

*Editorial by Piero Scaruffi*

## Restoring the Continuum

We live in the age of specialization. There is virtually no limit to the degree of specialization that society forces on its members in our age. The reason why we built such a society of specialists is very simple: It works. By partitioning human knowledge, we have created a very efficient way to apply and continuously increase human knowledge. The gaps between all artistic and scientific disciplines kept widening for the simple reason that the discrete space of specialized disciplines was more manageable than the old continuum of total knowledge. This strategy has yielded the scientific revolution, the industrial revolution, the electrical revolution and today's digital revolution.

Specialization worked—but at a cost. As society has continued to spin its endless loop of specializations, the role of the individual, no matter how brilliant, has become to refine pre-existing models. Society produces generations of robots who are getting better at fulfilling its short-term needs, but probably incapable of imagining a different kind of society.

The history of civilization is the history of both (1) paradigm shifts and (2) stepwise refinements of the dominant paradigm. However, today's society of specialists is not growing generations capable of paradigm shifts, only of gradual refinement. What is missing is the creativity that was segregated when science and art were decoupled.

Major scientific revolutions have usually coincided with major artistic periods. Today science is mostly evolution, not revolution.

In recent decades a new factor has dramatically altered the landscape. The digital age is providing us with an opportunity to tear down the walls of specialization and rebuild the old continuum of knowledge. The World Wide Web and digital media and communication have enabled an unprecedented degree of exchange, interaction, integration, convergence and blending. After so many centuries of specialized progress, we are finally able to see the continuum again and not just the discrete space.

We live in an age of opportunity. On one hand we need a shot of creativity into the sciences to trigger new paradigm shifts. On the other hand the digital convergence is enabling precisely that osmosis of creativity by recreating the continuum from any discipline to any discipline.

The new continuum, though, bears little resem-

blance to the old one, in that its context is a knowledge-intensive society that is the exact opposite of the knowledge-deprived society of the ancient continuum. The “Leonardos” of the post-digital age will be significantly different from the Leonardos of the Rinascimento.

Fostering this transformation requires a fundamental change in the structure of society, which is unlikely to come from the very Western society that invented (and prospered thanks to) the society of specializations. The developing world, which is not burdened with the bureaucracy, stereotypes, habits and prejudices that permeate the Western mind, may have a chance to be first at laying the foundations for a widespread integration of the arts and the sciences.

The West thinks in terms of “career paths” (whether in industry or academia). In the digital age some career paths are emerging that blend art and science (for example, in the graphic-design industry) and may eventually create the need for interdisciplinary “polytechnics” that teach both art and science. However, academia currently has little motivation to encourage such interdisciplinary programs. Very few departments of physics, for example, would hire an artist. The risk is that the West may be too complacent to seize the opportunity to restore the continuum.

Developing countries should realize that they can overtake the West only if they manage to introduce a paradigm shift, not if they content themselves with replicating the Western model. A paradigm shift requires precisely the kind of imagination and creativity that is penalized by the Western society of specialization. After all, the paradigm shift that turned Europe from a continent of plagues, starvation and endemic warfare into the rulers of the world was born precisely during the Rinascimento, the quintessential interdisciplinary era.

Leonardo's mission in the 21st century should be to work with both worlds. On one hand Leonardo can create the awareness in the developed world that we have a golden opportunity to restore the continuum. On the other hand Leonardo should help the developing world set up the infrastructure for the hyper-interdisciplinary polytechnic of the future.

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