

**THE UNIVERSITY AND THE CHALLENGES  
OF THE DIGITAL REVOLUTION:  
TWENTY-FIVE YEARS OF INTERNET**



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# The University and the Challenges of the Digital Revolution: Twenty-Five Years of Internet

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## Introduction

Since the Internet arrived in the public realm in 1993, the world entered a new era characterized mainly by the rapid pace of change. Such a technology that allows the transfer of information at a speed of 200 million meters per second and the immediate processing of the information generated by nearly four billion people has transformed the pace of knowledge, economic and technological development. It has even heralded a new historical era where disruptive innovation not only takes precedence over its competitors but also wipes them out to change the rules of the game and take over the market,<sup>1</sup> hence becoming the new rule of natural selection. We thus find that The Family, an incubator that brings its know-how to startups, has chosen the motto “the barbarians attack.”<sup>2</sup> They attack all areas, without exception, from transportation to health, through insurance, industry, education and others, to transform the rules of the game and do away with our knowledge about them, the way we manage them and their related functions.

How can we, as universities, not be concerned by this ongoing revolution—and this permanent instability—in the spheres of knowledge, professions and semantic systems? Are we not the institutions of knowledge production and vocational rehabilitation, and the advanced platforms that conceive the worldviews or *Weltanschauungen*? What can we, as universities in general and Lebanese universities in particular, do about this reality?

What we know with a fair degree of certainty about the future is

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<sup>1</sup> See J.-M. DRU, *Disruption: Overturning Conventions and Shaking Up the Marketplace*, NY, Wiley, 1996.

<sup>2</sup> <http://barbares.thefamily.co/>

that the number of jobs will decrease dramatically because of so-called computerization, and that by some estimates, 47% of the occupations we know are doomed to disappear.<sup>3</sup> This means that labor market demand as we imagine it when we develop this or that field of specialization is evolving at an ominous pace.

It is also indisputably clear for us—as universities—that our academic human resources are in danger, given that working in companies proves to be more profitable and useful for successful researchers. A lot has been said lately at the global level about the brain drain occurring from the universities to the business world, and particularly to the digital industry, and about a real threat facing the universities in this regard.<sup>4</sup>

What we also know for sure is that artificial intelligence, brain development, genetic modification, nanophysics technologies, among others, will cause ethical, legal and social problems that are difficult to foresee. These technologies are evolving at a faster pace than laws and ethics to explore unknown spaces where we always arrive late, so much so that we are eventually compelled to recognize a reality that can do without such a recognition.

It is therefore essential to think about how to frame the technological revolution in the context of large-scale epistemological, societal and ethical progress.

While this question concerns all universities without exception, it is

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<sup>3</sup> See C. B. FREY, M. A. OSBORNE, “The Future of Employment: How Susceptible Are Jobs to Computerisation?,” in *Technological Forecasting and Social Change*, vol. 114, January 2017, pp. 254–280. [https://www.oxfordmartin.ox.ac.uk/downloads/academic/The\\_Future\\_of\\_Employment.pdf](https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf)

<sup>4</sup> See C. VILLANI, M. SCHOENAUER, Y. BONNET, C. BERTHET, A.-C. CORNUT, F. LEVIN, B. RONDEPIERRE, « Donner un sens à l’intelligence artificielle : Pour une stratégie nationale et européenne » (Report requested by the Prime Minister Edouard Philippe), March 2018. <http://www.ladocumentationfrancaise.fr/rapports-publics/184000159/index.shtml>

of particular importance to us at the Antonine University. Our University has indeed grown and developed around a solid academic nucleus, namely the Faculty of Computer and Telecommunications Engineering, which today has the largest academic unit dedicated to this specialty in Lebanon in terms of the number of students. Given its seniority and its very nature, and thanks to the dedication of its researchers and professors, this Faculty is the driving force of the University in the field of research and development and its bulwark in the realms of digital technology and artificial intelligence.

