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Introduction to the Special Section on Knowledge Management in Postmodern Society

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This introductory essay contextualizes and meditates on the three articles—Bhattacharya, Day, and Waller—presented in this special section on "Knowledge Management in Postmodern Society." In the process it reflects on following points: (1) the capacity the university had in the past to incorporate the irregular and its loss in the contemporary university, (2) the devaluation of humanities and social sciences because of the reduction of the narrative as well as the reflective and critical thinking to mere doxa, (3) the competition from mass media on university's traditional role in knowledge dissemination and the building of the public sphere, (4) the oscillation of academy between Taylorism and post-Taylorism, (5) the possible role students can play in overcoming crisis faced by the university, and (6) the evolution of the binomial writing/reading in the shift to digitalization and the information society.

Keywords higher education, knowledge management, mass media, narrativity, post-Taylorism, public sphere, reengineering of universities, science dissemination

"Information is not knowledge."—Albert Einstein

On May 30–June 1, 2010, a workshop entitled "Knowledge Management in Contemporary Europe" took place at the office of the European Cooperation in Science and Technology (COST) in Brussels. It aimed to advance our understanding of how societies can best manage knowledge by establishing an agenda for research in four areas of the knowledge management field: (1) the role of knowledge creation in a networked society; (2) knowledge infrastructures; (3) knowledge dissemination and sharing; and (4) the future of higher education institutions. This workshop was motivated by the concern that (1) the recent financial and economic crisis had obliged European states to reduce the budget reserved for the education system and to revise their educational strategy (European Commission 2000) and (2) the private sector was underinvesting in research and innovation.

Among the papers that were presented and discussed on that occasion, three have been selected for inclusion in
this special section. Two of the papers deal with the role of the university in an information society, and the third deals with the role of the page layout in the shift to the digital form, a particular infrastructure that facilitates the production and sharing of knowledge.

Let us start with the first two papers that deal with higher education institutions. In the knowledge management of a modern society, higher education is the pivotal process—and its institutions the primary instruments—for knowledge creation, development, sharing, and dissemination. However, the concept and role of the university are radically changing. Among other things, the social prestige of the university is declining. The university is ineffective in the context of an increasingly globalized economy and culture driven by an information and communication revolution,

and students' career opportunities and choices, state policies, and institutional orientations have been shifting dramatically in the face of the sharply changing labor market. Moreover, the practice of research, both in its objectives and methods, as well as the practice of didactics, needs to be redesigned. There are many open questions today about higher education. Intellectually these questions are fascinating because they entail issues and problems that are so interlinked that it is difficult to decide where to start untangling the complexity.

However, when the situation is too complex to grasp, it is inspiring to venture back into the history. And this is what Nikhil Bhattacharya does in his outstanding paper where he reconstructs the history of the university, going back to its origin, and then analyzes its development. He reconstructs the two different historical models that were subject to experimentation and development in several European countries. The first of these is the broadly medieval European model, which is based on knowledge sharing, and the second is the modern German model, based on empirical research. In his historical reconstruction, Bhattacharya helps us understand the origin of many tensions that academics often feel in their everyday professional lives. He shows us that the modern research university is the product of a forced combination of the modified versions of these two models, which were based on incompatible epistemological assumptions and are products of the different socioeconomic and political systems that supported them. The different layers of legacy that mark the contemporary university, which come from different traditions, do not form a coherent whole and have in-built conflict.

Furthermore, Bhattacharya's historical reconstruction shows that the university has multiculturalism in its DNA, which goes well beyond the broad European tradition. At the origin of the German university there was the ideal of the secular and independent model inspired by Leibniz and his protégé Christian Wolff's studies of Confucianism. The interest in Confucianism, according to Bhattacharya, arose from Leibniz's observation that this secular philosophy of ethics and governance, unrelated to revelation, had allowed a large state such as China to survive for millennia. The application of this philosophy of ethics and governance to the university thereafter inspired the secularization of knowledge and of universities, as well as the independence of science from religion.

