How much is a physicist's **INERTIA** *worth?*

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IN an article entitled "Individual Departmental Libraries vs. Consolidated Science Libraries" (*Physics Today,* May 1961, pp. 40–41.), Professor D. A. Wells of the University of Cincinnati reported on a poll of 126 chairmen of physics departments with respect to their opinions of consolidated science libraries. His results indicated that 84 "were strongly in favor of departmental libraries", 17 "made no positive commitment", 3 favored consolidation, and 22 did not reply. Professor Wells follows these statistics, which he does not refine to show which of his respondents were and which were not served by a centralized library, with a series of quotations setting forth the arguments favoring individual departmental libraries. But, he fails to present the reasoning for the other side. Without providing the reader with the opportunity to judge for himself, and by carefully suppressing any point of view that differs from his own, he concludes: "The few arguments which may be advanced in favor of the consolidated library can easily be given their proper perspective." This is scarcely scientific objectivity. In the interest, then, of permitting the reviewer to establish his own perspective, it would seem only proper and fair to enumerate arguments in support of consolidation.

1. *Convenience:* None of the statements quoted by Professor Wells sets forth any argument for individual libraries other than the convenience of the user. No one will disagree that a book in the hand is more convenient than twenty down the hall, but according to Dr. Wells intensity of scholarship in physics is much like that of light—it varies with the square of the distance. Moreover, Dr. Wells concerns himself only with the convenience of the faculty, he does not appear to be concerned with the convenience of the student who may be compelled to go to the physics library for his physics books, the mathematics library for his mathematics books, the chemistry library for his chemistry books and God-knows-where for the books that fall between. Only one who, like the present writer, has struggled, both as a student and a faculty member, with the more than twenty departmental collections of the University of Chicago can appreciate the headaches such a system imposes. An academic library is not a private estate from which the great unwashed are to be barred. No one would deny that there are certain basic titles, perhaps even the files of *Physics Today,* which every faculty member must have constantly within reach; but these materials should be the personal property of the scholar. They represent expenditures that are tax deductable, and in the income bracket at which most physicists find themselves scientific books probably cost only ten cents on the dollar. Certainly the Federal Government is doing all it can to revive the tradition of the book-lined office of the nineteenth century German scholar.

2. *Interdisciplinary Relationships:* The steady erosion of the old disciplinary boundaries is an important characteristic of mid-twentieth century science, and the emergence of such interdisciplinary studies as biochemistry, biophysics, physical chemistry, and solid state will increasingly demand that the scientist in one field will need access to the materials in other departments. This is as true for libraries as it is for reactors and computers. During our career as a practicing librarian we have been called upon more than once to arbitrate an angry interdepartmental tussle for the possession of an unusually expensive volume or a long file of a scientific journal. Thus, we suggest that the modern science center might present an architectural configuration of a great wheel, or pentagon, in which the science library would be the hub, the radiating spokes the major disciplines—physics, mathematics, chemistry, the biological sciences—and the rim the laboratories. In such a way cross-pollinization could take place both in the laboratory and in the library, and the inner courts could provide an hospitable retreat for the dove of peace. The scientist can no more afford bibliographic isolation than can a nation endure political isolation. The cross-fertilization of disciplines, therefore, compels either library consolidation or extensive duplication. With the costs of scientific publications rising almost at an exponential rate, one can seriously doubt whether university administrators, confronted by budgets that are themselves finite entities, will place a very high premium on the inertia of the physicists.

3. *Economic Advantage:* A centralized library service is a more efficient economic unit than one that is dispersed. This holds true for personnel, book stock, supplies, and overhead. Money saved on library budgets may be available for the physics department.

4. *Improved Service:* Fragmentation of library service into small departmental units results in poor library service. Small departmental libraries are not attractive

to trained library personnel and most university libraries cannot afford to supply it to such small, uneconomical units. The larger unit can offer far greater service to its patrons than can a small departmental library presided over by a secretary or a part-time graduate student. There is no reason why a well-organized central science library could not arrange to deliver materials on request to the office of the footweary physicist. That Professor Wells and his respondents cling so tenaciously to the horse-and-buggy service of the departmental library may well be due to the fact that they have never experienced a truly modernized library service.

5. *Improved Book Collections:* Dissipation of the library's book collection among a number of small departmental libraries militates against the formulation of a sound book selection program. Not only does it encourage the excessive duplication of expensive materials, but also it conceals lacunae in the collection and generally diffuses responsibility for the purchase of books in those areas which cross departmental lines. By contrast, a well-organized science library coordinates book purchase and generally maintains professional supervision over the growth, development, and balance of the book stock.

6. *The Revolution in Librarianship:* Dr. Wells is apparently unaware that, through the introduction of automation into library service, a very important revolution is taking place in the profession of librarianship. (See *Fortune,* June 1961, p. 186.) This automation, which in many of its aspects revolves about mechanization through large computer-like devices, will compel centralization, and a university that does not establish a centralized library service that provides for this new equipment will very soon find that its instruction and research in all areas of science will be seriously handicapped if not actually outmoded.

7. *A Snare and a Delusion:* Finally, even Professor Wells' argument from convenience is illusory, for a strong, centralized science library is capable of saving the scientist many hours of tedium and repetitive searching. When we were a graduate student at Yale, Karl Young was wont to remind us that "Scholarship depends as much on your legs as it does on your head." One of the tasks of modern librarianship is to ease the physical burden that has handicapped intellectual toil.

Many decades have passed since we studied college physics, and we understand that the old Newtonian theories have received considerable buffeting in the intervening years. Nevertheless, we believe that density is still mass per unit volume and that static masses have within themselves a latent force that resists change and moving objects a force that opposes alteration of course. Since this force varies directly with the magnitude of the mass there would seem to be some relationship between density and inertia. Department-chairman Wells would do well to contemplate the characteristics of bodies at rest.