124. R. T. Duby, H. F. Travis, C. E. Terrill, *Toxicol. Appl. Pharmacol.* **18**, 348 (1971).
125. R. L. Singhal, J. R. E. Valadares, W. S. Schwark, *Biochem. Pharmacol.* **19**, 2145 (1970).
126. Editorial, *Brit. Med. J.* **4**, 446 (1969); P. H. Abelson, *Science* **164**, 633 (1969); R. White-Stevens, *ibid.* **170**, 928 (1970).
127. D. A. Ratcliffe, *Bird Study* **10**, 56 (1963); J. J. Hickey, Ed., *Peregrine Falcon Populations: Their Biology and Decline* (Univ. of Wisconsin Press, Madison, 1969); G. M. Woodwell, C. F. Wurster, P. A. Isaacson, *Science* **156**, 821 (1967); W. M. Miller and G. G. Berg, *Chemical Fallout* (Thomas, Springfield, Ill., 1969).
128. R. W. Risebrough, P. Rieche, D. B. Peakall, S. G. Herman, M. N. Kirven, *Nature* **220**, 1098 (1968).
129. J. Bitman, H. C. Cecil, S. J. Harris, G. F. Fries, *ibid.* **224**, 44 (1969).
130. T. J. Cade, J. L. Lincer, C. M. White, D. G. Roseneau, L. G. Swartz, *Science* **172**, 955 (1971).
131. K. Simkiss, *Calcium in Reproductive Physiology: A Comparative Study of Vertebrates* (Reinhold, New York, 1967), chap. 12, p. 155.
132. D. B. Peakall, *Nature* **216**, 505 (1967).
133. J. L. Lincer and D. B. Peakall, *ibid.* **228**, 783 (1970).
134. D. B. Peakall, *Science* **168**, 592 (1970).
135. W. B. Deichmann, W. E. MacDonald, A. G. Beasley, D. Cubit, *Indian Med. Surg.* **40**, 10 (1971).
136. L. Z. McFarland and P. B. Lacy, *Toxicol. Appl. Pharmacol.* **15**, 441 (1969).
137. J. J. Huber, *ibid.* **7**, 516 (1965).
138. A. M. Ambrose, H. E. Christensen, D. J. Robbins, L. J. Rather, *AMA Arch. Ind. Hyg.* **7**, 197 (1953).
139. W. L. Ball, K. Kay, J. W. Sinclair, *ibid.*, p. 292.
140. R. F. Bernard and R. A. Gaertner, *J. Mammal.* **45**, 272 (1964).
141. A. Ottoboni, *Toxicol. Appl. Pharmacol.* **14**, 74 (1969).
142. G. W. Ware and E. E. Good, *ibid.* **10**, 54 (1967).
143. T. R. Wrenn, J. R. Wood, G. F. Fries, J. Bitman, *Bull. Environ. Contam. Toxicol.* **5**, 61 (1970).
144. G. W. Harris, *Endocrinology* **75**, 627 (1964).
145. W. W. Leavitt and D. M. Meismer, *Nature* **218**, 181 (1968); R. J. Gellert, J. L. Bakke, N. L. Lawrence, *Fert. Steril.* **22**, 244 (1971).
146. W. L. Heinrichs, R. J. Gellert, J. L. Bakke, N. L. Lawrence, *Science* **173**, 642 (1971).
