

WHY DO THE UNIVERSITIES NOT
FUNCTION?

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1. Some historical notes

The history of universities in Europe is not a very long one: Paris 1170, Cambridge 1209 - Bologna, the universities for the Lombards, the Tuscans, the Romans, the people from Ultra-Montana, for students from all parts of Europe. In short, they date from the late Middle Ages and were coloured by the social structure in which they emerged, and the power structure in particular. So, let me take as a point of departure the social structure in general and the power structure in particular.

A basic point in the structural transformation of western society (this presentation is limited to that), is from a de-centralised, fragmented society of relatively autonomous parts within the feudal order - often with a figure head on top but not really exercising power that could penetrate down to the bottom of the parts - to a centralised, segmented order, certainly not with a figurehead on top, but an increasingly powerful state organisation. Fragmentation in relatively independent provinces and towns gradually yielded to segmentation of the entire domain under the purview of the state into relatively autonomous ministries, departments, agencies. Gradually the significance of landed gentry exercising power over their piece of territory yielded to the overwhelming importance of cabinet ministers exercising more and more power over a piece of administrative territory.

In sociological terms this was at the same time the transition from particularism/diffuseness to universalism/specificity, from highly personal relations of a very encompassing nature, but not necessarily very standardised, to more abstract relations between people of a more specified nature - the type of relationship also associated with bureaucratisation. Grosso modo these sweeping sociological generalisations, the first one at the lateral level, the second at the micro level of inter-personal relations (and expressed in parsonian terms through essentially taken from Max Weber and Sorokin) seem to be valid. Of course, there is still de-centralisation/

fragmentation and particularism/diffuseness around, but perhaps more among families, both within and between families, than relative to territorial units inside countries. Global space, considered as a set of nation states, still retains many of the characteristics of the middle ages: there is fragmentation rather than segmentation, given the weakness of the United Nations machinery, and so on.

Let this be the first point to be made about structural transformation. We then turn to the second aspect, transformation in the power structure. Let us say that out of the middle ages came a social order with clergy on top, then aristocracy, then the merchants/burghers (le tiers état), then the peasants/artisans/workers, and at the bottom of the system the marginalised groups, gypsies, jews/moros, women. Of course, the three on the top exercised power of various kinds over the overwhelming majority of the population, the two at the bottom. The power of the clergy was essentially normative; the power of the aristocracy essentially punitive and the power of the merchants essentially based on exchange, "utilitarian", "remunerative". Their institutions were built around those types of power: Church, Military and Commerce (Corporations, etc.) Politics is as usual the mixture of the three, the proportions depending on the power relations, and other circumstances.

However, the theme to be developed here is what kind of disciplines these three layers of the social system needed as an underpinning of their exercise of power. For the case of the clergy, the answer is obvious: theology. For the case of the aristocracy the answer is also relatively obvious: military science, and in addition to that law, to regulate the exercise of punitive power inside the country, and international law to regulate its exercise outside the country. Military science could then give rise to a number of empirical disciplines connected with geometry and mechanics (for instance ballistics); law could serve as an exercise in deductive reasoning. At any rate, some basic components of the early universities would have to be shaped by the needs of the upper classes, giving rise to

the two classical faculties of theology and law, also known as relatively conservative pillars of any university construction. It should also be noted that theology and law are universalising and specific, seeing people as God's children and the King's subjects according to universal/specific principles.

However, even a society based on normative disciplines - such as theology backed up by the ultimate power of God and law backed up by the more mundane power of the authorities to inflict suffering and pain, even death, - might be in the interest of burghers. They want a stable setting in order to run expanding economic cycles of production, distribution and consumption, but they also wanted considerably more than that. In those cycles production factors and products were supposed to flow, to be traded against each other, to be substituted for each other. Consequently sciences were needed to establish the classification systems for raw materials, no doubt a basic stimulus for the natural sciences, perhaps particularly chemistry. One would also need some system for classifying human beings, establishing their equivalence: this is probably where education and psychology can be said to enter. And one would definitely need a system establishing the equivalence of various forms of capital, not only money - for instance capital now as against capital in the future, or capital here as against capital in the other country; problems that carry in their wake the whole theory of interest and exchange.