However, computer engineers, the so-called masters of our world, need the university as much as the university needs them. They need us to keep up with the technological progress on which they are working, with the same level and intensity of intellectual open-mindedness, so that culture does not fade away because of the asynchronism between their own unbridled speed and the slow coping capacity of the other cognitive sectors and society in general with the changes arising from the successive technological revolutions.<sup>5</sup>

Thus, we need to think about what technology is doing in our world, in our societies and universities, before we can reflect on how to make use of it.

## 1. Technophobia and its Rationale

The critical analyses of technological progress, or those that warn against an uncritical acceptance of what it offers us, are often rejected and accused of technophobia, and their champions are accused of obscurantism, backwardness, conformism and rejection of freedom.<sup>6</sup> Where does our proposal stand in the series of proposals that range from legitimate—even necessary—fears to restrictive phobia?

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<sup>5</sup> See J.-F. LYOTARD, *La condition postmoderne : Un rapport sur le savoir*, Paris, Éditions de minuit, « Critique », 1979.

<sup>6</sup> See J.-P. SÉRIS, *La Technique*, Paris, PUF, « Quadrige », 2013.

## 1.1. Fear for Humanity

Since the beginning of the 20<sup>th</sup> century, humankind has been obsessively concerned with its own fate, a fear that was primarily driven by the boom of its technological capabilities that has made it susceptible to annihilating itself. While weapons of mass destruction are the spearhead of this shocking self-annihilation, the fact remains that the environmental threat on the one hand, and the dangers of artificial intelligence on the other, are no less dramatic, although they do not inspire the sudden panic prompted by the nuclear bomb. How should we deal with this fear, and how can we transform it into a cognitive and behavioral approach that protects future generations from the dangers of our technological adventures?

Some have answered this question by proposing a new ethic that calls us to act so that the outcomes of our actions are compatible with the continuity of a truly human life on earth, without compromising the conditions that make such an existence possible. Each one of us must therefore consider in his or her present choices the well-being of the generations of tomorrow as a secondary objective of his or her will.<sup>7</sup>

## 1.2. Fear for Science

However, this fear is not only a fear of the results of scientific progress but also a fear for science itself. Etienne Klein considers scientism and technology a threat to science: the first because scientism assigns to it ambitions and promises that it cannot fulfill or that do not fall within its remit, such as the achievement of world peace or answering metaphysical questions; and the second because technology obscures the question of truth in favor of profit. Technology has become so powerful and indispensable in our world that it is now difficult to imagine science outside of it. The main funders of scientific research are the Ministries of Defense and the industry and Internet giants for whom research is related to commercial competition and gain or to power and influence, and for

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<sup>7</sup> See H. JONAS, *Le principe responsabilité : Une éthique pour la civilisation technologique* (1979), Paris, Flammarion, 2013.

whom free scientific research has no real place, whereas science can only thrive once it is liberated from the quest for immediate commercial profit, according to Klein, who reminds us that it is not by perfecting the candle that electricity was invented. On the other hand, the successes of the current technology are based on past scientific achievements, and as long as we do not invest again in the search for truth and in upholding sciences for what they represent and not for their commercial benefits, then the scientific impulse that underlies the technology will fade out, which will mark the end of technology as such.<sup>8</sup>

### 1.3. Fear for Freedom and Privacy

There is no need for a lot of analysis in this context. Facebook is indeed out there, and it decides for us who our friends should be, and it can take the initiative to remove from our Facebook news page our so-called “friends” who do not interact with us permanently. This measure is particularly significant in light of what has recently become known as the Cambridge Analytica scandal, named after the company that has accessed the personal data of approximately 87 million Facebook users.