Another very important point made by Bhattacharya is that the in the past the university was a much more dynamic system. For example, in Galileo's times, the university was able to incorporate the "irregular" people, that is, those who did not have proper academic credentials but were able to teach and conduct interesting research. Galileo himself is an excellent example of this, since he did not have a regular degree. The capacity of the University of Padova to incorporate the best minds of the time, even when they did not have proper academic credentials, was also made possible by the fact that Padova was under the dominion of the Republic of Venice, which guaranteed freedom of research. Thereafter, until the last university reform in the Italian Academy, it remained possible for a person di *chiara fama* (a well-known person), to participate in public competitions for academic positions even when that person did not have the desired degree. This capacity of the traditional academy to incorporate the irregular is now at risk of disappearance because of the reengineering of the university organization. In general, the validation and standardized evaluation of knowledge and the current organization of science often discourage the acceptance and incorporation of new ideas and innovations. The risk today is that universities build good crafts

persons of knowledge, scholars who correctly follow the procedures but who in the end have very little new to add.

If Bhattacharya, by turning his gaze to the past, helps us understand the derivation of the twofold and perturbed identity of the contemporary university, Ron Day's groundbreaking paper helps us see new possibilities for the future. He analyzes how the current institutional crisis is connected with the shift of the university from a Taylorist institution to a post-Taylorist and postmodern one. Day also adds to Bhattacharya's analysis of the German university model by pointing out that the University of Berlin model of the early 19th century was also the site of a fundamental critique of knowledge production; in fact, in that period many illuminating pages of sociology were written (Maldonado 1979). This critique was seen even by rulers as a powerful engine for the improvement of society. It might seem curious that a vision of the university as a place where a critical awareness of society and economy is built was tolerated by the ruling classes of that time. But this can be explained by the fact that the rulers of that time were not able to produce a new design and thereby bring about a radical reorganization of the university and hence had to live with the critical proclivities of academics, as their creative talents were needed for projects that advanced the state's interests.

Building on Lyotard (1984), Day proposes a complex reading of how the educational and social mission of higher education is reshaped by computerization, not so much by computational capabilities but by information retrieval and communication capabilities of the new systems. He writes that in this new social shaping of the university, the "traditional narrative constructs for truth (characterized by authoritative legitimation)" have been delegitimated by the social prestige of "scientific constructs (characterized by legitimation through arguments and refutation based on experimental proof)."

Instead of the universities being, on the whole, the custodians of episteme (true knowledge) against the spread of doxa (opinion) in the everyday life discourse, what has happened is that scientific faculties have been legitimated as the keepers of episteme while the humanities and social sciences have been delegitimated as producers of episteme, and instead they are considered as mere producers of doxa. This devaluation of human and social sciences has brought with it the risk of developing increasingly acephalous research in hard sciences, where it is quite rare that the knowledge produced is problematized in philosophical and social terms, especially when it is done for corporations or the military. This is not a new risk in human history, as it had already been detected by Husserl (1970) in the mid-1930s, when he attributed the crisis of sciences to the increasingly dense obscurity of their foundations and meanings, and to their incapacity to explain the meaning of life, which remains the fundamental question.

Computerization—according to Day's analysis—has given the coup de graceˆ to narration because it has allowed methodologies to be refined for measuring quantity at the expense of quality, which is becoming more and more elusive, and because it has applied an "audit culture" to academic work (Power 1994; Strathern 2000). The growing impact of bibliometric criteria and methods of measurement in fact ratifies the claimed insufficient "scientific" of critical scholarship. Scholars working in humanities and humanistic social sciences publish books, chapters in edited collections, and articles in journals that are not included in citation indexes such as Scopus and the ISI Web of Knowledge. However, evaluations in the university are often based primarily on these citation indexes. In effect, only those who publish in journals included in Scopus and

ISI are considered true scientists. All the others are seen as wordy people. Thus, scholars working in humanities and humanistic social sciences are put in a kind of "scientific quarantine." A very schizophrenic situation has been produced in which scholars working in humanities and humanistic social sciences are accused of not being scientific, which is what they do not want to be and cannot be.