In other words, economics would be to the burghers the same as theology to the clergy and law to the aristocrats. Of course, they could do, and indeed did, engage in trade long before the science of economics emerged; just as people had been worshipping God before theologians started - in their manner to explain to people what they were doing, and particularly how they should go about it. Scientific disciplines emerged slowly, long after the emergence of the corresponding group in the limelight of the social theme, but once they have settled they seem to be lingering on long after the group particularly responsible for their function in society has waned into significance. It looks like one can assume as a general principle that university change is lagging behind social change in general. But once a discipline has been established

it will of course serve as the multiplier for the importance of that particular group.

This leads to an important question: what about the other two social groups, those over whom power was exercised? What kind of disciplines can they be seen as carrying in their social baggage, on the way up?

Maybe one could say that the peasants/artisans/workers gave rise to the emergence of social economics as a science, perhaps as opposed to business economics and national economics. Perhaps it can also be said that sociology had some relation to socialism, socialist parties, as a way of making not only the top layers but all of society visible, even transparent. And in the same vein, maybe it can also be said that the successors of gipsies/jews/moros, all the foreign workers that can be found in so many countries, and the women, are not the carriers of any particular discipline, but of transnationalism because the perspectives of other countries are being brought much closer to the heart of national knowledge production and a trans-disciplinary, even holistic approach, perhaps particularly carried by women. But all this remains to be seen, these are only some perspectives that may or not have a bearing on the reality of future university development.

Let us now combine these two perspectives, let us move forward in time from the middle ages: Aristocracy challenges the Church, Church and State are separated, the State emerges as the pillar of society carried by aristocrats who skilfully transform themselves from landowners to cabinet ministers. In their midst the King, decreasingly divine, increasingly secular, even vulgarised. Both are challenged in the grande révolution française by a bourgeoisie contesting their power, fighting for the free flow of production factors and products, including in that the free flow of individuals: individual human rights, geographical mobility, social mobility. This construction is then, in turn, challenged by the working classes but not in a very basic way: individuals are detached from these classes and given access to the construction made by the other three. All of this,

then, essentially a man's society, at the end of the 20th century, effectively challenged by woman in an on-going revolution that will still last for a long time.

In this process we are today at a certain stage: a society run by aristocrats turned bureaucrats, merchants turned capitalists and clergy turned intellectuals; the BCI complex (with the military and the police not too far away). Universities become national universities serving the interests of this construction, they become tools in the building of centralised, segmented, universalist and specific structures. And in so doing they themselves, in an obvious dialectical process, gradually take on the characteristics of that which they are supposed to serve.

Thus, they become centralised, both in the sense of the single university being dominated by a central authority (rector, the academic senate) and in the sense of the university system of a given country being dominated by a single or a limited number of universities. Further, they become segmented in the sense that the reality to be studied is divided into segments, each segment being the concern of one discipline, disciplines often mirroring the structure of the cabinet system with faculties and institutes corresponding to ministries and sections. Thirdly, they become universalistic, in the sense of aiming at the development of knowledge that is valid for the whole country, from one end to the other; possibly even for the whole region, the whole world. And they become increasingly specific, increasingly able to say something very detailed and precise.

An almost perfect fit of the nation state with the national university emerges, with the only exception that the universities might tend to be more conservative in the proportion of the disciplines, theology and law oversteering, the social sciences and holistic perspectives having to fight their way through a morass of hindrances long after the labour movement has made an indelible imprint on the social formation, and the feminist movement has entered the social stage.

2. Some problems, some challenges

Let us now make use of this little exercise in macro-history as applied to universities in order to explore some of the problems of contemporary universities.

From what has been said above, the first problem is rather obvious: segmentation. In order to serve with its knowledge production a segmented system, an increasing division into disciplines and specialisations has to take place and will take place. Linkages may be built: not only geology, physics and chemistry but also physical chemistry, geophysics and geochemistry. One may try to weave together what has been subdivided and held apart bilaterally, even tri-laterally - but this is not the same as a holistic approach associated with the mother discipline not mentioned explicitly above: philosophy, that rich delight in knowledge, just knowledge as such, from which specialisations may derive. I think it is correct to say that today all over the world, in all universities there is a conscious but perhaps mainly sub-conscious yearning for more holistic views and approaches. In fact, the demand is so high that the supply will easily become amateurish, cheap, that of a dilettant. As a matter of fact, one does not have to go that far back in time to encounter the period in academic life when at a faculty of natural sciences there would be that old, wise person who would in fact be a natural philosopher even if that were not his title. It is difficult to find that person among the technocrats, the young broilers engaged in all kinds of engineering today, which is not the same as saying that the demand is not there.

