name function in the discourse on agency, development, freedom, and justice? Is the name a performative act? Does it more than merely name? Is the name more than a form of words that does not merely name something, but makes something happen? Is the naming of the Research Chair adventitious to the transformation of the curriculum and governance of the institution or essential to it? In what ways does naming direct the core business of the university and its support structures? What values and principles should underpin its work?

In responding to these questions, the university needs clarity on the explicit and tacit things that we need to teach our students. The name Albert Luthuli Research Chair creates a brave new world of thought, feeling, attitude, and action in which the University of South Africa conceives its new identity. This involves the initiating efficacy of naming acts, political and executive power, ethical responsibility and obligation, the translation of ideology from one historical period to another. It also has to do with how to relate to each other and how the university imagines itself in the world. This learning and doing, this self-understanding and self-imagining, inspired by the work and life of an iconic figure, ground the university in democratic law and deliberative politics. It aligns itself with a vision and a mission laid on it, and for students to learn, think, feel, and do in the Albert Luthuli way. So the name Albert Luthuli Research Chair, in this context, is one of the great, complex political words in our national educational system that gives direction on how to fundamentally transform higher education and training in South Africa. In a real sense, the name legislates educational meaning, and creates a conceptual and political landscape for the university community that generates historical narrative and vision.

Albert Luthuli was a leader of the African National Congress, with a believer, an educator, and a community builder on his back. He had a remarkably just, living, unusually right sense of what constitutes fundamental change in social, economic, and political relations; he also had a rare power for discerning and formulating relevant principles, and the ability to negotiate the edgy truce between these three. So that the problem of mediation and integration was always sharper for Luthuli than for most people, and this problem is that of moving from the particular response to lived experience to the relevant judgment, and back again. In this kind of relationship, it is always possible for the abstract (belief, doctrine, ideology)

either to debilitate or to distort the concrete, the immediacies of lived experience. But given Luthuli's sensibility and ethical imagination, the man of faith inspired and directed the politician, the educator, and the community builder. The critical challenge is not of passage from one level to the other, but of negotiation and mediation, so well dramatized in 'The Rivonia Statement' and The Nobel Peace Prize Acceptance Address. Here, as in all his work, the position of the leader of the line between lived experience and judgment was unusually intense; and he always overcame the risk of toppling into the disaster of religiosity, abstraction, and rhetoric.

If I use the word 'overcome', that is to indicate a certain conviction, a certain activism, on Luthuli's part – in the practical, cognitive, and ethical movement from the concrete to the abstract and back again as a mode of thinking, feeling, and action. The generalizing side – the believer, the leader – never assumed, as it does at times with most leaders, much of the imperious and imperial character. The response, then, becomes the source of the generalization and the generalization the consequence of the response. The generalization never takes on its own life, never drills and bullies the response to lived experience. The great safeguard, then, moving forward, is never to let oneself become abstract, but always to retain an intimate and lively sense of the integrity of lived experience. In the 'Rivonia Statement', in particular, one feels Luthuli's delicate, deft, and particularized response to the singular event. But he also manifests the gift for framing the singular event, a framing which was representative of his feelings, attitudes, perceptions, knowledge, and values. It was something distilled and blended by manifest experience, feeling, thought and conviction.

I would like to consider one of the most sustained and coherent of Luthuli's judgments – the organic link between lived experience, knowledge, language, agency, freedom, and justice, paying particular attention to access to scientific and technically exploitable knowledge as a force for rural development in the Fourth Industrial Revolution. A close reading of his work, including his work as a farmer in rural Groutville, provides a complex of rich insights.

Part One

Access to Scientific and Technically Exploitable Knowledge as Agency Enhancement, Freedom, and Justice

1) The Measure of Capability

- a) In the last twenty six years since the democratic transition in 1994, people in rural areas discovered that they have a challenge. As challenges go in post-apartheid South Africa, theirs is very bad one: urban areas seem to be taking over the country, but do not exactly know why. The explanations that development economists have come up with vary wildly, although the moral persuasive idea is that, in the last twenty six years, greater access to scientific and technically exploitable knowledge has made urban communities more productive. This is largely because they are heirs to a distinctive and superior scientific and technological culture, which means social groups' abilities to master physical and intellectual environments and get things done in the world.
- b) If we really want to know why cities are so attractive, and why there is insistent migration to urban areas, resulting in informal settlements, we need to measure scientific and technological developments over time and space. Scientific and technological development is an important concept because the major reason why urban areas have reached higher levels than their rural counterparts, and why these communities are rising so high that they are able to project their power country-wide. Briefly, scientific and technological development is the bundle of knowledge, skills, and competencies through which people feed, clothe, house, heal, and transport themselves, explain and explore the changes around them, and extend their power.
- c) In the rest of the lecture, I argue that the establishment of universities of science and technology for rural development is urgent and necessary. This approach allows us to come up with better, more transformative rural development strategies. Government, corporations, and civil society must grasp this truth: agency, freedom, and justice, in the Fourth Industrial Revolution, grow out of scientific and technically exploitable knowledge. Around the world, it is ever thus, and the capacity to make use of the physical and intellectual world has always been a crucial part of sovereignty and freedom. This is the gulf that separates the urban and the rural in South Africa and much of the continent. The ability to store and transmit scientific and technically exploitable knowledge is central to mastering the physical and intellectual environments, and as such is central to agency, freedom, and justice (Morris, 2013).

2) Unequal Access to Scientific and Technically Exploitable Knowledge as Capability Deprivation

- a) Neoliberal economists in South Africa are criticized for concentrating too much on productivity and competitiveness and too little on agency, freedom and justice. This narrowness in South African development economists has the effect of contributing to the neglect of the agency, freedom, and justice dimensions of rural development in the knowledge economy.

Rural development strategies in South Africa, since 1994, have indeed been distorted by over-emphasis on low-level and middle-level technical skills – the focus on TVET colleges – to the neglect of innovative, high-calibre skills central to rural development as freedom and justice. If you tell most South Africans you are working on human resources for rural development, it is quite standardly assumed that you are focusing on TVET colleges, with very little recognition of the fundamental value of high-level technically exploitable knowledge (Kraak, 2016).

The distinction, however, between TVET colleges, important as they are, and Universities of Technology, is important. Many of the discourses on rural development in South Africa appeal to basic at best middle-level technical skills as a resource than they do to innovative capacity. Innovation and high-level skills apply to the broader notions of agency, freedom, and justice. Knowledge differences can, in fact, serve as an indicator of very deep inequalities that divide races, classes, genders, and geographical places (rural-urban in South Africa).