147. K. B. Singh, *Obstet. Gynecol. Surv.* **24**, 2 (1969).
148. C. E. Dent, A. Richens, D. J. F. Rowe, T. C. B. Stamp, *Brit. Med. J.* **4**, 69 (1970); A. Richens and D. J. F. Rowe, *ibid.* **4**, 73 (1970); J. Hunter, J. D. Maxwell, D. A. Stewart, V. Parsons, R. Williams, *ibid.* **4**, 202 (1971); A. D. Borgstedt, M. F. Bryson, L. W. Young, G. B. Forbes, *Pediatrics* **81**, 9 (1972); T. J. Hahn, J. G. Haddad, B. A. Hendin, *Clin. Res.* **2**, 238 (1972); T. J. Hahn, J. G. Haddad, S. J. Birge, L. V. Avioli, *J. Clin. Invest.* **49**, 39a (1970).
149. A. Richens and D. J. F. Rowe, *Brit. J. Pharmacol.* **40**, 539P (1970).
150. B. Tuchweber, B. D. Garg, S. Hatakeyama, *Int. J. Vitamin Res.* **40**, 575 (1970).
151. C. R. Seward, M. Young, E. L. Hove, *Fed. Proc.* **29**, 1777 (1970).
152. K. R. Mountain, J. Hirsh, A. S. Gallus, *Lancet* **1970-I**, 265 (1970).
153. C. Catz and S. J. Yaffe, *Amer. J. Dis. Child.* **104**, 516 (1962); R. J. Roberts and G. L. Plaa, *Biochem. Pharmacol.* **16**, 827 (1967).
154. R. P. H. Thompson and R. Williams, *Lancet* **1967-II**, 646 (1967).
155. J. F. Crigler, Jr., and N. I. Gold, *J. Clin. Invest.* **45**, 998 (1966); S. J. Yaffe, G. Levy, T. Matsuzawa, T. Baliah, *N. Engl. J. Med.* **275**, 1461 (1966); L. Stern, N. N. Khanna, G. Levy, S. J. Yaffe, *Amer. J. Dis. Child.* **120**, 26 (1970).
156. J. F. Crigler, Jr., and N. I. Gold, *J. Clin. Invest.* **48**, 42 (1969).
157. I. M. Arias, L. M. Gartner, M. Cohen, J. Ben Ezzer, A. J. Levi, *Amer. J. Med.* **47**, 395 (1969).
158. R. P. H. Thompson, C. W. T. Pilcher, J. Robinson, G. M. Stathers, A. E. M. McLean, R. Williams, *Lancet* **1969-II**, 4 (1969).
159. A. DeLeon, L. M. Gartner, I. M. Arias, *J. Lab. Clin. Med.* **70**, 273 (1967).
160. H. M. Maurer, J. A. Wolff, M. Finster, P. J. Poppers, E. Pantuck, R. Kuntzman, A. H. Conney, *Lancet* **1968-II**, 122 (1968).
161. D. Trolle, *ibid.*, p. 705.
162. T. R. Boggs, Jr., J. B. Hardy, T. M. Frazier, *J. Pediat.* **71**, 553 (1967).
163. S. Doxiadis, *Hosp. Pract.* **5**, 115 (1970).
164. J. J. Burns, S. A. Cucinell, R. Koster, A. H. Conney, *Ann. N.Y. Acad. Sci.* **123**, 273 (1965).
165. P. G. Dayton, Y. Tarcan, T. Chenkin, M. Weiner, *J. Clin. Invest.* **40**, 1797 (1961).