However, it belongs to the picture that segmentation has also led to fragmentation. People engaged in different disciplines are not sitting next to each other, not working next door. They work in different institutes, different floors, different buildings, even different parts of the city for universities with no campus, scattered around in the urban architecture (Freie Universität in Berlin may serve as one example). However, this latter point is not that important. Even if they are almost sitting on top of each other disciplinary borders are much more important than geographical separation: there is almost no real working contact. It is the theory of

the cafeteria/restaurant, the place where different people carrying different disciplines in their mental luggage could meet. But, as is well-known: they tend to sit next to their colleagues, separated in space by different tables, in time by different hours, enjoying their cup of tea or whatever. This of course does not mean that academic men or women never meet people outside their own institute: they can weave even strong international mafias based on the same segment of knowledge they themselves are engaged in, meeting colleagues around the globe in comparative and cooperative projects or at least in conferences. For most of them it would be easier mentally to associate with a colleague in the same field on the other side of the earth than with a colleague in a different field on the other side of the corridor.

Thirdly, a major problem of contemporary universities is their size. They are so big that the bureaucratic aspects become only too visible, on the outside of the structure so to speak, not something organic deep inside the structure helping things flow effectively. Of course, one can still find people who run their academic activity like Wittgenstein did at Cambridge, a little room, a set of folding chairs by the door, each student picks up a chair and when there are no chairs left there is no more room. Smallness can be found inside bigness for those who understand how to build a niche and cling to it. But by and large bigness comes together with universalism /specificity and creates an atmosphere of impersonal, even unpersonal and anti-personal behaviour which is not at all conducive to scientific discourse. Such relationships may be tolerated in the railway station or in an enormous church where everybody is relating, presumably, to God and not to each other - but not at universities. Dialogue is essential.

I think it is difficult to describe what bigness of an organisation does to people, and how excessive size may be harmful to academic work. On the one hand, there are also positive aspects. Bigness may be a source of fame and hence a source of pride for the member of the university,

professors and students alike. Bigness may also be a key to diversity and hence to more symbiotic relations: there is simply more to pick from. Bigness may attract funds and the one indicator in the race for supremacy among universities.

On the other hand, however, with increasing size bureaucratic rigidity sets in. Creative activity presupposes a certain flexibility. Creativity is not like a predictable link in a production chain; inspiration is difficult to plan. More concretely, most or many researchers probably have the experience that in some periods they have to contract into themselves, almost meditate in an unmediated manner in order to arrive at new insights. In other periods they have to expand and touch others, orally or in writing, in order to get feed back, dialogue. There is a contraction-expansion rhythm, and the wave lengths are far from regular and far from predictable. In a small organisation it may be possible to rearrange schedules so that they fit individual creativity rhythms better. In larger organisations this is almost impossible: "if we do this we might have to do it for everybody else and the result is anarchy, chaos". The big university extends administrative routines to its members and they have somehow to lock in with them, like cogwheels. As a result, even the most creative researcher tends to end up at the tail end of an enormous machine, feeling run by the machine which he is supposed to make use of, for the avowed purpose of the whole organisation: the production and dissemination of knowledge. In short, as so many people complain: he becomes administrator, teacher rather than researcher.(and usually a bad administrator, in addition).

I would not take that complaint too seriously. A good academic should be perfectly able to do all three. But they should be meaningfully and well done, and my own experience is that this is so much easier in smaller than in bigger organisations. A problem can be solved immediately through a little conversation or a meeting that can be convened on the spur of the moment; the problem is not transformed, even

perverted, fragmented and segmented or appropriated by the centre for endless deliberation with delayed decision making or none at all. As a result one passes time in faculty meetings discussing problems of other institutes of which one has no knowledge, no insight; problems that have been kicked upstairs with the hope that a third party might be able to come up with a formula the parties in conflict can live with. The likelihood is that a third party cannot, in which case the problem continues bouncing up and down like a rubber ball, watched rather than solved by faculty members looking at their watches.