- b) The need to discuss Universities of Science and Technology in terms of agency, freedom, and justice is a strategic and tactical move, allowing us to make clear what the fundamentals are. The work of Universities of Technology for rural development cannot be replaced by some clever reactionary assumptions, assumptions that give the appearance of pragmatism through concealing the choice of values and weights in rural development strategies. That evasion becomes transparent when we establish Universities of Technology only in urban areas, reducing rural development needs to low-level and medium-level technical skills offered by TVET colleges. With the decision to establish a University of Science and Technology in Ekurhuleni, a very smart idea in itself, the evasion has become transparent.

The use of democratic prerogatives – agency, freedom, and justice – is a crucial part of the exercise of inclusive democracy policy. In a justice-freedom-agency approach, the participatory freedoms and human rights cannot but be central to inclusive democracy and the sovereignty of the people. Without science and technology, without Universities of

Science and Technology in rural areas, agency in the Fourth Industrial Revolution is inconceivable. The basic argument relates to the need to see people as agents rather than passive beneficiaries.

- c) As we ponder important policy choices that involve the application of new technologies, we should remember that our rural development strategies work within an urban-centric development paradigm. The discrepancy is created, in large part, by an absence of widely shared appreciation of the central importance of high-level skills in rural development offered by new technologies. Which technologies are desirable to manage climate change, for instance, and what is to be avoided? As we ponder issues of this kind, it is not always clear which principles, policies, or forms and levels of knowledge are suited to the rural development strategy. The discrepancy is political one. Often, in rural areas, there are no persons, organizations, or institutions to provide the skills that matter. In fact, there are no clearly defined institutions with clear capacity to bring about the required change. Typically, what happens in such cases is that, as time passes, a real mixture of government plans, corporate investments, and government institutional arrangements takes shape to produce jerry-built policies and programs. But as the last twenty six years have shown, given the number of points at which the lack of science and technologies generates significant socioeconomic stress and conflict, this familiar pattern is increasingly unsatisfactory.
- d) As we do this, care however must be taken to avoid an essentially technocratic approach. The complicated business of research, innovation, and application in the Fourth Industrial Revolution, must include a moment where the democratic values – agency, freedom, and justice – need to be integrated into the rural development strategy. It must include a program on ‘Batho Pele and Thuma Mina’ values. The concern is about politics, economics, and public ethics. Unfortunately, neoliberal capitalist economics has little to recommend on this score, almost nothing to say about the ways in which persons in rural areas in their roles as citizens might be involved in making choices about the use of new technology. Whether we are pondering drought or water quality, any attempt to discuss rural development needs to pause long enough to appreciate the crucial or constitutive role of high-level skills.

With the knowledge economy in the Fourth Industrial Revolution, the prospects for social, economic, political, and cognitive justice, the prospect for heightened attention to Universities of Science and Technology for rural development, is quite high. Concepts of

- science, technology, freedom, justice, and development are gradually redefined, and can now be deployed in ways that can fundamentally transform rural development strategies. The attempt of the Radical Social and Economic Transformation Movement to create a new understanding of political, social, and economic relations corresponds to path-breaking ways in post-structuralist, anti-hegemonic discourse, a re-evaluation in which Eurocentric hegemony, and urban centricism is yielding to an unbridled radicalism. In this ferment of ideas, the view of the relationship between science, technology, development, freedom, and justice can now be imagined. From this viewpoint, the creation of arenas for the politics of science and technology, for rural development, is much more than a way of solving unsettling problems that arise in the course of technological change. It is also more than finding alternatives to the increasingly absurd logic of compliance, accountability, productivity, efficiency, and control that now drives the strategy development, implementation processes.
- e) This approach to rural development in South Africa does political theory great service: it attends to the consequences of the social and economic realities of unequal access to science and technology, and it makes an impassioned, theoretically substantial plea for the need to establish Universities of Science and Technology in rural communities, and treat each person, whatever his or her geographical location, in accordance with the dignity of full citizenship. The value of this approach is in fostering discourse between the theories underlying our political, social, and economic order and the needs of development, agency, freedom, and justice. It is a reckless statement to theorise that TVET colleges are needed for rural development, much more than Universities of Science and Technology. However, it does development and political economists an important service by directing our attention to a crucial issue of inclusive growth and development, freedom, and justice in South Africa; it no doubt sets the stage for the debate that should by all rights follow (Benhabib, 2004; Sandel, 2009).
- f) In analyzing social and economic justice in South Africa, there is a strong case for judging individual advantage in terms of the kind and level of technical skills that a person has, that is, the substantive freedoms and human rights she enjoys. The claims in favour of the capability approach to poverty, unemployment, and socioeconomic inequality are the following:

- Poverty, unemployment, and socioeconomic inequality can be sensibly identified in terms of capability deprivation; the approach concentrates on deprivations that are intrinsically important.
- There are influences on capability deprivation – and thus on poverty, unemployment, and socioeconomic inequality,
- The instrumental relation between unequal access to science and technology, and low capability is constant.

The third issue is particularly important in considering and evaluating strategies aimed at narrowing, if not eliminating regional urban-rural imbalances. If there is a serious grumble, it rests on the relative importance that is attached, in much of development economies in South Africa, to inequality in a very narrow domain, viz., basic skills.

g) Whether we are individuals, corporate heads, or government executives, there are many areas in rural development and inclusive growth in which we cannot know what we ought to do without assessing the body of scientific evidence. The more responsibility as leaders and professionals, the more tragic the consequences of failing to make the right decisions, are likely to be. Indeed, when we contemplate the possible consequences of ignorance on food security and health, the number of human lives that are lost by uninformed decisions, dwarf the cost involved in inclusive access to technology. The lessons of Limpopo and Eastern Cape, to cite the most notorious cases, are applicable whenever science and technology are ignored in the formulation and implementation of provincial and national development plans. That knowledge puts us under the strongest obligation to make full use of the evidence. Because we did not do so, we cannot escape responsibility of hundreds of people, in the rural area, dying from undernourishment and poor health. Going forward, political power and representative democracy must be seen to have direct bearing on the actual lives of the majority of the people.

The ideal of technically exploitable knowledge – that one's decisions about rural development, for instance, should be based on producible evidence – has been ridiculed and mocked in recent years. Most frighteningly, this contempt for higher education and training, for science and technology, has pushed back against the norm that has advanced and protected the knowledge economy in democracies around the world, for example, against the possible existential threat of

climate change. But are we going to allow this semiliterate populism to undo a century of the movement for education for all? If a movement for fundamental change, like the one led by the Liberation Movement for decades, has proceeded for over a century, there must be systematic forces behind it, and the many people with an interest in justice should make sure that it is not precipitously reversed.

The deepest question is whether the rise of the radical transformation movement, whatever damage it does in the short term, represents the shape of things to come – whether the Freedom Charter’s movement for quality education within the reach of all, has run out of steam. Do recent events imply a reversal of the gains of the struggle? As with equal-access sceptics, who claim to be vindicated by occasional policy setbacks, it is easy to over interpret recent events.