166. R. A. Buchanan, J. C. Heffelfinger, C. F. Weiss, *Pediatrics* **43**, 114 (1969); P. L. Marselli, M. Rizzo, S. Garattini, *Ann. N.Y. Acad. Sci.* **179**, 88 (1971).
167. R. W. Jelliffe and D. H. Blankenhorn, *Clin. Res.* **14**, 160 (1966).
168. V. H. Saggers, N. Hariratnajothi, A. E. M. McLean, *Biochem. Parmacol.* **19**, 499 (1970).
169. H. Remmer, *Proc. Internat. Pharmacol. Meet.* **6**, 235 (1961).
170. W. Hammer, C. M. Ideström, F. Sjöqvist, *Proceedings of the First International Symposium on Antidepressant Drugs, Milan, 1966* (Excerpta Medica, Amsterdam, 1967), p. 301.
171. F. M. Forrest, I. S. Forrest, M. T. Serra, *Proc. West. Pharmacol. Soc.* **12**, 31 (1969).
172. A. J. Levi, S. Sherlock, D. Walker, *Lancet* **1968-I**, 1275 (1968).
173. J. Heinonen, S. Takki, L. Jarho, *Acta Anaesthesiol. Scand.* **14**, 89 (1970).
174. K. Schmid, F. Cornu, P. Imhof, H. Keberle, *Schweiz. Med. Wochenschr.* **94**, 235 (1964).
175. W. Chen, P. A. Vrendten, P. G. Dayton, J. J. Burns, *Life Sci.* **1**, 35 (1962).
176. H. M. Solomon, S. Reich, N. Spirit, W. B. Abrams, *Ann. N.Y. Acad. Sci.* **179**, 362 (1971).
177. A. Breckenridge, M. L. E. Orme, S. Thorgeirsson, D. S. Davies, R. V. Brooks, *Clin. Sci.* **40**, 351 (1971).
178. J. F. Douglas, B. J. Ludwig, N. Smith, *Proc. Soc. Exp. Biol. Med.* **112**, 436 (1963).
179. J. H. Mendelson, S. Stein, N. K. Mello, *Metabolism* **14**, 1255 (1965).
180. R. M. H. Kater, G. Roggin, F. Tobon, P. Zieve, F. L. Iber, *Amer. J. Med. Sci.* **258**, 35 (1969).
181. R. M. H. Kater, F. Tobon, F. L. Iber, *J. Amer. Med. Ass.* **207**, 363 (1969).
182. E. S. Vesell, J. G. Page, G. T. Passananti, *Clin. Pharmacol. Ther.* **12**, 192 (1971).
183. R. Waltman, F. Bonura, G. Nigrin, C. Pipat, *Lancet* **1969-II**, 1265 (1969).
184. F. Sereni, L. Perletti, A. Marini, *Pediatrics* **40**, 446 (1967).
185. W. Jubiz, A. W. Meikle, R. A. Levinson, S. Mizutani, C. D. West, F. H. Tyler, *N. Engl. J. Med.* **283**, 11 (1970).
186. J. E. Davies, W. F. Edmundson, A. Maceo, G. L. Irvin, III, J. Cassady, A. Barquet, *Food Cosmet. Toxicol.* **9**, 413 (1971).
187. P. R. Larsen, A. J. Atkinson, Jr., H. N. Wellman, R. E. Goldsmith, *J. Clin. Invest.* **49**, 1266 (1970).
188. We thank M. Sadvary for her assistance in the preparation of this manuscript.