While Galileo is often pitted against Dante in an internal battle between scientists and humanists, universities could lose the way since they risk losing the monopoly of knowledge on which they always tried to base their social power. However, when we look at the issue of the current tensions between hard and soft sciences from a broader sociological point of view, we find that the first attack against humanities did not come from science but from mass media. The attack came from science only at a later time, which is now, after that the humanities had suffered a first "defeat" by the mass media, which not only shape consciousness but are also able to reach a large number of the population from every social class, age, gender, and educational background. While universities have continued to target that section of the youth destined to become the future ruling class, the mass media had the mission (and ambition) of addressing the whole of society during its "leisure" time. Over time the mass media have exercised their influence not only on narrativity and information but also on knowledge dissemination, which was quite different from and yet close to what universities do. A new type of knowledge has arisen, as well as a new cultural and organizational horizon of trades and professions. However, while being a powerful means of stabilization of the symbolic order, the mass media had two structural characteristics that were also big limitations: First, they had to defeat the boredom produced by the standardization, homogenization, and increasing uniformity of individuals, and thus their cultural products had to be entertaining; and second, in addressing the limited span of audience "leisure" time they had to build a very speedy internal rhythm.

While the mass media were, even if in a different fashion, establishing a direct and intimate relationship with big audiences and with society in general, universities were less able to talk to public opinion; they were capable of only sporadically disseminating their scientific outcomes in the public sphere, and they struggled to understand the type of relationship they needed to have with the media. The media of course profited from the weakness of the academic world and became great disseminators of knowledge, as well as the flywheel of information and entertainment. In the meantime, literature, philosophy, history, politics, the law, and so on have continued to remain in the age of slate and chalk.

But have the media always been competitors of universities, and in particular of the human and social sciences? On this broad issue Slavko Splichal has written a seminal work entitled "University in the Age of a Transnational Public Sphere" (2011) in which he reconstructs the long and troubled relationship between universities and press. He advances the idea that historically the university has strongly contributed to shaping the public sphere by virtue of it being a site characterized by freedom of expression. Building upon Ferdinand Tonnies's work (1922), Splichal¨ reports how in the 19th century scientists and teachers often became the leaders of public opinion whenever economic, political, and moral questions of public importance required their knowledge and reflection. The public engagement by academics corresponded to the first of three dimensions that Kant attributed to the university, which is endorsing the principle of publicity in public debates (the other two were promoting personal enlightenment and transcending ethnic/national boundaries). At the same time, Splichal shows how universities (with their will to be free) have always been the battleground

for attempts at censorship that were often instigated by political institutions with the purpose of controlling them. In this battle, universities were protected by the fact that their perfect freedom from the government's orders was counterbalanced by the fact that they had no power to give orders (Kant 1784).

Endorsing the principle of publicity in public debates is an important dimension because, as Dewey (1916) argues, it is essential for public participation and democracy. However, universities, continues Splichal, lack within them the democratic participation of citizens, which is fundamental for any real development of the public. This limitation should be remedied by "public sociology," whose objective is to disseminate the most important scientific results by intervening in the relevant social issues, and by helping the general public to understand the society in which they lived (Gans 2009). In the 19th century, the press was seen as the ideal site for accomplishing this task, because the free press functioned, as Marx argued, like a mediator between civil society and state, and conveyed a language that was both rational and emotional, and different from that of official reports or scientific publications (1843).

What has happened in reality? While in the late 19th century, according to Splichal, the public sphere began to be colonized by the market, universities continued instead to represent a more free and authentic form of the public sphere. In this context, although universities were not able to systematically disseminate their scientific outcomes or to have an organic relationship with the press, many professors—as we have already mentioned—became the leaders of public opinion in some countries. The public role played by academics was expected since, as Husserl argued in the mid-1930s, academics and in particular philosophers should be "humankind officials": They were paid by the state to investigate the natural and social world, and among their duties was also to give back what they had learned. Universities and the press, albeit in their own way, also contributed, continues Splichal, to the creation of the national public (through the dissemination of information and knowledge) and acted as fundamental agencies in the nation-building process, since they both had the symbolic power suitable for creating a national consciousness.

