

Technological Gap And Italy's Future

By Joshua Lederberg

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ROME—The technological gap has become a major factor in United States-Italian relations since it was dramatized last July at NATO consultations by Foreign Minister Amintore Fanfani. The underlying grievance must puzzle Americans. It mainly reflects the very success of our economic and ideological system of industrial progress. This is the consistent application of scientific technique derived from a large investment in research and development.

To many Italians, however, the gap looms as a subtle kind of economic imperialism—the penetration and eventual domination of the Italian economy by United States corporate interests through control of the most advanced technological know-how.

We do not need to pursue any theory of malevolent intentions to perceive that this may indeed happen: the gap is in fact widening. Italian culture is too important to Western democracy for us to be complacent about limitations on Italian economic vigor.

Fanfani's complaints should, therefore, be welcomed as creating a graceful opportunity for a constructive dialogue, not a defensive self-justification on the part of the United States. In fact, it is widely recognized that the problem is largely internal; it is an educational gap in Italy that calls for the most urgent reforms.

ONE of the most articulate critics is Dr. Adriano Buzzati-Traverso, professor of genetics at the University of Pavia and director of the International Laboratory of Genetics and Biophysics at Naples. Dr. Buzzati writes regularly and aggressively on this subject for *L'Espresso*, published here, and discussed the situation in detail with me on a pleasant drive along the Mediterranean coast from Naples.

Italy is making strenuous efforts in primary and secondary education and devotes a fifth of its national budget of \$12 billion to it. Higher education, however, accounts for only \$150 million, virtually all of it administered by the national ministry. Per capita, this is a tenth of the United States investment. These lags would be enough to dim the expectations for Italy's technological future.

The qualitative aspects of higher education here darken the prospects much more. No country in Europe has a more rigid, almost medieval system. Professors are so poorly paid they are expected to augment their salaries with other jobs. Students are regimented, examination-ridden, bored, alienated from their professors and from a curriculum almost irrelevant to contemporary life.

PARADOXICALLY, the existing establishment of university professors must assume much of the responsibility for this situation. The impetus for reform comes from many younger graduates, who have little hope of achieving a prized chair—valued not for its salary but for its prestige as a springboard to other positions. The appointment to a professorship anywhere in Italy is conducted by a formal national competition judged by the existing professors. While merit still plays a perceptible part in these choices, the most blatant political accommodations are inevitably the most important.

One of the most serious limitations is the absence of graduate education in the sciences—there is no degree comparable to the Ph.D.

The greatest contribution that Americans could make to technological development in Italy would be to spark a new kind of center of advanced education, comparable to the best of private American universities. This could then be an inspiring example of the accomplishments open to a people who have no lack of fundamental intellectual resources.

Government support of intensified exchange programs, such as the Johnson Administration has encouraged, can play a useful part by driving home the potential challenge. But private and industrial support, perhaps initially from the same United States interests accused of imperialism, could have the greatest leverage by sponsoring new patterns of higher education free of the ultra-conservatism of the existing educational hierarchy.