# Reflections on Campus Pessimism

Grounds for pessimism about universities are well known; there are also grounds for cautious optimism.

Samuel Gorovitz

In "Whither United States Universities?" (*1*), George Pake provides a compact and perceptive overview of problems facing higher education in the United States. His account is provocative and pessimistic—and thus is, in the end, saddening. In this article, I discuss some of the issues with respect to which Pake is provocative, and I argue that his grounds for pessimism, although all too real, are nonetheless misleading and that the picture he paints is therefore unnecessarily bleak.

I should emphasize that Pake's remarks about the functions and values of universities, the power elements that affect them, the pivotal issues that confront them, and the problems of academic freedom, equality of opportunity, and internal governance all give evidence (in spite of his disclaimer) of a profound understanding of higher education and of a corresponding commitment to nurturing it. I agree with a great deal of what he says. Yet what he says is unsatisfying, not just in that one wishes that much of it were not true, but also in that it focuses on the problems and weaknesses of higher education without a comparable acknowledgment of its opportunities and strengths.

The multiple crises that have beset universities have been mixed blessings. They have given the impression, largely justified, that universities are widely in

The author is director of the moral problems in medicine project and is a member of the philosophy department at Case Western Reserve University, Cleveland, Ohio 44106.

disarray with regard to responsible financial management, firm fiscal footing, internal governance, clarity of purpose, effectiveness of operation, and receptivity to reform. At the same time, these crises have brought an abrupt end to an unhealthy complacency and have forced a reassessment of all of these factors within the community of higher education. This reassessment is taking place at many levels—from individual departments in a university to comprehensive programs such as that of the Carnegie Commission on Higher Education. No fundamental reforms on a national scale have resulted, and few individual institutions, if any, have incorporated even the best of the emerging ideas about programs, finances, governance, and the like. Some, perhaps, may be unable to and will therefore shrivel, decline, or perish. Others may survive as bastions of conservatism—monuments to the past that fail entirely to address the educational issues of the day. Yet changes are taking place, and the signs of these changes are not all negative.

At the national level, the advocates of higher education are developing new muscle. The higher education lobby has not yet learned to speak with a single voice, but it exists. It has a new coherence—symbolized, perhaps, by the activities at 1 Dupont Circle—and, I believe, a new sense of the urgency of effective action (*2*). Make no mistake: 1 Dupont Circle is not the whole of higher education, and the lobby that is developing has not yet brought home the cup. It is just that able men of serious purpose have set themselves the task of advocating the interests of higher education at the federal level, and the effect should not yet be discounted. I share Pake's disdain for Spiro Agnew's verbal imprudence, but it does not follow from the fact of those excesses that the federal government is beyond hope. There are many people within it who believe that the financial solvency of higher education must be assured by federal action, and, although they do not at present set the tune in Congress or in the executive branch, they have not abandoned the effort. Thus, although there may be continued hard times ahead, there is also a basis for hope and for continued action. Higher education in America has survived hard times before, and it has the solidity and the wit to survive hard times again—even if they come in 4- or 8-year spells.

At the state level, the rampant expansion of higher education which took place in the 1960's has ended. Legislatures range from critical to hostile and destructive. But higher education is not simply taking it on the chin. Public and private institutions are banding together for the first time, convinced at last that they form complementary parts of a total system, the health of which depends on the cultivation of a favorable climate for education in general. This is not to say that old rivalries, misunderstandings, and biases are gone. Rather, there is a new climate of cooperation, and there is already some evidence that it is making a difference. In some states, public and private institutions cooperate in formal research, fund raising, or lobbying organizations. Elsewhere the structures are less formal. The effects are difficult to assess, but there is some reason to believe that there has been impact in those states that have established improved student aid programs, adopted positions acknowledging the importance of maintaining a strong, statewide educational system, including both public and private institutions, and, in some cases, provided material aid (without control) directly to private institutions.

At the level of individual institutions, there are many different contexts within which a university operates. Most universities, I suspect, are still little understood or appreciated by their local communities, and I anticipate no change in this regard. The most that can be expected is remission of the additional hostility engendered by the student unrest of recent years, magnified and distorted as it was through the mass media. Universities are, however, building better bridges to the leadership in business and government in their local communities, and we can hope that this will result in greater local support, even in the absence of substantial public admiration.

With regard to alumni attitudes, I believe the worst is past. It is true that there have been defections of the formerly loyal and that contributions have suffered. It is true, further, that recent graduates are unlikely to be the same sort of alumni their fathers were —today's undergraduates tend to identify with their peers at other institutions more, and with their university and its alumni less, than their predecessors did. On the other hand, students are playing a vastly larger role in the governance of their institutions, and this, aside from its other values, is a good investment in future loyalties. And there are indications that the older alumni are coming back, especially as many universities have solidified and clarified their refusal to be politicized. Some institutions are now receiving increased financial support from their alumni, even in what is a very unfavorable economic climate for fund raising. Regionally, interinstitutional cooperation (a step beyond interfaculty cooperation) has increased in prominence, with academic alliances of all sorts serving to improve both the quality and the efficiency of the participating institutions. The trend is sure to continue. So there *are* some pluses in the ledger (*3*).