This scandal was not a first in the history of the social media giant and will not be the last: in fact, Facebook was still a nascent company, in 2006, when it launched the newsfeed option. At that time, more than a million of its six million subscribers had objected, as they refused to let their friends track all their movements on the network, which they saw as an attack on their privacy. However, the founder of Facebook asked them to calm down, which they did, and newsfeed has since been counted among the main success stories on social networks. Which of us could forget the Mood Manipulation Experiment conducted in 2014, when a top Facebook employee named Adam Kramer manipulated the newsfeed of half a million members on the site to study the impact of bad and good news on their mood and how the subsequent reactions go viral on the

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<sup>8</sup> See E. KLEIN, *Galilée et les Indiens : Allons-nous liquider la science?*, Paris, Flammarion, 2008.

network. He even published the study in a scientific journal.<sup>9</sup> Of course, he apologized afterwards for what was considered a violation of the ethics of scientific research, but who can guarantee that experiments of that kind will no longer be carried out?

In short, the history of privacy on social networks is punctuated by minor successive violations that cause a few storms in Facebook's teacup before withering away to reveal societies that are less immune to attacks on their personal information and more tolerant of the idea that they are under observation, under scrutiny and ... under control.

#### **1.4. Fear for the University as a Concept, and for its Values and Resources**

Regarding the impact of the successive digital revolutions and their associated economic and value-related changes on the university, Europeans and Americans have sounded the alarm for nearly two decades. Many scholars have cautioned that the best students in Western Europe, North America and Japan no longer wish to study sciences,<sup>10</sup> as most of them prefer to focus on business management, which they consider the shortest path to success and wealth. Now the danger is overtaking the educational body, since academic institutions offering specializations related to informatics and its ramifications are expected to experience a sharp brain drain that will benefit companies. In his report on the status of research on artificial intelligence in France, Villani suggests that the salaries

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<sup>9</sup> See A. D. I. KRAMER, J. E. GUILLORY, J. T. HANCOCK, "Experimental Evidence of Massive-Scale Emotional Contagion Through Social Networks," in *Proceedings of the National Academy of Sciences*, vol. 111, n° 24, June 2014, pp. 8788–8790.

<sup>10</sup> See for example:

E. SEYMOUR, N. M. HEWITT, *Talking About Leaving: Why Undergraduates Leave the Sciences*, Boulder, Westview Press, 1997.

« Les jeunes Japonais boudent les filières scientifiques », *Courrier international*, n° 168, 20/1/1994.

B. CONVERT, « La " désaffection " pour les études scientifiques », *Revue française de sociologie*, vol. 44, n° 3, 2003, pp. 449–467.

of professors involved in this specialty should be doubled to avoid losing them to the industrial sector.<sup>11</sup>

However, the issue is not only material; it is at the same time an indicator of the change in the scale of values and the decline of knowledge as a value in the search for profit. It is a transformation that hits the very idea of the university in its essence. Nevertheless, universities are not innocent, since the business model they have embraced lately is a pattern that will not allow them to compete with accomplished traders; therefore, they are at risk of heading toward their doom instead of winning the game.

We have to deal with a world where it seems more useful to design an electronic application that allows users to find a taxi than to reconcile quantum physics and the relativity theory. Thus, an almost impossible mission lies before you, that of convincing your students to follow the example of Einstein rather than that of Kalanick!

## **2. Toward Critical Technophilia**

These remarks are not a plea for a break with technology or to halt its development, since research papers denouncing the Internet can be accessed via the Internet and even our indignation with Facebook does not turn into a global phenomenon unless it goes on Facebook! There is no way out of our era and no benefit in leaving it. We must make the necessary efforts to keep pace with development from a critical perspective that contributes to building technologically innovative societies that deal with innovation wisely and carefully. We are therefore the advocates of a critical technophilia that allows a transformation of technological risks into opportunities.