Fourthly, universities tend to become too vertical, and more so the bigger the university although size is only a sufficient, certainly not a necessary condition for excessive distance between high and low. In a smaller group, in the classical university where the studium generale was a basic form, open without restriction to students from many parts of Europe, tying them together with scholars in small units, interaction could be very tight. The obvious symbiosis between teacher and learner- with the teacher conveying his insights and growing in the process, to the extent that he is challenged by the learner. In mass production universities this is absolutely impossible for the simple reason that there are too many learners per teacher; there is no time budget that would make it possible. Professors, knowing this, tend to escape as quickly as possible, running away from the universities after the minimum of teaching and administrative duties have been performed - thereby increasing verticality. even further. The students are not only at the bottom, but marginalise

And the bigger the size, the more the administrators will tend to come out on top of everything because more and more specialised skills are needed to run a complex or at least complicated machinery. It is only in the smallest institutions that more artisan-like, amateurish administration can operate, all but eliminating highly specialised administrators, leaving the tasks to professors, assistants and students, even together. Of course, this is what clever units of academic pursuits can do, even inside a big university, finding a niche in the mega-machine, calling

it an institute, maybe with geographical separateness (a house) running it as if it were totally autonomous, with a minimum umbilical cord to the machine. Often such institutes can become very productive, but they may have to pay for their productivity with less leverage on the machine, and particularly on the budget-making process. But then, again on the other hand, their productivity may attract international attention, help them build international networks, secure them under international umbrellas (for instance UN organisations), even with funding possibilities. Transnationalisation, not nationalisation

Universities are segmented and fragmented according to what has been said above, in addition they tend to become big and vertical - a combination otherwise referred to as an "alpha structure". Why? Presumably because they are important building blocks in the nation state construction. They are national, at least the more important ones - even if they may be run basically with private rather than public funds. Their knowledge production has four recipients : other intellectuals, in the same field; the public at large, corporations and bureaucracies, with the latter two paying (private versus public) on the basis of money received from the public at large, as corporation customers paying for goods and services or state citizens paying their taxes.

In return for permitting intellectuals to engage in their intellectual pursuits, very often at their own discretion, they expect something in return. Something useful for production and profit by the corporation, and for administration and control by the bureaucracies. They expect loyalty in times of crisis, and not too much outspoken criticism. To hope that he who plays the pipe will not also to some extent call the tune, or at least tell the piper which tunes not to play, is somewhat naïve. On the other hand, wise corporations and wise bureaucracies know that they get the best results by having a hundred flowers bloom, leaving intellectuals more or less at their own games, watching them in the sand-box, occasionally picking out one or a few who seem promising and amenable. That approach may not yield the

same quantity as can be obtained by forcing all intellectuals to move in the same direction according to a plan, but may yield considerably better quality. Bargains can be struck, often under the banner of "academic freedom", a freedom usually more easily obtained for research than for teaching (an example being the relative freedom of the academies of sciences in the socialist countries, as opposed to the control exercised over universities, predominantly teaching institutions).

Ultimately what this means is that the universities are at the disposal of the nation state. The national team in any sport is not supposed to compete for other countries but for their own; ultimately the national team in any discipline is supposed to work for its own country, not for any other country. They should be mobilisable for the national cause in any field of international competition, not to mention international conflict. What this means is that the universities are not universal in the sense of global; they are national universities as they are often referred to, however universal they may be in the sense of covering many disciplines. Actually, since they do not bring these disciplines together ("uni"), but rather keep them apart ("multi"), the term "national multiversity" might perhaps be more adequate than "university". The transnational and trans-disciplinary university, global and holistic to use even more pretentious terms, is still to be made. There are efforts in that direction, such as the Inter-university Centre in Dubrovnik, the United Nations University in Tokyo, the Université Nouvelle Transnationale in Paris. But these are only efforts, and the more transnational and transdisciplinary they become the less funds do they receive..... The contradiction inherent in the expression "national university" will continue hampering human knowledge production for years, generations to come, and resist the "academic guerrillas", or incorporate them.