I mention all of this not to deny that universities are threatened or that their reformation is necessary, but to support the claim that they do not stand idly at the brink of an academic doomsday. There is still time, and, in my judgment, the merits of the case do not yet warrant a sense of hopelessness or of helplessness. I turn, therefore, to some of the internal issues upon which the future of our universities depends.

## Administrative Responsibility and the Faculty

In his discussion of the power elements within the university, Pake rightly identifies the faculty as the constituency that "holds the de facto power." He further recognizes that "the present placement of incentives in the university and of their relation to the university's financial dilemma" is one that makes the marshaling of that de facto power in the overall interests of the university sadly improbable. But I believe he underestimates the effect that administration can and should have in addressing such a problem.

I see the broad outlines of administrative responsibility as including these obligations: to achieve and maintain clarity about the university's needs and its resources, to facilitate the employment of those resources in meeting the needs, and to nurture and increase the resources. Primary among a university's resources are its faculty and its sources of income. Other important resources include its physical facilities, libraries, alumni (who are important for many more than just financial reasons), student clientele, location, and connections with other institutions. Primary among

its needs are those arising out of the immediate educational objectives of its students and the research and other professional objectives of its faculty. But fundamental to the meeting of these needs on any long-term basis are the needs for stability, financial soundness, effective internal governance, meticulous adherence to cardinal principles, happy external relations, and all the other factors that constitute general institutional health.

University administrators have sometimes achieved a synoptic view of an institution's resources in all of their diversity—although it is surprising how much is often overlooked. Administrators, I believe, have had less success in gaining an accurate view of the needs of and within the institution. Most important, administrators have frequently failed to achieve what is essential if they are to be effective in the crucial task of facilitating the employment of resources in meeting needs: that is, they have failed to articulate a vision worth pursuing—to provide enough of a sense of what the institution is about, to enable its individual members to see how their objectives relate to the institution's overall character, and to engender a sense of loyalty to that character. (Here, I suspect, the colleges have done better than the universities.)

To be sure, no university president can impose any such vision on an institution; rather, he can only elicit it from within the institution. Doing so, however, is an essential aspect of his responsibility. It requires that he listen to—and hear—the cacophonous and often marginally coherent debates that take place among each of the university's constituencies about what sort of institution it is and what sort it should become. It will require that he abstract from this debate the best that it includes, which he must then articulate to the university community and its various publics with enough force and fervor to inspire their concurrence.

The "star system" of faculty acquisition, as described by Pake, is still very much in vogue, but the academic marketplace within which it operates is radically different from what it was just a few years ago. It is, to a stunning extent, a buyer's market now. This fact has had a powerful and mixed effect on the campuses. It has heightened faculty conservatism in many quarters as those with appointments of uncertain tenure strive to strengthen their credentials along the traditionally prudent lines. At the same time, secure faculty members, startled into reflection by shrinking graduate programs, disappointing undergraduate enrollments, scarcer research funds, contracting departments, and raises that are exceeded by inflation, have recognized that something is amiss and, in small but increasing numbers, are developing exciting and innovative programs, often with the collaboration of their students. At both levels, faculty members have recognized two important facts. First, their professional guilds no longer offer them the mobility that was the basis of their bargaining strength during an era of educational expansion. Second, their own universities, on which their well-being depends to a newly increased extent, are engaged in a battle for survival.

The result of this recognition is a markedly increased level of faculty concern with institutional problems, a generally heightened sense of loyalty to the home institution, and a frustrated willingness to aid in the solution of the institution's problems. That willingness is frustrated when faculty are apprised of the institution's financial and other burdens, but are offered no specific channels for acting on their concern, beyond the opportunity to acquiesce in the consequences of the university's hard times. Faculty can be left to act on their own initiative in their own way in behalf of their institutions, but I believe that they stand ready, in large numbers, to do more. The administration must provide structured opportunities and supportive service in order to facilitate the conversion of that willingness into productive action. In areas such as fund raising, student recruiting, public relations, and alumni affairs, faculty often enjoy being brought in to play significant roles, and they can play them well. The biggest obstacle to their participation has not been reluctance on their part, but the lack of means for plugging into such efforts in ways that make effective use of their time and skills. Providing such means on a continuing basis is an administrative responsibility.

