

1979
6-11-1971
On Starting a University

Roger Revelle
Harvard Center for Population Studies
9 Bow Street, Cambridge, Massachusetts 02138

During the seven years from 1955 to 1961 I experienced the fierce joys of helping to found a new university. As with most things one does for the first time -- making love, becoming a father, getting a Ph.D. -- this task was approached with more enthusiasm than knowledge. Lovers and fathers can try again, and apply what they have learned; some people even study for another doctor's degree; but people who start universities are unlikely to have a second chance to practice their craft or art. Nevertheless, the experience, though amateurish and described herein impressionistically, may bring enlightenment to others.

In the beginning my colleagues and I did not mean to start a university, our aims were less exalted. We were members of the faculty of the Scripps Institution of Oceanography*, an isolated research and graduate teaching laboratory of the University of California. The nearest major universities were in Los Angeles, 120 miles away from our location in the San Diego suburb of La Jolla. Our students coming up as doctoral candidates were examined by committees appointed by the graduate dean at UCLA, and they rarely did very well. We thought this was due in large part to our own narrow specialization and to the lack of an atmosphere of fundamental science in La Jolla. It seemed to us that we could overcome our difficulties by an academic invention -- a

kind of publicly-supported Caltech -- located as near as possible to the Scripps Institution. In this way we could attract faculty members in the basic sciences -- physics, chemistry, mathematics, biology, earth

sciences -- and in engineering, who could in turn recruit and train better

* At first, only a few Scripps people were involved: I remember especially the late Carl Eckart, Charles Wheelock, Leonard Liebermann, and Jeffrey Frautschy.

students than we had been able to find by ourselves. Some of these students might be lured into oceanography. We visualized the new school as a rather small affair, with perhaps 150 faculty members and 1,000 students.

The times were right, both locally and nationally, for such an undertaking. In those days San Diego was an integral part of the military-industrial complex, and it was prospering mightily through manufacturing high-technology hardware. But some thoughtful local people realized that the city had an inadequate base in research and development. A school of the kind we proposed might be a magnet for research scientists and engineers, and it would be able to produce the bright youngsters needed by local industry. At the same time science was riding high on the national scene. After the traumatic Sputnik experience in 1957 there was a panicky push for much greater federal support of scientific research and education.

Although some of the political and business leaders in San Diego thought we might have a good idea, they were cautious, and they found it hard to visualize just what we were talking about. Fortunately, we oceanographers had a good friend in the late Rear Admiral Rawson Bennett, who was then the Chief of Naval Research. Bennett was a huge man with a fierce glower, tampered with great personal charm. He was well known and much respected in San Diego, having been stationed there several times. We persuaded Rawson to come out from Washington to speak at a luncheon for the local peers of the realm. With his usual combination of bullying and charisma, he convinced them that what they needed more than anything was a new graduate school of science and engineering in La Jolla.

The next two obstacles were harder to overcome. They were the Committees on Educational Policy of the Academic Senate, and the Regents. (The central university administration was less of a problem -- Bob Sproul and Clark Kerr, who succeeded Sproul as President in 1958, were both push-overs for bright, new ideas. Besides, as we learned later, Clark had bigger fish to fry, and our proposal fitted in with his schemes.)

The Committees on Educational Policy consisted almost entirely of professors from Berkeley and UCLA. They were experts at seeing clouds no bigger than a man's hand. It was clear to them that a new graduate school would draw money away from their own campuses; it might even attract outstanding scientists who could better serve mankind in Berkeley or Los Angeles. They thought it would be nice to have an undergraduate school at La Jolla, managed by a farm team of dedicated teachers, which could provide well-trained new graduate students for their own laboratories. It was suggested that San Diego's problems could be handled by locating an extension division of the UCLA College of Engineering in the city.

Neither of these comfortable notions appealed to the local political and civic establishment, who by this time were thoroughly converted to the proposition that they must have a genuine Technische Hochschule, around which they could build a San Diego version of Boston's Route 128. The day was saved by a special subcommittee appointed by President Sproul, containing several Berkeley Nobel prizewinners. They thought we had an exciting idea which, at a distance of 600 miles, would not be much of a threat to their own domains, and they wrote a positive report.