Strangely enough, and this is point number six, in spite of having such a central position in society, universities are rather isolated, marginalised. Here they are, producing knowledge for corporations and bureaucracies, constituting together with them the three main officially recognised pillars

of modern, western society (the military and the police being less applauded as pillars). And yet, there are clear signs of marginalisation. Physically it may take the shape of the campus, literally speaking an enclosure for the cultivation of the mind rather than the soil - on the latter lawns and buildings are supposed to grow. Of course, the campus may be a good setting for academic freedom and for withdrawal from the hustle and bustle of city life (although withdrawal for creativity presupposes much more isolation than that, also from colleagues). But the price paid is a detachment from society that is only too compatible with the idea of feeling above society or the society feeling above academia - the twin sides of the town-gown relation.

On campus, tribal, even sectarian, rites are performed, students are initiated into rituals, they learn how to talk esoteric languages, and they develop endogamous habits, associating, dating, marrying among intellectuals, even intellectuals in the same disciplinary sub-tribe. Obviously, this contributes to the isolation. In a family of academics non-academic experiences do not easily enter. And this, in turn, is only too compatible with the focus on verbal activity, written and oral, as opposed to practice.

Historically, the roots of this isolation are probably easily seen: monasteries, mediaeval monks as the carriers of the Word, in oral as well as written forms; ultimately also the producers of new knowledge. What is new are two important aspects: whereas clergy, including the monastic orders, in a certain sense were on top of society, intellectuals are more the servants of the two pillars mentioned. They have suffered a decline in status over the centuries, due to the successful fight for a position at the top of the second and third estates of the classical order. Secondly, and very much related to the first point, celibacy is no longer practised among the holders of the Word. Women are not only permitted to reproduce together with intellectuals, but also to produce knowledge although the latter has been and still is a slow process indeed.

And yet the universities are strange places not only in the sense that often very strange problems are explored . They have more in common with all kinds of service institutions today in general than with the churches of yesteryear. In the churches, the sender of the Word, the priest, and the receivers of the Word, the congregation, could live together for a long time, one generation, even two for that matter. They might be tired of each other in the process, but they might also grow together. Universities are like shops or railway stations. There is a service staff of administrators and professors staying on and on, there are customers (students) coming for a short while only to be serviced, pick up their diploma and leave - possibly leaving behind some fees in return. To whom do these institutions belong? Those who pay will say: to us! The permanent staff will say: to us! The overwhelming majority of the members of the institution, the students, will say: to us! There may even be some revolt and muted voices from the public at large, those who ultimately support the institution through their labour: to us! So, there is the setting for the tremendous tension universities have gone through in the last decades, tensions that by no means have been resolved. And they all derive from a common denominator: the universities are not clearly integrated anywhere, they are detachable and detached, to a large extent isolated and marginalised.

All six points above have something to do with structure: segmentation and fragmentation, size and locality, the national character of the university, and yet its marginalisation. Let us now turn to the content of the product which we all the time assume to be knowledge, its production and distribution to end users high and low in society (for production of profit or control, or simply for consumption, even enjoyment), and to users (students) who presumably themselves will produce more knowledge, or distribute it to other users. What kind of knowledge? Can one say something about the epistemology, the nature of the knowledge, as a consequence of the structural characteristics just mentioned? I think one can, and in a relatively precise manner by making use of these six structural

characteristics, one by one.

(1) Segmentation would counteract more holistic approaches. Specialists would emerge in their disciplines, possibly universalising in the sense of having even world-encompassing networks, but nevertheless within the discipline. This would guarantee that the specialist will remain on tap, not on top. On top decisions have to be made from a more holistic perspective, at least not as narrow as a monochromatic university discipline. Whether taken by the elite or by the public at large, through more or less direct democracy, the basis for a decision will definitely be broader. The expert who is a generalist rather than a specialist, holistic rather than fragmented, would threaten this division of labour.

(2) The pattern of segmentation is solidified through fragmentation. There will often be multi-disciplinary committees, seminars, even research groups on campus, but they will be marginal, subsisting on shoestring budgets if any budget at all, and not integrated with teaching activity except in very particular institutions. Given this, universities can be trusted: the knowledge production will have been sorted in advance in predictable boxes already built into the organogram of the university, with its faculties, institutes, etc. Surprise-free.

(3) Given the size, administration and administrators will be on top of the researchers/teachers; professors would rarely be on top of administration. This means that the structure can be maintained, the professors forced to compete within their own fields as laid out by the administration, and the sheer weight of institutional problems will tilt the activity in the same direction. This will also apply to such classical holistic disciplines as philosophy, theology and law: they will be subdivided into sub-fields and sub-sub-fields until the point that a love for both Knowledge, God and Justice wanes and disappears into insignificance.