I thus demur at Pake's exclusion of the faculty from his list of "forces for constructive change within the university." They are, as he claims, the constituency with "the greatest inertia" when it comes to certain issues, such as the system of appointments, promotion and tenure, or the use of educational technology. But in other dimensions they can be a force for constructive change—a force that needs direction, but one that is nonetheless real for that.

Those individual faculty members who wish to act as forces for change—the innovators, reformers, and pedagogical heretics—are often constrained not merely by lack of opportunity or encouragement, but by threat of collegial or administrative penalty as well. Yet here is an area in which administrative influence can be transforming. In addition to discharging its responsibilities as described in Pake's discussion, within the constraints that he recounts, the administration should also catalyze constructive change. It can do so by providing time and funds, but it must also nurture such change by utilizing the full spectrum of available reinforcements, ceremonial and social as well as financial. The administration must practice what it preaches, to be sure. But it must also preach what it practices.

In many universities, such processes are well understood, and the results are encouraging. Faculty members experiment, and a sensitive and supportive administration encourages them to do so without undue fear of failure. When a few faculty members are thus supported, many others are affected. Every administrator knows, or should know, that the amount of innovation and change that can be accommodated by any institution within a short span of time is limited; such changes absorb great energy. Thus it is essential for those administrators who wish to catalyze constructive change also to exercise critical judgment about the pace and quality of change. This is the crux of many a matter—the problem of quality control. It is often argued that the only security for high quality in the university is high quality in its faculty. This point, commonly cited in defense of the "star system," is well taken. It falls short of the mark, however, in that the quality of professional ability alone does not ensure activity of high quality in pursuit of institutional objectives. Thus the system of incentives within the university again becomes crucial.

How can an administration, having articulated a vision worth pursuing, and blessed with a faculty of high quality, catalyze constructive change by modifying the system of incentives—the reward structure? The question almost becomes a dilemma when one

recalls that the reward structure, although often lamented by the faculty, is tenaciously perpetuated by them as they play out over and over again the set piece of passing judgment on their colleagues.

### Scenario for Incentive Modification

Pake suggests that one way of modifying the reward structure is to make each faculty member's salary a function of the institution's income for the previous year. But one suspects that he is not serious in the suggestion, which he uses to "point up" significant features of the present reward structure and then abandons without elaboration or examination. It deserves better.

Of course, making salary vary with income is untenable. It is an open invitation to unchecked expansionism. Universities have learned, albeit slowly, that as income rises deficit oftimes keeps pace. (This lesson was a dividend of the federal beneficence of the 1960's.) Still, the notion of making salaries vary with some more realistic index of institutional well-being is intriguing.

Consider this scenario. At university X, the faculty, after much discussion and debate, and after substantial administrative persuasion, endorse on an experimental basis a radical change in the reward structure. Each faculty member's salary for the following year is contractually composed of two parts—a dollar amount exactly equal to the current year's salary, plus a number of increment shares allocated, like raises, on the basis of merit. The total amount of money that would have been available for raises under the guidelines and processes of the old system is then allocated to the increment shares. Thus each share has a fixed amount, and each faculty member has a predictable salary for the following year. But the new system is in operation, for each faculty member knows that his income 2 years hence, and thereafter, will depend on the institution's health; of course, it would anyway. The star system still survives, since more increment shares have gone to the stars, who have bargained for them on the basis of their remaining mobility. Yet things are different, for now each faculty member has, in addition to a stake in the outcome, some leverage with regard to the outcome. Investing his efforts in those enterprises that pay from the institution's point of view will pay from his point of view also. The fundamental question then becomes that of formulating the basis for the evaluation of increment shares. However, there is no reason at all why this should be the same for all universities or for all time in a given university.