In the 20th century the university and the press took quite different paths; while newspapers and other media turned into businesses and were deprived of their basic functions of serving democracy and the public interest, universities, Splichal points out, grew by developing a self-referential system with the consequence that academics themselves became an important, internal audience. This reduced the will of the universities, writes Calhoun (2009), to disseminate their scientific results to the public and to seek legitimization by trying to have public approval of their outcome. However, this situation changed in the last decades of 20th century as the mass media, especially television, began to involve academics in programs by seeking an analytical deepening of facts or social trends, such as on talk shows. Bourdieu (1996) wrote an important book on the participation of scholars in the mass media, highlighting how dangerous it can be for the various spheres of cultural production, as well for politics and democracy, when this participation takes place in dribs and drabs, and lacks a collective reflection and negotiation by academia as a whole. For academics there is at stake the shift, continues Bourdieu, from the reputation achieved inside one's own restricted, scientific community to a broad, public notoriety. The duty to disseminate the knowledge produced gave way to the postmodern desire to be visible and to be seen, as visibility became the proof of one's own existence. But this means, argues Bourdieu, conceptualizing oneself in terms of a business model.

Bourdieu's analysis of the fundamental limits of academics' participation in these kinds of program is very sharp. He points out that the rhythm of television precludes the possibility of an argumentative discourse that needs a chain of arguments and reasons and that becomes a fundamental way of affirming freedom of thought and resisting manipulation. Also, the way in which journalists manage these programs makes the serious dissemination of knowledge and science a pure illusion. In these programs, continues Bourdieu, television shows what should be shown in a way that makes it insignificant, or attributes to it a meaning that does not correspond to reality. To utilize the media in a productive way for science dissemination, he concludes, the scientific community has to be aware of all the mechanisms of television and has to undertake collective efforts to negotiate a participation that is respectful of the intellectual autonomy of academics.

Coming back to Day's analysis, he recalls that, along with computerization, another important phenomenon cited by Lyotard is the social reengineering of the university. This process is taking place under the governance of the current university by the corporate (more or less) "invisible hand." Neoliberalism, Rosalind Gill points out (2009), is transforming academic work in the light of risk (Beck 2000), compulsory individuality (Cronin 2000), mobility (Urry 2000), insecurity, the need for constant updating and reskilling (Castells 1996), and the extension of the working day, and is as a result creating toxic working conditions in academia. Academics have been shaped, continues Gill, in a certain sense as neoliberal subjects, that is, autonomous, self-motivating, highly interested in maximizing their self-expression, responsible, flexible, well disposed to internalizing new forms of auditing and calculating, and with a passionate attachment to their work. The ridiculous imitation of corporate models by universities (such as, for example, requiring that each e-mail has to be answered within 24 hours or that academics have to be present in the office five days a week) is producing, as Gill (2009) argues, and as also discussed here by Day, the change of the notion of education into instrumental terms related to business and the economy, the transformation of students into "clients," and the worsening of pay and working conditions for academics. This is particularly paradoxical since this corporate colonization of universities happens when the business sector has decreased its investment in knowledge and its donations to universities.

The reengineering process is proceeding with many contradictions. If we look to what has happened to knowledge, we could conclude that we are still in a Taylorist system, and that the reengineering of which Lyotard talked has involved universities only partially. It is evident that knowledge continues to fragment in an increasingly narrow way. Under the hammer of the need to control the knowledge produced globally and to start from where others have arrived, knowledge is being divided and subdivided into disciplines that increasingly resemble pseudo-disciplines where the knowledge produced corresponds in reality to pseudo-meanings (Maldonado 1959). At the same time, the fences that separate one discipline from the others remain just as rigid, both at the evaluation level and at the scholarly level, and the attempts to apply multidisciplinary approaches encounter many difficulties before they can be accepted and legitimated. Furthermore, control based on the measurement of quantity and on an insufficient reflection about the evaluation of quality has the inevitable consequence, as we mentioned before, of strengthening homogeneity, standardization, and conformism in knowledge production inside what Gill (2009) calls "academia without walls."