(4) The verticality of the structure will make for division of labour : those higher up in the pyramid producing theories, those lower down collecting data. However, if in general people have a tendency to stick to the paradigm, the intellectual frameworks they develop in their twenties, then there is a contradiction here. Those entitled to develop theories have their paradigms already set; those with new paradigms are not quite entitled to launch themselves with new theories, yet. Of course, the exceptions to the rule are numerous, indeed. Totally new insights may come at a later age, young people may be imitators with nothing original in them at all, regardless of what opportunities they are afforded, and there are young people capable of making theoretical breakthroughs and after that breaking through the social walls surrounding them.

But regardless of the truth of all of this, two observations remain: an unnecessarily combative, conflictual relationship between holders of different paradigms seeing themselves as carriers of nothing but truth and the others as carriers of no truth at all. And, then, a general tendency towards conservatism because of the vested interest in the survival of one's own paradigms, among other reasons because of the knowledge and the techniques that are inextricably tied to them. In part, this explains why certain modes and forms of knowledge production linger on long beyond their usefulness for any solid power group in society, and why the arrival of a new type of thinking on the academic scene is so dramatic. The whole pattern would tend to foster, and is indeed reinforced by a general tendency towards either/or rather than both/and thinking. Theories in plural, and insights in plural, making reality transparent but in different directions, supplementing rather than substituting for each other, seems a much more valid approach, but hard to arrive at in this type of climate.

(5) The national character of the knowledge production has as its consequence that the national idiom is reflected in the product. By that I do not only mean the impact the national language has - which is considerable - but "deep language", or cosmology as I have referred to it elsewhere in an essay on

saxonic, teutonic, gallic and nipponic intellectual styles, to mention but four of them. The differences are so penetrating, the national idiom so strong, that any talk of a general, universal, scientific methodology becomes merely rhetorical faced with such discrepancies. Of course, that one national idiom may superimpose itself on others simply because that nation superimposes itself (or group of nations), so that the net result looks homogeneous, "inter-subjective" from one end of the world to the other because they have all been trained in the same idiom, is quite another matter. I am not saying that this is good or bad, although I would probably say it is good: diversity is retained. But that diversity should be made use of symbiotically in a dialogue between intellectual styles, rather than concealed under a cloak of hypocrisy which essentially is there to hide the heavy dose of cultural imperialism the world has been and is exposed to - from the West. This process, incidentally, is probably much stronger after than before colonialism because it is carried by much stronger people: transnational operations and international bureaucracies and organisations rather than colonisation by the bureaucracy (with military and police) of one particular nation state alone.

(6) The isolation has as a consequence a peculiar, somewhat castrated character often found in the knowledge product. Above segmentation in discipline and fragmentation in institutes and nations have been lamented. In this connection two other points can be made: the separation between teaching, research and practice, and the closely related separation between empirical, critical and constructive research. Obviously we are dealing here with two triangles crying for integration! That teaching and research belong together is recognised by most universities and this is already a positive sign (note, however, the separation of the two in the socialist countries, with some benefits but by and large tremendous costs both for teaching and for research). But the integration of the two with practice is mainly done in schools of engineering

and schools of medicine. Even in faculties essentially training future teachers, there is almost no practice of pedagogy. Only few universities have attached schools. The same applies to schools of law, even schools of theology, schools of social sciences, or humanities and for most of the natural sciences - except for adventurous students who manage as "extra-curricular activity" (a terrible expression, from the more holistic point of view there is no such activity) to smuggle some practice into the system. But practice is always goal-directed, and there is always some kind of value one wants to maximise or optimise. Practice is good or bad, not only a question of what is true or false. Under the doctrines of "neutral", "objective", "value-free" science, only those values are accepted that are not seen as values because they are protected by a heavy consensus. Hence, for medicine, health; technical efficiency for engineering, etc.

