Un'Italia post-industriale: dubitarne è contrario ai dovitori.

— The myth of the small, elastic and creative, family-run industry is one of those false synergies that are still to be found in post-industrial Italy; to question it goes against the dogma.

Una volta lessi che le piccole industrie sono creative NON perché sono piccole BENSÌ perché sono giovani. Da allora l'autore dell'articolo non è più apparso su quel giornale. Crede intenzionato dire che la creatività che la piccolocala è attribuita a della organizzazione giovane, ma ciò non implica che tutte le organizzazioni piccole sono create. Evidentemente aveva torto, un nuovo slogan: il mito della piccola impresa familiare elastica e creativa è uno dei falsi svolgimenti che ancora resistono nell'Italia postindustriale: dubitarne è contrario ai dovitori.

Giulio Natta ricevette il premio Nobel il 10 dicembre 1963 a Stoccolma per l'iscrizione del polipropilene, sperimentata nell'istituto di chimica industriale del Politecnico di Milano. Rappresenta, e in ciò è asse- ta quosto un'europa breve biografia) non vin- se mai il premio Nobel bensì l'abbiano ot- temuto le sue ricerche (al Cavendish Labor- tory) sulle particelle elementari. Si dice che fosse perché Ochialini non lavorò mai con una grande azienda, mentre Natta collaborava cu Montedison.

Secondo un altro dogma nazionale, scien- ziani e persone creative lavorano in piccole gruppi, ma che ha divenuto la forza di trasfor- mare l'innovazione in denaro sono le gran- di aziende a ciascun giorno. In realtà quello di Natta fu l'ultimo Nobel vinto da un piccolo laboratorio italiano: tutti i suoi illustri succor- se sono stati premiati per risultati otte- nuti in grandi laboratori internazionali. Rar- ba al CERN, Livr Montecucchi a St. Louis, Lu- ria al MIT, Dalfonne a San Diego, Giacco- ni a Baltimore. La tendenza ad aggregare sembra prevalere nelle istituzioni di formaz- zione e ricerca Americana, Asiae e Eur- opea. Il sistema delle Università di California conta 220,000 studenti, oltre a 10 cam- pus, comprende anche tre laboratori della NASA. L'Indian Institute of Technology ha 15 campus (ma ogni anno ammette solo 8,000 nuovi iscritti). Nel nostro continente ci sono vari esempi di aggregazione, in essere o in fieri, che coinvolgono primari istituti di for- mazione e di ricerca: IDEA League, INTE- RIGIV, Campus Nord, Rensselaer Institute of Technology, Aalto University.

L'Unione Europea ha recentemente selezio- nato la prossima (prima) sede per l'Europe- an Institute of Technology, modello continen- tale di doppia aggregazione a livello di network internazionale tra centri di eccellen- za, e a livello di cluster locale tra educa- zione, ricerca e innovazione industriale (che Knowledge Triangle). Vorrei provare a rimet- tere sul tappeto la questione del rapporto tra dimensione e creatività e avanzare una pro- posta eccentrica, anche a costo di violare qualche tabelle: visto che in Italia non esiste- no più grandi industrie, o se esistono non fi- nanziano la ricerca (dai alla mano), e vi- sto che la ricerca richiede sempre maggiore massa critica per produrre risultati innovativi, potremmo disegnare un rapporto inverso: dove grandi istituti di ricerca producono inno- vazione per piccole aziende? Non ritengo che questa sia la soluzione ottimale, ma per il momento pare la migliore disponibile. Pres- sappuo necessario è che si possano aggregare istituti di ricerca e formazione che sappiano far ricerca miglior delle grandi aziende, e che sappiano come tradurre i risultati alla gio- unno sovvenire innovativo

DI NECESSITÀ VIRTU’
— VIRTUE OF A NECESSITY

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Se dunque obbiettivi e cultura sono compatibili, cosa si può fare per promuovere la collaborazione produttiva tra grandi centri di ricerca e piccole imprese?