The mayor and the city manager, accompanied by a delegation of notables, appeared before the Regents in a public hearing. To sweeten their pitch, they offered to give the university 50 acres of the city's Pueblo lands adjoining the Scripps Institution. (The small matter that this land would have to be voted to the university by the local citizenry was temporarily neglected.) The Regents were impressed; Clark Kerr made a favorable recommendation; and it was agreed that, provided the people of San Diego would vote to give the 50 acres, a graduate school of science and engineering would be established in La Jolla. The gift was approved by more than a two-thirds majority in the next election. Soon afterwards I was appointed Dean of this imaginary enterprise, and Director of the University's La Jolla Campus.

The School of Science and Engineering never actually existed. Before a building could be built or a plan could be drawn, a study appeared, prepared by the state government in Sacramento, on California's future needs in higher education. California was rapidly becoming the largest state in the Union; it was adding half a million people to its population every year. The state government had its own demographer. In the tradition of his trade, he projected the existing rate of growth into the future, and declared that the state's population would exceed 40 million before the end of the century. With such a population, it would clearly be necessary to expand all the segments of higher education in California; the private colleges and universities, the junior colleges, the State Colleges, and the University of California itself.

To meet these anticipated needs, the Regents gradually decided, with considerable help from President Kerr and his men, not to permit

Berkeley and UCLA to grow without limit, but rather to seek funds for the establishment of three new large campuses. Each of these was to be planned for an ultimate student population of 27,500, and this magic number was also to be the limit for Berkeley and UCLA. (Why 27,500 instead of 25,000 or 30,000 or even 20,000 or 40,000? There may have been good reasons, but if so, no one can remember them today.) One of the new campuses would be located somewhere in San Diego County, and a large architectural firm was employed to seek out possible sites.

We oceanographers had already decided where the site should be. It was the land belonging to the city of San Diego and to the Navy, on the rolling, canyon-cut top of the mesa in La Jolla, just north and east of the Scripps Institution and of our newly acquired fifty acres. Most of this land was undeveloped, covered with a thin forest of eucalyptus trees and lemonade bushes; the remainder contained the wooden huts and other structures of a Marine Corps Rifle Range. All of the area was within two miles of the ocean shore, and part of it was bordered by the high, steep cliffs of the Pacific. We thought it was the most beautiful location for a university on earth. Moreover, its close proximity to the Scripps Institution, which was well regarded throughout the scientific world, would give some sense of academic reality to the beginning stages of the new university.

Despite our certainty about the site, the architects quite properly went ahead with their assignment, conducting an elaborate and protracted study of a dozen or so possible locations within the county. This turned out to be a good thing, because it gave us time to think and learn about what needed

create a new university,
to be done to / and more important, to bring new people with insight and
imagination into the academic planning. The great chemist, Harold Urey,
came in 1958, and he was soon joined by James Arnold in Chemistry, Keith
Brueckner in Physics, the late David Bonner in Biology, Albert Engel in
Earth Sciences, and Melvin Voigt as University Librarian.

La Jolla Campus

We succeeded in establishing our own autonomous/branch of the
Academic Senate with its own Budget, Educational Policy, and Campus
Planning Committees, and we were able to use our hypothetical School of
Science and Engineering as a seed bed for new faculty appointees for the new university.

We decided that our objective should be to build a foundation which
could ultimately become one of the great universities of the world. In the
euphoric days at the end of the 1950's this did not seem an unreasonable goal.
The people of California appeared to be convinced that their future depended
on higher education and scientific research; San Diego was a lovely place to
live, as yet unafflicted by the smog of Los Angeles; people like Kenneth Boul-
ding and Daniel Bell were beginning to talk about the coming post-industrial
society, in which knowledge would be the premier resource and universities
would hold the future in their hands. Best of all we had a chance to make a
fresh start, unencumbered by the freight of traditional university organizations
and structures.

At the same time we knew we faced serious obstacles. The Scripps
Institution had only a small specialized library; a great university research
library would take a discouragingly long time as well as vast amounts of money
to build, if indeed the task could be accomplished at all with such a late start.
San Diego was a medium-sized, stodgy city, about as far from being an intel-

lectual center as one could get. Its best-known cultural attraction was a first-rate zoo. Social and political dissent were frowned on; La Jolla even had a real estate broker's covenant not to sell or rent houses to Jews.