However, once the attempt to impose corporate manners of existence on the academic world started, the risk became that the academic world would no longer produce knowledge because, as Kant wrote, in order to exist the university must enjoy a perfect freedom. Nevertheless, the arrogant attempt to reorganize universities in terms of business models, and the control of knowledge production, has already begun to undermine the foundations of the university.

Day's article also has the merit of proposing some solutions. One of these is to imagine how a network university and network didactic can be developed, by overcoming perhaps for the first time the traditional model of lectio, which is rooted in the alphanumeric world. One of the most important limitations of the university today is the lack of a deep understanding of the new generations and thus of what can be taught to them and how and what they can learn. The conceptualization of new generations as digital natives (Prensky 2001) showed many analytical limits (see, e.g., Bennett et al. 2008). Where, however, this analysis did not fail (and this is the key to its popularity) is in its attempt to understand the specificity of the new generations. It is not so much their actual or presumed familiarity with new technologies that makes them special when compared to the digital immigrants, but rather it is their different paths of learning and appropriation of knowledge (still quite mysterious).

The social and cultural identity of students today is more clearly twofold: They always have been both students and teachers of their teachers at the same time, but of course in the past they were much more students than teachers. Today this twofold soul can be more equally divided between their being students and teachers. Their role as "teacher" is rising since they are connected and networked. This connectivity gives them a powerful means to check the knowledge they have received and also to deepen it. Of course, this has always been possible in the past through books. Then, what has changed? The immediacy and ease in doing so.

And now let us turn to introduce the third article, written by Rob Waller, which is a unique piece within the broader umbrella of "Knowledge Management in Postmodern Society." This article deals with the problem of layout, which is understood as an important facet of the infrastructure of reading/writing in a literate culture that is inclined, as Ong points out (1977), to have recourse to visual syntheses in its modalities of the structuration of physical reality and knowledge. When the word is spatialized within some means of physical support (it can be a sheet of paper or a screen) in order to facilitate the reader's visual access, it needs to be organized in the space effectively (Ong 1977). Ancient Romans were used to defining barbarians as those populations who were afraid of empty space and hence tended to write over all the surface of the physical support. Romans knew that the creation of margins inside every physical support such as a piece of paper had the function to make the text more readable. So, for them civilization was also the ability to tame the space by including emptiness. They understood that the empty was fundamental to understand and manage the full. This balance mirrors what also happens in oral communication, where the words are balanced by silence that corresponds to the empty space of the sheet of paper or on the screen.

Waller's paper is very much due in the field of digital media studies because up to now scholars have tended to analyze the technological platform or the text and neglected the infrastructural elements that make both the platform and the text usable. He points out the fundamental function of page layout, both as an important infrastructure for reading and writing, and as a lens for looking at crucial issues related to the nature of documents. Waller stresses how layout enables effective reading

through his discussion of several theoretical approaches pertaining to different disciplines. Moreover, he shows how in reality layout is essential as a memory tool and in enabling effective reading; he also recalls that the digital world needs graphic layout, and that there is a need to include this in our definition of communication competence and media literacy.

Looking at the digital era, Waller observes that layout as a "carefully considered editorially mediated and designer-crafted presentation of a complete message" is perhaps going out of fashion. The example that Waller reports, a double page spread from The Guardian newspaper's website, shows that the layout is being completely stripped to the bone. However, Waller argues that the disappearance of the original(print)layout implies a different organization of information and thus of reading. This reflection should stimulate those who discuss topics such as "we" journalism or citizen journalism to include the question of layout in their debate. In the new, participatory contexts of information production, this issue has in fact been neglected and consequently has been ignored, as has the matter of how this competence can and should be acquired; this is not to mention the many research projects carried out to compare the content of offline and online newspapers, where the issue of layout is rarely included. In this research, attention is mainly focused on the content analysis of words, pictures, and so on, without taking sufficient account of the layout. Waller's analysis shows instead that to undertake an accurate comparison of these two modalities, layout must be included.