Let me carry the scenario further. University X has had increasing income and deficit for some years. Its student selectivity has diminished, and alumni giving has been stagnant. The decision is made to evaluate increment shares as follows: the total amount of money to be allocated to increment shares for next year is $p \times k$, where $k$ is the amount that was allocated this year and $p$ is, say, 1.25 times the percentage of deficit reduction in this fiscal year. It is quite simple. No deficit reduction, no raises; moderate deficit reduction, raises comparable to the previous year's; deficit elimination, improved raises. The administration is then obliged to provide a wide variety of clear-cut opportunities and guidelines for voluntary faculty efforts in support of the deficit reduction drive.

How should the basis for the value of increment shares be determined in any given year? Legitimate differences will abound. I would argue that it is ultimately an administrative decision—budgetary matters are anyway—that should be made with substantial influence on the part of the faculty. I see no reason why a faculty committee should not be up to the task of determining, in concert with administrative officers, which of the university's objectives should get the special emphasis of being included in the basis for share value. Of course, there are large elements of risk, gamble, and maneuver. Faculty members will, in effect, want to place their bets where the odds seem best, and the administration may prefer a basis that emphasizes important long shots. So the committee had best be well balanced, conscientious, and credible—which many such joint committees are.

Further, university X is now in the black, but not quite in the pink. It is fiscally sound, but on the way it has suffered from the measures that were required. In particular, it has a student body of poorer quality and narrower geographic spread than it wants. It therefore adopts a basis for share value which allocates for increments an amount that is a function of the percentage of increase in number, quality, and diversity of applicants. Thus the basis for share value need not be simply monetary.

Those faculty members with a lesser number of increment shares assigned in the first year need not feel unduly put-upon. Additional shares can be awarded annually, on the basis of merit, to reflect changes since the previous year. (Thus share values might tend to diminish, but the increase in number of shares would compensate.) Critics of the scheme will argue that it holds open the possibility of violation of various legitimate interests. This is true, as it is of the present system, under which an administration can simply decree that there are to be no raises. No system is secure against the machinations of the often hypothesized, but usually absent, malevolent fools. End of scenario.

### Changes in the Offing

I do not believe for a moment that such schemes by themselves can solve the universities' problems. I do believe, however, that they are reasonable, that they can perhaps help, that surely they should be explored and fully developed and, finally, that the widespread recognition of the inadequacies of the present reward structure, combined with the present unfavorable conditions in the academic marketplace, make it entirely possible that imaginative changes, of this or other sorts, are on the horizon. We sell our universities short if, when we envision them grappling with their problems in the future, we picture them as structured and functioning essentially in the present mode.

Changes are in store, too, along other lines. As Pake says, universities, which have embraced the computer as fundamental to their operation, still must confront the threatening question of how new technology can be used to increase teaching productivity and effectiveness. It is likely that the main reason the faculty do not seriously address this question is their awareness that the answers might profoundly affect their lives. I do not believe, as some faculty seem to, that wisely employed technology threatens primarily faculty jobs or educational quality. What it does threaten is the traditional faculty life-style, comfortable as old slippers, of standard courses that are packaged in lectures and given to a private audi-

ence over which the lecturer has substantial control. (Just imagine what the impact on lecture preparation would be if other faculty members were present at lectures—let alone if those lectures were to be made available in the library on video tape!) This issue will be faced because it must be. The faculty may be unlikely to face it on their own, but they can be led to face it by administrative influence. Responsible administrators, aware of widespread and often uninformed scrutiny of faculty workloads and productivity, will spur the effort.

The content of university programs will also change. That is, of course, an old story, since such programs have undergone steady evolution. But I see two respects in which the evolution will change character. The revision and modernization of content will continue, but a new emphasis on values, already emerging, will focus increased attention on the moral, esthetic, and social aspects of the traditional programs and disciplines. Moreover, the affective dimensions of student growth and maturation will receive an increasing amount of academic attention as students exercise greater influence in the decision-making forums of their universities. Both of these prospects hold dangers as well as opportunities, for the university is primarily, as Pake says, a context for the development of the intellectual powers of the student (as contrasted with his moral, political, social, or psychological attributes). Yet, just as sensitivity without competence is futile, so competence without sensitivity is empty, or worse. The task before universities, then, is to encompass within the limitations of an academic environment an effective approach to the evaluative and affective concerns of our students and our times.