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<sup>11</sup> See the report of Cedric Villani, *op. cit.*

## 2.1. The Return of a Federative University

The main publications on higher education during the last decade of the 20<sup>th</sup> century and the first decade of the 21<sup>st</sup> century can be placed under the apocalyptic sign of the “end of the university” or the “crisis of the university.” It is not easy to summarize these publications, but most of them predict the end of the university in its traditional sense and functions, and denounce an invasion of higher education by a commercial logic at the expense of quality, and the tendency to abandon human sciences and culture in favor of limited professional training and disciplines with high material profitability. One of the most recurrent complaints in this literature is the university’s loss of its ability to unify knowledge, a capacity that had earned it the name of “university.” Knowledge has disintegrated to such an extent that higher education institutions have become confederations of superficially connected disciplines, since every further attempt at reunification is labeled as ideological after the fall of Marxism, constructivism, Freudianism and other global or interdisciplinary interpretative systems.<sup>12</sup>

One of the advantages of the dangers posed by the technological revolutions, which we explained above, is that they confirm the need for a return of the federative university; a university that not only produces fragmented knowledge and marketable products, but also submits the products of its pure sciences to the critique of its humanities, and manages both categories as part of a broad conception of the human being and the society to which we aspire.

It should be noted that most of the studies that expound how higher education can cope with the impact of digital revolutions emphasize the need to teach students what artificial intelligence cannot replace, such as innovation, analysis, criticism, decision-making and moral evaluation, which supposes a serious rehabilitation of humanities within the university

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<sup>12</sup> See J.-P. PINEL, « Malaise dans la transmission : l’Université au défi des mutations culturelles contemporaines », *Connexions*, vol. 78, n° 2, 2002, pp. 11–30.

system.<sup>13</sup> In this regard, these studies concur with the words of His Holiness Pope Francis in the Apostolic Constitution *Veritatis Gaudium* (The Joy of Truth), published on January 29, in which he emphasized the role of Christian philosophy and theology in the promotion of a cultural revolution that would primarily aim at breaking the barriers between disciplines so that they can meet in the light of the revelation, and breaking the barriers between the institutions, since we must consider the establishment of a common project that would serve one single world.

## 2.2. Our Role, Here and Now

Criticism of technology may seem a luxury that we cannot currently afford in Lebanon, as we still dream of a fast internet connection and an e-administration that would alleviate the suffering of the Lebanese and reduce waste and corruption. It may also be seen as a lack of recognition or an ignorance of the considerable improvements introduced by technology within the university itself, on several levels. In fact, we do process the files of thousands of students, hundreds of professors and courses, professional evaluations, exams, services, strategic marketing and so via software. In addition, who could imagine university work today without programs like Oracle, PIMS, Scholar, Scopus, Moodle and others, in addition to hundreds of discipline-specific software packages that we cannot list here? It is impossible to deny all of this, but recognition does not exempt us from our duties toward society, culture and the future generations.

Here I would like to suggest that we do not limit ourselves to the passive importation of technologies and that we do not just get involved in their production through ad hoc contributions. I propose that we work to accommodate the technological revolution with a critical eye, to help our society assimilate it in a productive and constructive way, and to carry out a prospective study of its economic, cultural and social implications that will make it possible to plan the future both in a critical and realistic way.

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<sup>13</sup> See E. BRYNJOLFSSON, A. MCAFEE, *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*, NY, W.W. Norton & Company, 2016.

It is therefore critical to build bridges between engineering sciences and humanities. This is a challenge that the Antonine University has decided to meet. To this end, the University is preparing to launch soon the Faculty of Arts and Humanities, whose research activities will focus first and foremost on the issues that I have just mentioned. If the tragedy of humanities at universities in our countries is that researchers have to choose between being published worldwide without any impact on their societies or devoting themselves fully to the concerns of their communities without being able to gain international recognition or a real weight in the balance of academic evaluation and promotion,<sup>14</sup> the Antonine University was clear and definitive on this issue when it opted for contextualization as the main attribute of its research activities. Moreover, the pioneering role played by the Center for Research on Musical Traditions—at the level of research and culture, both locally and internationally—is a clear example of the success of this option that the Antonine University has included in its mission.

Engineering sciences are no exception to this approach. The Antonine wishes its engineering sciences departments to be an advanced technological niche in the service of humankind, freedom, privacy, the arts, culture and all that is put in jeopardy because of unbridled technological advances. Our ambition is to contribute to a national project on these topics to be launched soon.