This means that universities harbour in their midst a strange virginity relative to values. Instead of making them explicit, exploring them, lining them up as legitimate objects of enquiry and as parts of a scientific construction without necessarily adhering to all of them, some of them or any one of them; they are somehow brushed under the carpet. Empiricism reigns, connecting data and theory inductively and/or deductively; criticism (evaluating a state of affairs from the point of view of values) and constructivism (speculating on how certain values can be realised in the light of certain theories) recede into the background, and have to struggle to come up in front. Obviously the three are interconnected as they are in a full-fledged discipline like architecture (integrating from the very beginning research, teaching and practice ; empirical approaches, critical approaches and constructive approaches); characteristically enough only accorded a relatively marginal position in universities and technical high schools, among other reasons because it borders on "arts" .

Summing up these six structural influences on university epistemology, for most people identical with epistemology, tout court, one is left with a feeling of something unreleased, something

tied up by partly self-imposed constraints, often unreflected, very often philosophically rather untenable although much energy has gone into efforts to show that they can be derived from high principles and are not merely the partly unreflected results of the whims of history. It is like a human being wounded by humiliating experiences, from infancy via childhood, school, work and family, whipped into shape as some kind of unreleased personality, having to defend all of this as an expression of "maturity", convincing nobody except, possibly, him/herself. But, however that may be, what is important is not to fall into the trap of regarding the means of production, the mode of production and the products in university knowledge industry today as in any sense the final word in that matter. A century hence, perhaps only a generation, it will all look quaint and outmoded. Then people will ask themselves how it was ever possible not to see the constraints under which one was operating - and they will certainly not necessarily agree with the present author as to which these constraints are.

(7) Finally, I think the point should be made that the universities have much too much money. It is a point hardly appreciated by vice-chancellors in particular and university staff and students in general; it may nevertheless be true. I am thinking then above all of the knowledge production, using a simple production function for knowledge as for any other product with inputs from nature, labour, capital, researchers, and administrators. The inputs from nature are the sense impressions and specimens brought into the laboratories, as fresh inputs or as processed inputs in the form of books, articles and so forth on which researchers are also known to feed. The input of labour is the work of those who collect data and process them, perhaps up to the first steps in data analysis: the assistants. The input of capital is the whole enormous input of research equipment for collection, processing and analysis, recently making a quantum jump upwards because of the arrival on the scene of computers in general and data processing in particular. The input of researchers is, presumably, the input of the

creative mind "making the data sing", getting the message or imposing it upon the data, or both. And the input of administration is what the administrators do in organising all of this, tying it together.

Keeping the first factor constant for the sake of the argument, the general hypothesis would be that there is a transition from labour and research intensive methods of knowledge production to capital and administrator intensive research; a transition from the artisanal not only to the industrial but even to the automated mode of production. In the beginning there was the researcher contemplating impressions, may be having some disciples putting them in front of him. Within this mode one might perhaps distinguish between the labour intensive and the creativity-intensive forms, the latter coming closer to philosophy. There is the period of manufacturing knowledge where these creative brains are put in the same house, next to each other, only that it is cerebral-facture rather than manu-facture. Then, more capital is put into the mode of production, assistants can be hired, more data can be brought in. The researcher is sitting on top of social pyramids producing theoretical insights for the top of knowledge pyramids.

Knowledge production has long been like this, but if even more capital is injected, and in the form of capital goods, then the researchers will gradually wane into the background and there will be a decline in creativity-intensive activity. Thus, there will be enormous amounts of data and ready made programmes for their interpretation, all of this administered in a highly predictable way by professional administrators. The conclusions will increasingly become predictable from knowledge of the organisation producing the knowledge rather than by knowing the inputs, the data, simply because the conclusions are already built into the programmes of analysis. Since only Big Money can pay for Big Knowledge, the net result is an even higher dependence than before on the two pillars of modern, western society: bureaucracy and

corporations. Much capital and little creativity, much data and little brain will be the result, substituting enormous quantities in the production for quality, much like what is done in other fields of modern social life, for instance food production. The work that is accorded Nobel prizes, is produced according to plan rather than inspiration. In short, a system approaching the end of its viability.

3. Some Conclusions

According to this line of thinking, what would be possible reactions, even alternatives? I shall not try to approach that in a normative manner with efforts to project the good, alternative university, but rather, trying, once more, to see it in the light of likely historical processes. These processes are actually of two kinds: macro-processes at the big, societal level in increasingly ungovernable societies, and micro-processes inside the universities themselves, more or less synchronised with the former.