3) On Technology as Ideology

- a) It is a fact that a central feature in the knowledge economy is an ever-increasing reliance on scientific and technically exploitable knowledge in the production of goods, health care, transport, accommodation, and communication. This reliance was anticipated by the Freedom Charter, and recently in the Fees Must Fall Movement. Moreover, scientific and technological power has proved an invaluable resource in our liberal democratic society. The great decision power made possible by such knowledge has created a number of political and economic challenges; it has also come with certain social costs, created management problems, and has compounded the general framework within which policy decisions take place. Such problems include the following:
- b) Concentration of social, economic, and political power in few hands. But this is inconsistent with the ideas of democratic control of decision making, giving rise to postcolonial elites that pose a threat to the movement for fundamental change in social, economic, and political relations. With the growing sophistication of science and technology in the Fourth Industrial Revolution, and the difficulties encountered by the poor and information illiterate public in understanding scientific and technical processes, and the frustration inherent in the pursuit of any end, the new post-colonial elite and growing progressively exclusive shielded as they are by the claim to greater scientific and technical skills and competence (Feenberg, 1995).

4) Access to Scientific and Technically Exploitable Knowledge as a Socioeconomic Right

- a) Access to scientific technically exploitable knowledge, particularly in a knowledge economy, is a socioeconomic right. Shouldn't our democratic constitution ensure that people, most of them in poor rural communities, should not live in desperate conditions mainly as a lack of access to science and technology? The apartheid law makes no mention of the rights to food, shelter, and health care. But the post-apartheid constitution does, and does so in explicit terms. Free education for the poor doesn't explicitly include free access to scientific and technically exploitable knowledge, which carries significant implications for inclusive democracy. Doesn't the constitution mandate protection of the poor whose socioeconomic rights are at risk? In a country as rich as South Africa, boasting of millionaires to no end since 1994, is the limited nature of public resources a convincing argument. Doesn't this require special deliberative attention? And doesn't all rights impose costs that must be borne by taxpayers? This point has considerable implications for our notion of citizenship. The constitution protects rights of free speech, religious freedom, and sanctity of the home, but does not enforcing the right to access to scientific and technically exploitable knowledge, so critical in the knowledge economy. All rights need significant taxpayer support. The current constitution is supposed to be transformative, not preservative. Its preamble sets out 'to heal the injustices of the past'. In this regard, in what ways does the constitution ensure that government does not fall prey to the legacies of apartheid law? Has the state taken reasonable legislation and other measure, within the available resources, to achieve the progressive realization of the full meaning and freedom and justice? Again, without access to science and technology, the right to health, food, water, and social security in the Fourth Industrial Revolution is weakened and undermined. Without scientific and technical knowledge, even the right to shelter is severely affected (Sunstein, 2001; Chaskalson, 2000; Meierhenrich, 2008; Klug, 2010).
- b) It is impossible to understand the dispute over the right to scientific and technically exploitable knowledge without reference to the effects of apartheid, in particular of the effects of the Bantustan policy. The central point is that the system of Bantustans is directly responsible for the acute shortage of high-level scientific and technical skills in many rural areas. The influx law sharply limited access to urban areas. Part of the result was to limit technical education to low-level skills. Fortunately, since 1994 high education and training has been preoccupied with the establishment of TVET colleges. But in the knowledge economy, it is high-level skills that can enhance a person's agency and capability to achieve the full meaning of freedom.

- c) The rationale and justification for establishing Universities of Science and Technology in rural communities cannot be understood without reference to socio-economic rights. This is a social impact implicit in the Bill of Rights. And so government has to take the appropriate steps to ensure the realization of this right to vital skills and knowledge. There should be little question that most of the people in rural communities live deplorable lives largely because of the lack of appropriate kinds and levels of skills to make use of the freedom. Our democracy requires a certain level of capability to function fully as a citizen.
- d) A knowledge-based view of agency, freedom, and justice is not a theory in any formal sense. It is more a set of ideas that emphasize the role of science and technology in the advancement of agency and the sovereignty of the people. At its foundation is a number of assumptions concerning the instrumental and constitutive values of science and technology (Sunstein, 2001). Free education for the poor captures an important part of a democratic commitment to freedom and justice. Shouldn't a democratic constitution also try to ensure that people in rural areas, most of them poor not be deprived of access to science and technology.
- e) The answers to these questions point towards what might well be the striking difference between liberal democracy and the demand for justice as the basis of social cohesion and nation building. Shouldn't this right have constitutional protection? This question has large implications for we rethink about redress and equity. Why is the right to free speech protected that the right to something as decisive as the right to science and technology? This right cannot exist without government's apparatus, ready and able to secure poor and marginalized people's rights to science and technology as such. If the central concerns are citizenship and democracy, depriving poor rural communities of high-level scientific technical skills is high to justify. The right to such skills has a strong democratic justification: if rural communities are deprived of this, they cannot have the capability to function in the Fourth Industrial Revolution. So for poor rural communities to be able to act as citizens, and to be able to count themselves as such, they must have the kind and level of skills and knowledge that such protection ensured surely, this within judicial capacity. Is the right of the poor to high-level skills not subject to judicial enforcement? It is justiciable. The fact that resources have to be expended on it is hardly decisive, for this is true of many of the civil political rights entrenched in the constitution. Many rights give rise to similar budgetary implication without compromising their justiciability. This is of particular interest in South Africa, where a substantial percentage of the population, most of them in rural areas, live in degenerate

poverty. The Constitutional Court has now rendered a major decision involving socioeconomic rights in a case involving the right to shelter (Sandel, 2010).

5) On Information Literacy

The best way to resolve the debate about why urban communities is to include information literacy in the capability index, because this will allow us to compare information illiterate communities with information illiterate ones over a long period. Prominent among the capability traits is the ability to use scientific and technically exploitable knowledge to master their physical and intellectual environments and get things done. In the Fourth Industrial Revolution, people have to process and communicate vast amounts of information technology. So it is necessary to build institutions to impart the necessary kinds and levels of skills to more and more people. These traits may not add up to a comprehensive picture of capability. This is a useful way to compare rural and urban communities in South Africa. This measure has two advantages. It makes it possible to define the core elements of agency, freedom, and justice, and to design the index of capability in such a way that it can measure change and development through time (Morris, 2013, 2010).

Of the many diverse challenges we face in South Africa today, perhaps the most intense is how to understand and shape the new information and communication technologies, which entail nothing less than a fundamental transformation of the entire education system. We should consider the possibility of having millions of people, including poor rural communities, connected by mobile information and communication technologies, giving rise to unprecedented capability to store and use high-level skills, as it is in Cuba (Roset, 1994). The urban areas, particularly the metros, are reaching an inflection point in their development as they build on and amplify each other in the fusion of technologies across the physical, biological and digital domains (Castells,). We are witnessing the disruption of orthodoxies and the reshaping of production, consumption, transportation, and service delivery systems. Government, corporations, civil society, and information and knowledge institutions have a responsibility to work together to better understand and adapt to the current and emerging trends. Widening access to scientific and technically exploitable knowledge is a vital part of that response (Schwab, 2016).