Waller's paper has also the merit of shedding light on another important issue, which is the relation between reading and layout. The debate begun by Franco Moretti (2000) on distant reading as opposed to close or intense reading, which is the most prevalent form of engagement for the literary scholars, is well known. In the digital age, Moretti argues that, confronted by the availability of millions of texts, scholars must develop new modes of reading, tools, methodologies of aggregating and filtering, and theories. Distant reading requires a change of perspective, a change not just in scale (i.e., read more books) but in kind. Moretti's discourse once again makes us reflect on the fact that, apart from the technique of speed reading, no technology has been implemented up to now to support reading. The reading process in fact has remained pretechnological. While the computer has automated and thus facilitated writing, it did not do the same with reading. On the contrary, it has probably made reading more difficult: Reading on the screen might be for many more tiring than on paper.

Waller discusses the layout issue in the light of two different modalities of reading: receptive or linear reading (which is related, for example, to reading a novel) and selective or strategic reading (which is connected to studying a text). In the first case we need to follow and immerse ourselves in the flow of the text, while in the second case we need to follow the text but also to check whether we understand it correctly and have assimilated what we are reading. Thus, we must apply also an executive control (or metacognition). According to Waller, the fact that the discourse is analyzed on a surface (piece of paper, book, page, etc.) makes it possible, when we read strategically, to turn back, to look forward, and to stop and think—that is, to utilize the physical infrastructure of the text in order to organize our learning. The function of the layout is to support strategic reading by providing readers of textbooks with what they need: headings, illustrations, notes, bulleted lists, diagrams, numbered steps or marginal panels, and so on. However, it is not only studying that requires strategic reading, argues Waller. Another function of the layout, writes Waller, is to support strategic reading when we need to obtain information. Information documents also in

fact need to be read using particular strategies when the reader has specific purposes in mind or needs to solve some problems, and the layout is indispensable in this respect.

Another issue discussed by Waller in an original way is that of the interactivity of the digital and print channels. He argues that the Internet, the medium considered to be the most interactive one, offers still today to its readers a more linear experience at the page level than print. He recalls the seminal work done by Sellen and Harper (2002) where they concluded that paper was an interactive medium (not a storage medium), although in offices it was increasingly used in a temporary way (given that now the life cycle of a document moves between paper and digital versions).

The digital world, which has just begun to produce formats for managing websites, suffers from an insufficient use of layout techniques and principles. In fact, writes Waller, the same "unsorted and unedited scrolling page" is used to read a few posts on a blog or thousands of comments on a national newspaper website. But if the sort of layout of texts used in online environments is uncertain, equally uncertain is the particular layout of the users themselves, which is composed of their gestures and postures when they use the computer. While on the desk the computer keyboard, put horizontally, concentrates the activity of writing in the same location as traditional, offline writing, reading is instead concentrated vertically on the screen and thus in a completely new position for the reader. Those who read offline read and write with the head bent, in the classic position of meditation and prayer. Reading on the desktop computer screen instead obliges the user to raise the head. Raising the head has meant that the user enters a position of parity: Those who read on the screen position themselves at the same level as those who wrote the electronic text. The figure of the e-actors with their capacity for reading, but also for producing electronic texts, could be developed by starting from this change in the posture (layout) of the electronic reader. This changeof90degrees in the head posture has obviously had some relevant consequences, at both the cognitive and the emotional level. However, laptops, tablets, and smartphones are reversing this trend, since they come back to organizing the users in the traditional way of reading. But this regression can be dangerous and has to be carefully monitored by scholars.

These are three substantive papers that have each succeeded in providing an original and seminal contribution to the field of knowledge management. This is the right moment to analyze both the destiny of higher education and the problem of the infrastructures of reading and writing as the foundations of media literacy. And the academic world has to be able to develop a self-reflection, and to turn its attention and analytical capacity to its own world (Bergman 2007). In the digital age, universities and scholarship have become a true battlefield where many values shaped in the past are under attack. At stake are things like freedom of research and teaching, the meaning of education, the aims of science and knowledge, the social function of higher education, the relationship with mass media, and the definition of media literacy. Academics must find the resources, in terms of time and attention, to dedicate to these fundamental issues, not only for the sake of their own future, but also for the future of society.

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