Segmentation was the price paid for centralisation just as fragmentation was the obvious concomitant of decentralisation - the former an empirical fact, the latter rather a tautology. The general hypothesis: both centralisation and segmentation have reached their upper limits, processes of decentralisation and integration will have to set in. In the historical mini-perspective expounded above, the fifth layer of marginalised groups in the nation state have been seen as the carriers of that type of process, to some extent, with the gradual devolution of power back to regional and local levels - ultimately also in foreign affairs. That this process goes more quickly in some countries and more slowly in others, that other countries are still on the road towards centralisation, that the process may be reversed - all that goes without saying. That belongs to history, history is like that - yet there are trends.

But what would be the corresponding processes in universities? In a sense it is rather obvious, using the list of structural

factors in the order given above: a move towards trans-disciplinarity, holistic approaches with a renaissance for such fields as philosophy and theology (the latter not necessarily understood in the western sense); a corresponding integration at the inter-institute and inter-personal level, bringing researchers of various inclinations and specialisations closer together; as an obvious concomitant of this a drastic reduction of size by sub-dividing two big universities and facilitating the emergence of many small ones. As a concomitant of that again a reduction of the vertical distance, making universities more collegial, more like academies, in the classical Greek sense. As a concomitant of all of this, increasingly tying universities to the local level rather than the national and regional levels, in other words down to the municipality and the subdivision of big cities the same way as it has happened in recent generations for secondary education, the Gymnasium, lycée (and was always the case for primary education). As a consequence of all of that, forging stronger ties between academic and non-academic life, building on the traditions of popular universities where people can come and go, possibly staying for four years but over a period of 25 years, not only in their youth. As a consequence of all of this, new modes of production or knowledge, more able to integrate theory, teaching and practice.

And here there is much to build on.

The people's high schools, for instance in the Nordic countries are usually quite good at combining practice and teaching (but missing in research). The universities are good at combining teaching and research (but missing in practice). And then a link has existed for a long time, both in corporations and in bureaucracies, between practice and research. In short, we do not only have schools (teaching only, no practice, no research), institutes (research only, no practice, no teaching), and work (practice only in the form of production, no teaching, no research). But what we are still bad at is integrating all three, with the exception of such examples (alluded to above) as medicine and engineering. And finally, a transition to more artisanal modes of production, or regression as some people, intoxicated with the allure of calculators, might say.

It should be emphasised that nothing of this presupposes provincialism. Universities were probably more international in the Middle Ages than many of the national universities are today. Transnationalisation was more of a reality, to a large extent carried by Latin as a common tongue. Thus, new universities - even at the most municipal level - might easily become transnational universities at the same time, spreading their networks around the world, connecting with similar institutions with the same capability of integrating teaching, research and practice (and empiricism, criticism and constructivism). And this, of course, is where the computers nevertheless enter and in a most fruitful way, facilitating transnational communication, rather than transdisciplinary interpretation, which I think still, not to say for ever, is reserved for the human brains with all their tremendous strength and weaknesses.

In conclusion: a transition back again to creativity-intensity, saving capital. Less money will be needed. Among the objective conditions referred to above, this is the only one that has some certainty about it: there will be less money, there is already much less money in all the countries that increase the budget for the ministries of "defence" and "justice" and decrease all the other budgets, including education, culture, welfare.

But people's thirst for knowledge, as producers, disseminators and consumers will not be quenched that easily. Maybe this is even a basic human need, something that makes us human, some need for interpretation, perhaps in order to know whether to identify or not to identify with what is. The satisfaction of that need can certainly be facilitated with some money, but also be killed with too much money. The advent of the pocket book, the universities of the air, the fantastic possibilities of mass media when they are not merely used to dispense garbage - all these points in the same direction: democratisation of knowledge, at least of

knowledge consumption. And all of that also points to new modes of knowledge production, more participatory, hence more decentralised, better distributed, smaller in size, more local, more accessible. Some generations ago one thought in terms of one university per nation. Recently the slogan has been one university per million. It is high time we think in terms of one university per 100,000, maybe per 10,000. All that is needed is a new way of thinking about universities. If universities do not come up with new models themselves be sure that somebody else will do it for them, and not necessarily the way they would most appreciate - but in the form of strong competition where the old wave will gradually have to yield for the new. This will happen in any case - in all probability - so why not facilitate rather than impede, in an artificial dialogue?