With the radical uncertainty surrounding policy and strategy development in the Fourth Industrial Revolution, in the encounter with COVID-19, we at least know the critical importance of access to high-level scientific and technical skills, their complexity and interconnectedness across sectors. This means that rural and urban areas have a responsibility to work together to make full use of the available science and technology. Shared understanding is particularly important if we are to shape a collective future that reflects common objectives and values. It involves the transformation of our development policy and strategy. The more we think about how to harness the technology revolution, the more we will examine ourselves and the underlying social, economic, and political systems that these technologies embody and enable, and the more we will have to shape the fundamental change in our social, economic, and political relations (Feenberg, 1995).

Shaping the Fourth Industrial Revolution in COVID-19 to ensure that it is empowering and inclusive rather than divisive, it is the task of government and the private sector. These interactions and collaborations are needed to create common, cohesive, and collaborative narratives, enabling individuals and communities from all parts of the country, rural and urban, to participate in, and benefit from the ongoing scientific, technical, and industrial changes.

6) Rural-Urban Inequality: Social Cohesion as Ideological Construct

Why are so many development challenges in post-apartheid South Africa perceived as challenges of social cohesion, rather than as challenges of inequality, exploitation or enduring injustice? Why are the proposed remedies – empowerment, reconciliation and tolerance, rather than liberation and political struggle? Reading the Constitution, the White Paper on Arts and Culture, the White Papers on Education and Training, and the White Paper on Batho Pele, the immediate answer lies in the liberal multiculturalist's basic ideological orientation: the culturalisation of politics and the politicisation of culture. Political differences – differences conditioned by political and economic inequality or downright economic exploitation – are neutralised into cultural differences, that is, into different ways of life which are something given, not historical, that cannot be overcome except through reconciliation and tolerance. This calls for a response in terms spelled out by Walter Benjamin: from culturalisation of politics to politicisation of culture or, to use Chantal Mouffe's formulation, it calls for a reflection on the character of power and antagonism. It is important to draw the consequences of Benjamin's and Mouffe's reflection for a critique of the

current culturalist and moralistic liberal discourse, as well as a reformulation of the project for “radical economic transformation” in terms of radical and creative antagonism at the core of our democracy.

After the demise of apartheid in 1994, the “curtain of ideology” has been replaced by the cultural diversity of the rainbow nation. But how can the ultimate formula for social cohesion be found in capitalist liberal democracy? In light of this, the difference between African and Western culture is not a clash between two distinct ways of life, but a clash between political and economic forces as a site of struggle. It seems that differences of cultures really are a clash of underlying power conflicts.

Not so long ago we were being told, to the accompaniment of much fanfare, that the rainbow nation had won and that apartheid colonial history had ended. Alas, far from having produced a smooth transition to egalitarian democracy, the collapse of apartheid seems, in many places, to have opened the way to a resurgence of new racism, ethnicity, and the emergence of new market antagonisms. Social scientists view with astonishment the explosion of manifold racial, ethnic, and systemic violence that they thought belonged to the apartheid era. Instead of the heralded “rainbow nation”, the victory of “truth and reconciliation”, we are witnessing an explosion of particularisms and sectionalisms as well as an increasing challenge to reconciliation and social cohesion.

Taken by surprise by such a convincing refutation of their optimistic forecasts, many liberal social scientists react by evoking the abiding legacies of apartheid or a new local upsurge of senseless violence. They respond as if it represents only a temporary detour on the main road that inevitably leads to the triumph of the rainbow nation: a short parenthesis before truth and reconciliation impose their order, or a last desperate cry of the political before it is definitively destroyed by the forces of law and reason. This is so because it is indeed the political which is at stake in the national agenda for social cohesion, and the possibility of its elimination. And it is the incapacity of liberal social scientists to grasp its true nature and the essential character of antagonism that explain the impotence of Batho Pele principles, truth and reconciliation in the current situation – an impotence that, at a time of profound economic crisis, are having devastating consequences for democratic politics in the Vision 2030 period.

The evasion of the political, in the current conjuncture, could jeopardize the hard-won gains of the Liberation Movement, which is why I take issue with the conception of politics that informs a great deal of thinking today about the possibilities of social cohesion and reconciliation. This conception can be characterised as moralist and culturalist. I hold the view that its main shortcoming is that it cannot but remain blind to the specificity of the political in its dimension of conflict/decision, more conflict and decision, and that it cannot perceive the constitutive role of antagonism in our social life and national politics. With the demise of apartheid, the illusion that we can finally dispense with the idea and presence of antagonism has become widespread. This belief is fraught with danger, since it leaves us unprepared in the face of various manifestations of antagonism and violence (Laclau, 2005).

As a consequence, the political cannot be restricted to parliament or envisaged as constituting the public domain or labour movements. It must be conceived as a dimension that is inherent to liberal capitalist society and that determines our very human condition. Such a view of the political is profoundly at odds with truth-and-reconciliation and rainbow-nation thinking, which is precisely the reason for the bewilderment of this thought when confronted with the phenomenon of violence in its various subjective and systemic forms. This is particularly evident in its incomprehension of chronic service-delivery protests and endemic violence, which are seen as the expression of the unruly and uninformed masses. Witness, for instance, the incapacity of liberal social scientists to come to terms with the phenomenon of enduring inequality and injustice in South Africa.

The deep crisis of political identity that confronts South African democracy, following the loss of the apartheid colonial landmarks, is linked to the necessity of redrawing the political frontier between comrade and enemy, friend and adversary. For this reason, it is imperative that we abandon a theoretical perspective that prevents us coming to terms with the exact nature of the challenges before us.

Today, the crucial issue is how to establish a new political frontier capable of giving a real impetus to democracy. This requires redefining the left as a horizon where the many different struggles, including feminism, could find a space of inscription. The notions of “active citizenry” and “radical

economic transformation” are crucial here because they provide a form of identification that enables the establishment of a common political identity among diverse democratic struggles.