— If, then, aims and culture are compatible, what’s to be done to promote productive collaboration between big research centres and small firms?

In fact Natta was the last Nobel Prize winner by a small Italian laboratory; all his illustrious successors have been rewarded for results obtained in large international laboratories. Babhla at CERN, Levi Montalcini in St. Louis, Luria at MIT, Dall’Olio in San Diego, and Giacomini in Baltimore. The tendency to aggregate seems prevalent in American, Asian, and European training and research institutions. The University of California system has 220,000 students, besides 10 campuses it also has three NASA laboratories. The Indian Institute of Technology has 15 campuses (but it only admits 8,000 new students each year). In our own continent there are various examples of aggregation, either acros or at the planning stage, that involve primary training and research institutes: IRCAM, LABORATORY, REG IV, Campus Nord, Bardem Institute of Technology, Callo University.

The European Union has recently chosen the next (first) headquarters for the European Institute of Technology, a Continental model for double aggregation: both at the level of international networks of prominent centres, and at that of local clusters of education, research, and industrial innovation (the knowledge triangle). I would like to try to bring up once more the question of the relationship between size and creativity and make an eccentric proposal, even at the cost of breaking a taboo: given that in Italy there no longer exist large industries or, if they exist, they do not finance research if the data to hand, and given that research needs an ever greater mass of money in order to produce innovative results, we could suggest an inverse relationship where large research institutes and small firms coexist. I do not claim that this is the best possible solution, but for the time being it seems the best we have. The necessary premise is that we group together those training and research institutions that are better at research than large industries, and that they know how to transfer the results to young (sorry: small) firms. To take one step at a time: is it possible to build large research institutes in Italy? We could say this would be easier than constructing large industries, above all when there exists a political will and when funds are not cut. Is it possible to build a large institute for productive research? If by “productive” we mean generating market applications, then, sadly, the national examples are negatice. However, this might be a problem of method rather than of substance: technology transfer is a discipline that has been certified in the rest of the world and is beginning to spread here too, even though patchily. In research, a critical mass leads to a virtuous circle (for specific areas of knowledge) because specialization attracts the best scientists who, in turn, increase the quality and the creativity of the particular place and the overall system.

In industry, young firms are effectively more creative than large industries. In fact, growth is the result of innovative capacity, not by vice versa; the large multinational industries mainly innovate by buying small creative firms. So, as regards research, the image of a laboratory in the garden is obsolete, and the answer lies, not in the big-small aspect, but elsewhere: creativity is fertilized in the organizational culture of research rather than in that of industry. And research culture is not very sensitive to the negative effects of size, while it can easily tolerate the positive ones. The opposite is true for industry, where creativity and size have an inverse relationship. However, the Italian economy is full of small, dynamic, and adventurist enterprises. How could we give young (sorry: small) Italian industries a pre-eminent right in defining the short-term aims of large research centres?

One of the basic differences between the two cultures (industry and research) is that of motivation. According to a recent article in the Harvard Business Review, the primary motivation of intellectual workers is knowing that they have made concrete progress with their work. According to Professor Gambardella of the Bocconi University, the freedom for initiative in research is a motivation that large industries should exploit for making scientists more creative. Intellectual freedom and satisfaction for tangible progress are two aspects where research strikingly resembles craft. Both determine the creative process.

If, then, aims and culture are compatible, what’s to be done to promote productive collaboration between big research centres and small firms?

1) To organize research following principles that allocate investments to increase in size while keeping their aims in focus.
2) To forge a relationship between small firms and research institutes regulated by small research centres and small firms.
3) To organize research following principles that allocate investments to increase in size while keeping their aims in focus.
4) To forge a relationship between small firms and research institutes regulated by small research centres and small firms.

There are excellent examples to refer to in order to achieve each of these programmes. So it is not a question of inventing new paths but, rather, of providing incentives to promote their implementation. In everyday life problems are resolved by taking decisions. In this case it seems that deciding is actually a part of the problem, perhaps it is necessary first of all to destroy ancient preconceptions.