### Concluding Remarks

I cannot bring myself to believe that the problems of our universities are insoluble, partly because I see them as no worse than the problems of social injustice, environmental pollution, poverty, and war. Hence, abandoning the university's quest for well-being because of the complexity of its problems constitutes an affirmation of discouragement and withdrawal that we can ill afford. (I am not arguing that the university has any privileged claim on the efforts of the talented—only that, when they simply abandon it in despair, they provide an unhappy commentary on the solubility of all our complex, large-scale problems.) Yet neither can I imagine that the prospects at present are unmitigatedly bright. That George Pake, as well as some of the few others of such ability, has withdrawn from the battle is alone enough to give one pause.

I end, then, sharing Pake's inability to predict the future of our universities and sympathetic to his view that that future hangs in precarious balance. But the question is not one of survival. Our universities will endure. Rather, what is at issue is the form in which and the vitality with which they will survive. I retain an abiding confidence, based, I believe, on evidence, that what Pake calls "the most significant human institution for the future of free men" will rise—indeed, is rising—to the challenges that confront it and that the American university will survive and ultimately flourish as the lifeblood of our intellectual heritage.

#### References and Notes


1. G. Pake, *Science* **172**, 908 (1971).
2. 1 Dupont Circle, Washington, D.C., is the address of the national headquarters of the American Council on Education, as well as several other national educational organizations.
3. Specific examples of each of these points are described in the *Chronicle of Higher Education*; almost any sampling of several recent issues will do.


**NEWS AND COMMENT**

# Cooley's Anemia: Special Treatment for Another Ethnic Disease

Last winter, a 30-year-old chemist named Michael Iovene picked up the telephone and called his congressman. Within a matter of days, Iovene and a friend of his named Dorothy Guiliotis met with Representative Robert N. Giaimo (D–Conn.) in his district office in downtown New Haven. Their meeting was on a Saturday morning—the 22nd of January. That day, the process of transforming an obscure ethnic disease known as Cooley's anemia into the target of a national program of research and screening began.

The success of that process has not been met with unbridled enthusiasm in all camps. Indeed, many observers of the health scene see it as the epitome of politicalization of disease. They see the campaign to combat Cooley's anemia as a symbol of all they consider irrational in biomedical research planning. Individuals who supported special legislation for Cooley's, however, call its successful passage "an example of the democratic process at its best."

Iovene and Mrs. Guiliotis talked to Giaimo about this grim, inherited blood disorder named after Thomas B. Cooley, a Detroit physician who described it in 1925, and also known as thalassemia, from the Greek word for "sea." Many of the victims of thalassemia are of Mediterranean ancestry. In the United States, the highest incidence of the disease appears to be among individuals of Italian or Greek or Spanish descent.

The real incidence of the disease in the United States is not known and estimates are little more than guesses. Many researchers agree that a figure ranging somewhere between 5,000 and 15,000 is plausible. Outside of the United States, in certain European and Asian countries, the incidence is much higher.

Michael Iovene and Dorothy Guiliotis each has a special interest in Cooley's anemia. Iovene, a young man of Italian ancestry, is a Ph.D. candidate in chemistry. At 30, he is one of those rare individuals with this lethal blood disease who survive much past the age of 20. People say he has already outlived his time by a decade. He tries not to think about it, but it doesn't do much good.

Mrs. Guiliotis's family roots are in Greece. Her sister died of Cooley's a few years ago. Today, Mrs. Guiliotis is the executive director of the Connecticut chapter of the Cooley's Anemia Blood and Research Foundation for