7) Access to Science and Technology: Challenges of Citizenship

- a) Should we view the concentration of Universities of Science and Technology in urban areas with dismay? Is this development indicative of the devaluation of the citizenship of people in rural communities: a trend toward the leanization of rural citizenship, in so far as one has to migrate to urban areas to have access to social, economic, and political rights, heralding perhaps cosmopolitan citizenship?
- b) This lecture begins the examination of the apparent imbalances of disaggregated citizenship in South Africa. In what ways can we reconfigure democratic voice? Also, in what ways can we initiate self-reflexive transformation on the part of the shape of higher education? What, in our constitutional order, has encouraged the internal tensions that have accompanied the restructuring of the higher education system? What is the status of citizenship in the metros – Pretoria, Johannesburg, Durban, Port Elizabeth, Cape Town, and Bloemfontein? In what ways does metropolitan citizenship remedy and rectify the inequalities of apartheid colonial inequality? What should be done to ensure that people in rural communities have equal access to high-level science and technology education? Are people in rural communities mere auxiliaries to the republic? To what political assumptions and values is the urban-centrism in higher education linked to? Is this orientation an inescapable aspect of our political and economic disposition in the knowledge economy? The constitutional democracy is fading, albeit gradually, and is being corroded. A new modality of regionalized citizenship is emerging. At a deeper level, there is tension between democratic legitimacy and the realities of unequal access to science and technology. Doesn't our Constitution offer citizenship according to a schedule of rights, and these rights are justified in terms of national rather than local attributes of members? The assertion of disaggregated citizenship has the virtue of making all too apparent the internal tensions in the shape of higher education.
- c) The treatment of people in rural communities in the provision of higher education is a crucial test case for the moral conscience as well as political reflexivity of our constitutional democracy. 'The people shall govern' is an inherently fraught formula containing, in its very articulation, the constitutive dilemma of respect for human rights and politically-motivated allocation of resources.

- d) By democratic iteration, I mean complex processes of public argument, deliberation, and exchange through which rights claimed and principles are affirmed.

Part Two

Regional Inequality: Urban and Rural Divide

8) The Tragic Cost of Unequal Access to Science and Technology: The Case of Limpopo and Eastern Cape

- a) People in Limpopo and Eastern Cape live in communities with widespread poverty, unemployment, and socioeconomic inequality. It is often assumed – if not implicitly – that we can do little to bring about fundamental change. It is also presumed, frequently enough, that these maladies may actually get worse in the foreseeable future, especially with climate change and globalization. Tacit pessimism often dominates public reactions to these miseries in South Africa today. The perceived lack of technical knowledge and, therefore, of freedom can itself lead to desperation and the absence of serious strategies to remedy the miseries that we see in Limpopo and Eastern Cape. But there is little factual basis for such pessimism, for assuming the immutability of poverty, unemployment, and socioeconomic inequality. Equal access to science and technology can indeed reduce, if not eradicate these terrible problems,
- b) The political economy of extreme poverty, intergenerational unemployment, and severe inequality involves policies and strategies, but it depends, in addition, on access to certain kinds and levels of technical skills. The sense of distance between the ruler and the ruled – between the elite and ‘people on the ground’, between ‘one of us’ and ‘not one of us’ – is a crucial feature of extreme poverty, intergenerational unemployment, and socioeconomic inequality. That distance is as severe in the informal settlements now as it was under apartheid domination.
- c) For instance, how does the total food supply shape the poor and the elites within South Africa? To a large extent, this condition can be prevented by widening access to science and technology through the establishment of Universities of Science and Technology in rural communities. Unequal access to technically exploitable knowledge has an important role in

- the development of extreme poverty, intergenerational unemployment, and severe inequality. Indeed, the absence of equal access to science and technology is in itself an inequality – in the case of political rights and powers. But more than that, extreme poverty and other crises, the elite thrive on the basis of severe inequality, which includes, in the knowledge economy, unequal access to science and technology. Inequality itself is, of course, important also in the continuation of endemic poverty and unemployment.
- d) Most of us believe that in the knowledge economy, twenty six years after the democratic transition in 1994, information and knowledge are more freely available than ever before. But this is a false impression. Not only are we surrounded by reams and reams of information and knowledge, but a great deal of scientific and technically exploitable knowledge is costly and beyond the reach of the millions. In this context, free education for the poor is not more than a policy ambition. With examples from Limpopo and Eastern Cape, this lecture points a troubling picture of which access to vital skills and competencies must be afforded. While some information and knowledge are indeed available for free, the most economically valuable is costly. So as a practical matter, the right of the poor in rural areas, and of the poor generally, are severely circumscribed. And so is their freedom. This is effectively the commercialization of the means to agency and freedom.
 - e) This forces us to rethink some legal fundamentals. It raises questions about capability, agency, freedom, and justice. It raises questions about socioeconomic rights. The freedom at stake is not the familiar one of political speech, but the freedom to learn and understanding things relevant to making a living, things relevant to one's happiness and wellbeing. In the Information Age, in the knowledge economy, in the Fourth Industrial Revolution – in the Age of COVID-19 – the demands are at once political, cognitive, social, and economic. This is particularly ironic given the rise of digital technologies which appear to substantially increase access to vital information and knowledge but does so only for the few.
 - f) The attitude towards information and knowledge, implicit in this development, raises troubling questions about the rights to free speech and to know. The conservative legal interpretation of access to information and knowledge, predicated on resource availability, echoes the growing ambiguity about socioeconomic rights (Laughlin, 2008; Sunstein, 2001).

**9) Unequal Access to Information and Knowledge Institutions – Libraries, Archives, and Museums:
The Politics of Distance and Mobility**

- a) There is also unequal spatial access to libraries, archives, museums - with regard to urban/rural, suburb/township/informal settlements, as well as the different provinces and district municipalities. The unevenness of access applies not only to public and school libraries but also to university libraries. The spatial distribution of libraries, archives, and museums mostly places them out of reach of the poor, particularly rural areas. Many people in rural areas lack the reading and information skills which would enable them to benefit optimally from library services. This includes students at tertiary level and employees in the workplace; the shortage, and in many cases lack of suitable resources in the languages of potential library users, also limits their access to information and the services of the library; the unavailability of staff to serve people in their own languages and other modes of communication further limits access; many libraries are in old buildings and in buildings which have not been designed as libraries (Sheller, 2012).
- b) The creation of physical infrastructure to provide access to the facilities is a challenge; while internationally, ICTs are transforming the role of Library and Information Systems (LIS), many LIS in South Africa, in rural areas in particular, lack the ICTs necessary in today's global information or knowledge economy. Many staff lack the capacity to use the technology, both to facilitate the work of the library and to provide access to electronic information for users.

10) Deciding to Establish Universities of Science and Technology in Limpopo and Eastern Cape: The Politics of Evidence and Decision

- a) *Despite the overwhelming evidence of the critical importance of Universities of Technology for rural development in Limpopo and Eastern Cape, it would be naive to think that the decision will be based on evidence alone. Such a decision is not the same thing as technical decision making. Rather, it will involve trade-offs between multiple competing social and economic values, with only a very small proportion of the decision process simply concerned with the scientific and technical evidence of the effects of Universities of Science and Technology on rural development in the two provinces. The proposal may prompt wicked decision problems, and the search for an educational, social, and political base may fail. In a pluralistic, divided, and severely unequal society such as ours, an argument based on evidence and undisputable public good, driven by optimal solutions, may miss the mark. Given the fundamentally contested nature of most public resources allocation concerns, the use of evidence for*

decisions may not follow decision science. Naive rationality it may be, if we forget that such decisions are instead made over politics, interests, and preferences.