### **2.3. Technology and Utopia**

Let it be said, our progress is not doomed to move toward the black scenarios that the cinema and literature depict about a humanity condemned to live under the yoke of technology. Hope in a better future is not necessarily an act of simplemindedness. We advocate an optimism that stems from the innocence of the gospel based on the belief that humans

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<sup>14</sup> See S. HANAFI, “University Systems in the Arab East: Publish Globally and Perish Locally vs Publish Locally and Perish Globally,” in *Current Sociology*, vol. 59, n° 3, 2011, pp. 291–309.

have enough goodness in their heart to rise intellectually to the level of wisdom and to put wisdom at the service of charity.

Let me quote here a relatively old book, which dates back to the first half of the last century, namely *Les deux sources de la morale et de la religion* (*The two sources of morality and religion*) by Henri Bergson, published in 1932, which is still a valid source of reflection and meditation today. At the end of his book, Bergson states that “mankind lies groaning, half-crushed beneath the weight of its own progress. Men do not sufficiently realize that their future is in their own hands. Theirs is the task of determining first of all whether they want to go on living or not. Theirs the responsibility, then, for deciding if they want merely to live, or intend to make just the extra effort required for fulfilling, even on their refractory planet, the essential function of the universe, which is a machine for the making of gods.”<sup>15</sup>

We are invited to be as perfect as our Father in heaven and to build His kingdom on earth, and thus are called not to reject progress but to put it at the service of men, of every man and all men, so that our technologies contribute to the eradication of hunger, misery, violence and ignorance and other hardships which are bringing billions of people to their knees, so that we can all stand up and look up together at the future.

These words might seem unrealistic to you, but try to imagine how mediocre and pitiful education would be in the absence of faith in humankind and the ability to build a better world!

## Conclusion

While we take pride in teaching our students the values of leadership, entrepreneurship and design thinking, and while keeping an eye on Google, Uber, Amazon and other icons of disruptive innovation, we must broadly

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<sup>15</sup> H. BERGSON, *Les deux sources de la morale et de la religion* (1932), Paris, Félix Alcan, 1937, p. 343.

question the impact of this model on civilization and remember that we and the overwhelming majority of students—and humankind in general—will live outside Silicon Valley, the great cultural Sodom that will be the legacy of technology if it goes unchallenged and driven by commercial greed and the desire for authoritarianism, as it might be likely in this case and in the long run to wipe out all sources of creativity in human civilization in favor of statistical models<sup>16</sup> and to transform the vast majority of humankind into tools in the hands of a small minority.

Technology is evolving around us at a breathtaking speed that prevents cultural digestion and plunges individuals and communities into a situation of infobesity and cultural infertility, whereby they produce a large amount of data but assign their analysis to programs that systematically preclude every exception and therefore every possible reflection and knowledge.

It is necessary to ensure that technological development is accompanied by a moral and cultural development that would halt the spiral of disenchantment that places societies under the influence of the digital economic revolution.<sup>17</sup> Indeed, it is clear that everything around us is becoming smart—from telephones, to TVs, to air conditioners and cars ... even if it is in the stricter sense of the term—while we are threatened with losing our thinking skills as the days go by. This is in brief the other facet of digital development. We still have to make the necessary effort and initiate the inevitable process of reflection on what is happening around us before it is too late, so that technology remains true to its first mission, that of contributing to the fulfillment of men, simplifying their daily life and serving their ultimate ambitions and aspirations.

The Antonine University has put its hand to the plow and we are

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<sup>16</sup> See, for example, about Google's impact on languages, F. KAPLAN, "Linguistic Capitalism and Algorithmic Mediation," in *Représentations*, vol. 127, n° 1, 2014, pp. 57–63.

<sup>17</sup> See B. STIEGLER, *Dans la disruption, comment ne pas devenir fou ?*, Paris, Les liens qui libèrent, 2016.

convinced that many hands will soon join us to build together a world that is not only smarter and more productive, but also a wiser, more compassionate and more loving world.

Translated from Arabic by Mirna Tabet.