We read Rashdall's History of European Universities, learning from it how unchanging the central problems of universities are, and/inspired by the story of the Europe-wide role of the University of Paris in the twelfth century, when "Imperium, Ecclesiasticum, Studium were the three pillars of Christendom." Our aspirations were lifted by Ortega y Gasset's Mission of the University, with its central theme that the purpose of the university is to enable human beings "to live at the height of the times." We began to learn all we could about Daniel Coit Gilman, who founded Johns Hopkins, the first true university in the United States, and helped to build the University of California in its early days, about Andrew White of Cornell, and Charles Eliot, who transformed Harvard. William Rainey Harper, the founder of the University of Chicago, became my particular hero. His field was Hebrew, almost as remote a discipline as oceanography. John D. Rockefeller tried for many years to give him enough money to start a new small college in the Middle West. But Harper patiently turned him down year after year, meanwhile continuing to teach Hebrew on the Chautauqua circuit and in small colleges. He insisted on nothing less than an endowment for a new university, which would be great from the moment it opened its doors, and finally Rockefeller capitulated; in the long run he and his family gave 75 million dollars to the University of Chicago. Harper was ruthless in recruiting faculty. The story is told that he virtually ruined Clark University in Worcester, Massachusetts by secretly

luring away all its best men with extra-high salaries. Finally he called on the university president, to tell him what he was doing and offered him a job too. The president threw him out of his office.

We believed the fundamental problem was to define the purposes and role of the university within the larger society. Those were the days when Clark Kerr was developing his ideas about the "multiversity" -- the university as a kind of academic department store which supplied goods and services to meet the demands of many sorts of customers. Some other people clung to the ideal of universities as ivory towers, whose inhabitants watched and criticized society, sounding cries of alarm at suitable intervals, and signalling to each other through the outer darkness.

We preferred a different metaphor. The university was the modern counterpart of the medieval cathedral, rising in the heart of the city and lifting the spirits of men, serving their aspirations and bringing reality to their ideals. The university must be diverse, like a cathedral it should have many chapels. Just as the building of the cathedral absorbed the devotion and skill of unknown craftsmen, so the building of the university was a cause in which modern men could lose and find themselves. In education the university, like the cathedral, should serve in appropriate ways human beings of all ages and conditions, not simply a privileged generation.

Among its purposes, the university should not only conserve through scholarship the best in the past and seek through research the knowledge to guide the future, but it should also cherish the arts that give insight into the present.

Having observed Berkeley and UCLA from an inside-outside position, we were depressed by the fact that these huge faculties found it almost impossible to innovate. They could react to supposed threats to their welfare or freedom, and the committees of the Academic Senate were fairly good at carrying out traditional functions, but they were unable to develop or obtain agreement on new ideas. (Robert Hutchins had already reached the same conclusion in his famous second lecture on being a university president, when he concluded that patience was the primary requisite for the job, far above fortitude, courage, or practical wisdom. Not being a patient man, his corollary was that the presidency of a large university in the United States is an impossible task.)

We believed this problem would not arise if the university remained small enough so that all faculty members and administrators would know each other, and be able to originate and develop new ideas in the way ideas usually happen, by the interaction of human minds in conversation. But we were charged with building a large university, which was supposed ultimately to accommodate 27,500 students, even though Princeton seemed to us to be somewhat larger than it should be.

To solve this dilemma, we invented the concept of a series of small semi-autonomous universities, side by side on the same campus. Each little university would be large enough (say 2,500 students and 150 to 200 faculty members, with ten to twelve departments of instruction and research) to give a general education to undergraduates and to conduct a range of graduate teaching and research activities, yet small enough so that its faculty could

make decisions by talking to each other. Each could develop its own special character and academic emphasis. For example, we thought that one of these universities could concentrate on educating students who would go on to graduate work in the traditional scientific and humanistic disciplines, and that it could house a typical graduate school. In another, the undergraduate curriculum could lead to graduate studies in business and public administration, and a third could place major emphasis on the arts, possibly with a school of architecture as its graduate component.

The rationale for establishing small "universities" as the primary organizational unit of the new campus was an attempt to avoid the usual barriers between graduate and undergraduate students, which seemed to us to be bad for both groups. In the modern world of rapid change the undergraduates needed to be brought into an atmosphere of research at the earliest possible moment, and the graduates needed the breadth of interests and attitudes that characterize the undergraduate environment. Moreover, we could foster interdisciplinary studies and help to lower departmental walls by attaching a group of relatively small related or complementary departments to each university.