- b) However, the central importance of Universities of Science and Technology in Limpopo and Eastern Cape is no myth, no mere technocratic wish in a political society, in which multiple social and economic values and concerns are at stake. The debate over the establishment of Universities of Science and Technology for rural development in the two provinces, based as it is on nothing as fundamental as freedom and justice, stands on sound values. It would be fundamentally wrong to ignore the proposal, though it does not naively remove the need for political reasoning. In other words, rather than being apolitical, the appeal to evidence gives political authority on something that can turn around the lives of millions, most of them poor, semi-educated, and marginalized (Parkhurst, 2017; Pielke, 2002; Hawkins, 2015; Cairney, 2015; Fishkin, 2009).
- c) Making use of Francis Bacon, the decision makers' interpretation of the evidence is like a mirror, which, receiving rays, distorts and disorders the nature of the problem by mingling his own desire and interests with it.
- d) What beliefs and interests can bias decisions against the establishment of Universities of Technology in Limpopo and Eastern Cape? In what ways can bias, interests, and preference distort the evidence? While the ideas of Through the Eye of the Needle are still widely espoused, other ideas such as 'one of us' and 'not one of us' may compromise public service (African National Congress, 2018). A way of saying that policy implementation reasoning may not be rational and public-good oriented. There is extensive literature in cognitive social psychology, political psychology, and behavioural decision theory on how officials and elected representatives make decisions and choices. About eighteen years ago, the Council of the University of Venda resolved to redesign its mission and vision as the University of Venda for Science and Technology, but that was shot down, and the University of Venda was turned into a 'comprehensive university' like all the Historically Black Universities, all of them in rural areas. In South Africa so far, we seem not to have learned much from public psychology and decision analysis, certainly they have not been applied in decision making and reasoning at anything close to the level needed (Huddy, 2013).
- e) As we consider this proposal, we should analyse the incentives for biased uses of evidence deriving from competition within decision arenas. And we should complement this by exploring the subtle politics of evidence that drive bias through cognitive processes linked to

our values, interests, preferences, and desires. The record shows that our interests, bias, and preferences at times affect our decisions in both conscious and unconscious ways. Awareness of decision error has been noted in the last twenty six years, and that political interests or conflicts drive uses of evidence. Recent advances in cognitive sciences provide even greater insights into the origins and mechanisms of cognitive bias, particularly in situations of complexity, uncertainty and conflicting motivations. Indeed, it could be argued that it is inexcusable for decision makers to establish all the Universities of Technology in urban areas, and all the research universities in urban areas. But we should not accept the naive idealism that evidence will always be respected and honoured.

- f) Questions: In what ways, practically, can we institutionalize norms and practices that serve to improve evidence use? How can we construct a mechanism for good governance of evidence to help address the challenges and issues in policy disorientation, incoherence, and failure? In pursuit of unbiased, rigorous, and relevant evidence that is used to inform decisions that are representative and accountable to the public?

Part Three

Curriculum for Rural Development: Assumptions, Values, and Principles

11) African Languages as Languages of Science and Technology

The proposal to establish Universities of Science and Technology in Rural Communities raises complex questions of language, culture, and knowledge systems.

- a) Throughout much of African history, the basic question has been, can science and technology be taught in African languages? African philosophers and social scientists have historically sought to claim the expressive and communicative power of African languages, but in almost all African countries European languages still dominate as languages of scientific and technological knowledge.
- b) Consequently, educational theory and practice in South Africa have traditionally consisted in assessments of African languages' unpreparedness in this regard, of the ways African languages have lagged behind in the intellectual and practical activity encompassing the systematic study of the structure and behaviour of the physical and natural world through

observation and experiment. Small wonder, therefore, there is no systematically organised body of scientific and technological knowledge in an African language.

- c) In recent years, though, the hegemonic dominance of European languages in science and technology education began to lose its purchase. Accordingly, original and ground-breaking efforts are emerging to engage the centrality of language as integral to radical political, social, and economic transformation. Bringing the thinking of Fanon, Cabral, Senghor, and Ngugi-wa-Th'iongo into the centre of the decolonisation discourse, contemporary scholarship seeks to redefine the primary task of African languages as a force for self-definition and self-government. Gone are the days when the preoccupation was to 'prove' that African languages have the capacity to generate and disseminate scientific and technological knowledge.
- d) What should be done? The deconstructive challenge of African languages as languages of science and technology should be directed at the Eurocentric conception of the language of science and technology. We have to return to the source, in Cabral's apt phrase, constituted in linguistic and semantic structures, as a potent means to decolonise the African mind. The central way to assert the efficacy of African languages in the claim to comparable capacity is to begin, systematically, to institutionalise African languages as languages of science and technology. Such a way is in process at the University of KwaZulu-Natal. Thus our ambition consists in being right in our view of politics but as well as in our confidence in African languages as being structurally capable.
- e) Broadly speaking, decolonization should assume two guises. The first is the integration of African languages in curricula that would restore holistic experience, seeking to heal the rupture incurred in the last three centuries. Second, it is to explore this situatedness of African languages in the curriculum as an integral part of our lived historical, political, social, and economic existence and thought (Liddicoat, 2013).

12) Integration of Indigenous African Knowledge Systems

a) On Cognitive Processes

- As a first step, we have to expose a number of conceptual confusions. We have to demonstrate, in clear analytical detail, the interpenetration of reason, the body, and the imagination in African design, crafts, arts, sculpture, painting, and agro-processing. Western philosophers and social scientists have a deep-rooted difficulty in comprehending the

creative process that characterises the work of African scientists and technologists. They have failed to comprehend the intimate connections between hand and head. Every African scientist – a bricklayer, a chef, a musical instruments maker, and so on – conducts a dialogue between perception and reason, fact and imagination, analysis and justification, and these habits establish a rhythm between problem-solving and problem-identification. Western scholarship on African science and technology has drawn fault lines dividing practice and theory, technique and process, technique and expression, crafts and art, maker and user; European scholarship still suffers from this historical inheritance (Sennet, 2008; Pinker, 2018).

- The same Eurocentric misreading of African knowledge systems, particularly of African traditions, customs, proverbs, idioms, folklore, rituals, and festivals persists, reducing them to provision of the ground of plausible belief about the likely course of the future as well as the present, but no scientific or firm knowledge. These systems have been reduced largely to the psychology of credibility and cultural conditioning based on convention. And so they have no ground to pretend to scientific rigour based on deductive demonstration or inductive proof.

b) Science, Technology, and Culture

- What science and technology education and cultural policy in Africa calls for is a complex, many-levelled struggle – intellectual, social and political – in which the debates about the language of science and technology interlink with those in a host of political, social and economic institutional settings. One such feature is that the issues of enframing science, technology and African languages are being lived through in concrete forms. Another such feature is that these disputes in turn both feed on and are fed by various attempts to define in theoretical and practical terms both the place of African languages and culture in science and technology and the demands of an integrated multilinguistic and polyepistemic epistemology, and beyond that the shape of curricula and cultural policy and their relation to democratic politics.
- Current education and cultural politics, particularly in South Africa, are marked by a manifest paradox. The triumphant procession of global neoliberalism in African education and cultural policy seems to have come to

an end. Utopian neoliberal non-cyclical knowledge economy is being transformed into real existing inequalities and imbalances in knowledge generation and dissemination. Neoliberalism is under constant attacks from the students as well as the left and the right, from activists and academics; unwilling to continuously affirm prevailing neoliberal education policies.

- What should be done? The deconstructive challenge of African languages as languages of science and technology should be directed at the Eurocentric conception of the language of science and technology. We have to return to the source, in Cabral's apt phrase, constituted in linguistic and semantic structures, as a potent means to decolonise the African mind. The central way to assert the efficacy of African languages in the claim to comparable capacity is to begin, systematically, to institutionalise African languages as languages of science and technology. Such a way is in process at the University of KwaZulu-Natal. Thus our ambition consists in being right in our view of politics but as well as in our confidence in African languages as being structurally capable.
- There are at least two kinds of difficulty Africans encounter in studying science and technology in European languages. First, unfamiliar words and phrases, and without living English speech communities in African neighbourhoods, high-level English literacy is inconceivable. Second, technical difficulty in comprehending highly restricted vocabularies in the sciences by decolonising the educational system through the centering of African languages in curricula as part of the liberation struggle's effort to direct cognitive and institutional process, while allowing African languages to interact with and benefit from other languages.

Broadly speaking, decolonisation should assume two guises. The first is the integration of African languages in curricula that would restore holistic experience, seeking to heal the rupture incurred in the last three centuries. Second, it is to explore this situatedness of African languages in the curriculum as an integral part of our lived historical, political, social, and economic existence and thought.

c) On Power, Knowledge Systems, and Hegemony

- Society defines knowledge in a particular way. For example, it may be argued that knowledge is African, or traditional, if Africans define their knowledge as such, or if a dominant or hegemonic power defines it in that way.
- The colonial period was one of enormous social change, in all aspects of life. In the key areas of epistemology and research methodology, especially, there was a systematic campaign calling for the rejection of African intellectual systems as primitive and unscientific. The rejection became enshrined in policies and legislation that would begin to transform African society in these areas.
- The anticolonial movement or the liberation struggle is an example of how politics were able to influence the social and educational policies of African states, and also of the capacity of ideas to have an impact upon social and educational practice. Indeed, there is a history in respect of African philosophers and scientists, as well as of the importance of the 'knowledge holder'.
- One of the strengths of African philosophers, intellectuals, and knowledge-holders is not only their capacity to reflect on phenomena and their own self-understanding, but their capacity to see and understand the way they are seen, observed, and understood.
- In pointing out the primary importance of self-understanding, Africans are implicitly indicating the failings of exogenous intellectual systems. A preoccupation with being seen and observed often attaches an exaggerated importance to the anthropological process, rather than the knowledge that is being observed.
- The liberation struggle, which emphasised the integrity and freedom of individuals and societies, had a lasting effect over African intellectual traditions and played an important role in shaping ideas on epistemology and research methodology, focusing notably on authenticity and the primacy of African agency.

- Emerging out of African anticolonial struggles is the idea of individual and cultural identity as self-determining. The subjective self exists because of the free will and the autonomy of the individual. Our identity is created through a system of self-definition over which we have control. Although history has plunged us into a particular political setting, into a system with a particular set of values and a religious system, we give ourselves the initiative to define ourselves in relation to the world. All of these combine to forge and mould our subjectivity. We look out at the world with a vision that reflects the way we see and define ourselves in the world.
- In my view, Eurocentric and other exogenous views of Africa and the African are political constructions, rather than “truths or facts”. For example the so called ‘traditional medicines’ are not seen as a scientific fact but as projections of Eurocentric bias, as a justification for domination and the silencing of the African voice, as well as a reflection of the complex interaction between Europe and Africa.
- The silencing of the African knowledge systems has been a challenging and violent process. If we think of the entire colonial period, when existing African perceptions of themselves and the world were under siege, we can see that it was accompanied by significant institutional and intellectual tensions in African societies.
- Within the African knowledge systems, there is a coherent logic that makes sense to the knowledge holders and to all those within the system. It is, in a sense, like all epistemes, a closed social and epistemological system that has its own intrinsic logic. To colonial anthropologists and other outsiders, the internal logic may appear less coherent.
- In African epistemology, human beings and the natural world are subject to analysable or scientific forces. Theories concerning the way in which nature and society operate can be analysed and subjected to a process of verification or falsification using the methods of scientific inquiry.
- The question of the ‘safety of traditional medicines’ can best be examined through a ‘case study method.’ This would provide a detailed

picture of the practice, but although the data may be rich and thick, it is not always easy to generalise from this specific case and draw more general conclusions.

- The 'case study method' permits members of the medical profession, across diverse intellectual traditions, to communicate with each other effectively. This opens space for debate and further inquiry. No knowledge holder or scientist can take decisions, draw conclusions, or recommend treatments unchallenged by fellow practitioners. Such democratic discourse delimits power and constrains domination, mindful, though, of the fact that discourse is not only related to power in terms of specialist knowledge.
- With the 'Rhodes Must Fall' movement, the educational system will become much more empowering, and teachers and students will be able to talk more freely about the transformative function of education. Although many aspects of the formal university curriculum will remain for some time, new epistemologies and research methodologies are bound to appear together with newer forms of assessment. This marks the beginning of a significant contribution to all sectors of education. Instead of an epistemology rooted in Eurocentric imperialist desire and interests, a new ethos is developing, with students are encouraged to research and to develop new ideas for Africa's development.

13) Interepistemic Curriculum: Analytical and Deliberative Framework

- a) What are the benefits and challenges of an interepistemic curriculum? This would be an improvement on the centric epistemic approach, and would help to construct a template for researchers interested in the complementary possibilities of knowledge systems. Lessons could be drawn from current research in medicine, food production, and social relations. Surely, the positive results of interepistemic research outweigh the difficulties inherent in the approach. It would serve to eradicate the Eurocentric disconnection of knowledge systems which kills the vitality of our polyepistemic, multicultural, and multilingual world. This is not just a hypothetical undertaking. Some information and knowledge institutions spend a major portion of their time exploring possibilities. Libraries, archives, museums, innovation hubs and research institutes are

developing systems for organizing the knowledge of the world, so that people have a wide frame of reference. What they are doing is to open a new system of more flexible epistemic identities, structures and functions.