Though we called our little universities "colleges," our concept differed markedly both from the American pattern of separate undergraduate and professional colleges within the university, and from the Oxbridge tradition of small residential and teaching colleges which, with the evolution of research as a major university function, have gradually become embedded in a matrix of university-wide research departments. The University of California at Santa Cruz started out deliberately to follow the Oxbridge system, at just about the same time we were beginning our different experiment.

Most American universities, including the other campuses of the

University of California, began as undergraduate colleges, slowly accreting professional schools and graduate teaching and research as opportunity offered; for many years UCLA was not allowed by Berkeley to undertake doctoral programs. A number of senior faculty members on the older campuses believed we should begin in the same way. We decided to do just the opposite -- "little university" to build our first / from the top down, or, if you like, to lay the roof first. We started to build a series of graduate research and teaching departments, one at a time, first in physics and chemistry, then in the earth sciences and biology, mathematics and engineering, and in linguistics, philosophy, comparative literature, and economics. In each department we aimed for a critical mass of faculty who would be able to give a doctoral program right from the start.

This was a crucial decision, because it was one of the prerequisites for assuring that our first faculty members could be outstanding scholars and researchers. As such, they would be largely self-supporting, in terms of research programs and graduate students, owing to their ability to obtain federal research and training grants. (Jim Arnold was followed by 13 graduate students and post-doctoral fellows when he came to La Jolla in 1958.) Even more important, they would not be afraid of other good men and in fact, as it turned out, they would actively search for the ablest colleagues they could find anywhere in the world to join them. Thus, we were never subjected to Gresham's law of faculties -- that bad faculties are rarely able to transform themselves into good ones.

Our academic plans were approved, but the slight practical problems

of selecting a site for the campus and of designing, raising money for, and constructing university buildings still remained. Our enthusiasm for the La Jolla site was not shared by all the Regents. One of them, who happened to be the richest and most powerful, insisted that the new campus should be built in Balboa Park, which is one of the principal environmental resources of the people of San Diego. He was less than enthusiastic about the whole idea of new campuses, believing instead that Berkeley and UCLA should be expanded to whatever size might prove necessary, and he knew full well that the people of San Diego, much as they might have loved a university, loved Balboa Park (including the zoo) still more. They would never give up even a portion of it. He based his argument against the La Jolla site on the grounds that it would be subjected to the noise of jet aircraft from the nearby Naval Air Station at Miramar. He went to great lengths to prove his point, even arranging for a Marine air squadron to fly low and fast, suddenly turning on their after burners just as they passed overhead, over a house to which he had invited several Regents. The Regents, most of them elderly, quiet men, were scared half to death.

We persuaded the Navy to change its flight pattern so that ascending aircraft would not fly over the proposed La Jolla site, but to the north of it. We took numerous acoustic measurements which proved that the aircraft noise level would be lower than over the Universities of Minnesota and Arizona, let alone the University of California at Riverside. We obtained testimonials from staff members of the General Atomic Corporation, who worked in university-type buildings much closer to the flight pattern than we would be. But the most telling

argument came from the architects who had conducted the study of possible sites for the new campus. They were naturally anxious to please the richest and most powerful Regent, but they were also consultants for a new community hospital which was to be built closer to Miramar and to the flight pattern than the proposed La Jolla campus would be. They had formally assured the hospital trustees that aircraft noise would not be a problem for the hospital. President Kerr gave this information to the Regents at a springtime meeting in Davis, whereupon they voted 20 to one to select the La Jolla site. In their resolution they included the by-now-familiar proviso that the land would be given free and clear to the university by the city and the Navy. They wanted a lot of land -- nearly two square miles. They also stipulated that development of a university community in the surrounding area would be planned jointly by the University's architects and the planning department of the city of San Diego.

Within the next few months all this was arranged; a new election was held; the people voted to authorize the city council to give the university the land it asked for; the Navy was persuaded to move the Marine riflemen 30 miles north to Camp Pendleton, which it had long wanted to do anyway; and an elegant plan was prepared for a surrounding university community. (After the fashion of such plans, this has been slowly chipped away ever since.) Design and construction of the new university began and still continues. Our conception of the university as the modern substitute for the cathedral is true in at least one sense: like a cathedral it is always being built and is never finished.