- b) In an interepistemic system, a field of study would be a community of scholars whose ultimate task is the gaining and construction of meaning generated from a multiplicity of knowledge systems. It would be the application of the interepistemic intelligence and imagination to social and economic realities – a shift from the bounded, territorialized epistemology. The disciplinary model has failed to make full use of the complementary capabilities across various knowledge systems. In therapy and rehabilitation sciences, the interepistemic model is beginning to receive a great deal of attention. The United Nations Organization itself has begun to explore the possibilities of Ubuntu as an imperative in international relations. Hence the declaration of July 18 as Nelson Mandela International Day.
- c) In light of this, the interepistemic approach must be integral to the cultivation of Ubuntu. The deepening and broadening of mutual recognition of humanity in all its manifestations, should be the measure of knowledge and knowledge systems. So research, broadly conceived, is essentially a cognitive, social, ethical, and spiritual process. It is an effort to explore the possibilities of stronger and broader human bonds, transcending contingencies of language, culture, community, and nation. This is a truly path-breaking epistemology. It offers a framework for a fundamental reassessment of centrist research, bringing together the social and the natural, the material and the ethical. Knowledge and knowledge systems will only have meaning if they integrate the intellectual, cultural, and practical in the common pursuit of the common good.
- d) Mathematics, physics, chemistry, biology, engineering, geology – should not pull us away from each other, as they tend to do in Eurocentric epistemology and cosmology. The traditional balkanization of knowledge systems distorts the intellectual, social, and ethical bonds embedded in our humanity. Science and technology should not undermine the immediacies and textures of lived experience, especially that of the poor and the excluded, men and women on the margins and at the periphery. We should listen attentively to their lived experience, their testimonies, their narratives, their songs, their rituals and rites of passage, their elegies, and mobilize the openness and richness of being beyond the reach of conceptual reason and power politics.
- e) So in our encounter with indigenous African knowledge holders, we must pay attention to the particular knowledge holder in front of us, and experience what it takes to know particular individuals in a world of differences and abstractions. Language and cognition, though alienating

and inhibitive at times, are based on a grammar and a syntax that is translatable. To enhance the agency of the next person, particularly those historically excluded, we must understand how they experience the world and how they imagine themselves in the world.

14) Health Sciences for Rural Development

- i. Universities of science and technology would focus on whose concerns are often marginalized and whose unfulfilled rights present fundamental challenges to inclusive development plans. Discrimination against rural communities runs deep. The health condition of this group has historically mirrored and reinforces the urban prejudices in the wider society.
- ii. Universities of Science and Technology in rural areas would both provoke and direct policy change – at the national level. The right to healthcare needs to be connected to broader national agendas such as freedom from social marginalization, poverty, and disease. Inadequate attention to the health of rural communities is symptomatic of the failure of the National Development Plan to address the issue equity. Unless there is a strong focus on equity and reaching the most vulnerable and marginalized, actions to reach National Development Goals and Outcomes will be hard to achieve. As it is, rural communities are lagging behind their urban counterparts.
- iii. Rural people recognize that they cannot address all their health problems through indigenous African technologies, especially as they face new diseases such as HIV-AIDS and COVID-19, of which they have limited or no experience. They often lack adequate access to healthcare when they need it. Universities of Science and Technology, committed to health for rural people, would act urgently to promote and protect the health of rural communities.
- iv. They would also help to demonstrate the health science in indigenous African knowledge systems. They would place health in the context of rural communities' social, cultural, and political rights. In recognition of the relevant failure of the last twenty six years to strengthen rural communities to solving social and economic problems, Universities of Science and Technology would play a critical role in paying closer attention to greater access to health education and facilities. They would serve as focal points for rural communities to raise issues.

15) Business Sciences for Rural Development

- a) The enduring inequalities in South Africa require a fundamental transformation of the rural economy. From regional inequality in access to technically exploitable knowledge to rampant health imbalances, rural development points to the need to move away from the urban-centric development modes that dominates the current trajectory, towards an integrated and inclusive approach. We need a just economy which integrates rural and urban communities. Rural communities have a legitimate aspiration to achieve the full meaning of freedom in the Fourth Industrial Revolution, but if the National Development Plan is to be successful, it needs to start rethinking the role of Universities of Science and Technology in redressing regional imbalances as part of the development of smart cities in rural areas. Not only is this approach fundamentally retrospective and introspective that seeks justice, but it is also pragmatic, given the knowledge limitations that inhibit agency and freedom in communities.
- b) The future of rural development hangs in the balance. Universities of Science and Technology would, among other things, provide a resource for enhancing the right kinds and levels of knowledge and skills so critical in the Fourth Industrial Revolution. Using the holistic approach they would provide a curriculum framework that would integrate science, technology, trade, and industry. Specifically, they would examine, first, the building blocks needed to grasp the nature of entrepreneurship in the knowledge economy. Second, they would provide guidance on how to build educated and industrial environments that support integration. And three, they would, in practical terms, show to integrate science, technology, trade and industry, as well as health. Underlying this proposal is the goal of helping rural communities appreciate the integrative mindset and what it means for the successful development of rural communities.

Conclusion

Albert Luthuli did education, politics, economics, ethics, and religion a great service by looking at lived experience, agency, freedom and justice from the inside, and more than any other believer he brought his own life into his politics. His political, social, and spiritual crisis captured so delicately in ‘The Rivonia Statement’, yields profound insights into the discourse on freedom and justice that has earned him an enduring reputation as a public servant, an attuned and ethical leader. He created an exemplary leadership style, rooted in the inward drama of being human. He is inspirational in his willingness to bear witness to the human condition in South Africa. Hence, he has become an icon, a symbol, and a metaphor of integrity, compassion, and public conscience. He made his faith the subject matter of his politics and

community engagement, and his writings have reached the advocates of freedom and justice the world over. A recipient of the Nobel Peace Prize, according to him everything can be found in the human bond deep inside of us. In COVID-29, it is proving to be critical, confirmed as it is by the Global Solidarity Movement. He grappled with apartheid's awesome cruelty. His heart was pierced, filled, stretched, and bruised, seeing his comrades in the African National Congress facing a possible death sentence.

This Inaugural Lecture travels alongside Luthuli's complex narrative of principles that both animated and troubled him, propelled him forward: how to be a human being in a violent political system. He criticized the abstractions of racial difference, insisting that we need to work out the human bonds deep inside us: how to live together, how to imagine each other in a world of differences. And just as he could not step off the traffic of politics as it was moving, so we cannot step away from the imperatives of knowledge, agency, freedom, and justice. That's why the Inaugural Lecture does not consider Luthuli's work from a remote, knowing perspective, but joins him on his journey from poor, rural Grootvlei and confronts its implications for the achievement of the full meaning of freedom and justice.

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