The Crucial Impact of Technology on Language and Culture

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Abstract: *This paper attempts to highlight the catalytic influence of technology on language, which, in our view, constitutes a core element of culture. New information and communication technologies, along with their global dissemination, have brought fundamental changes to human society on multiple levels. The very process of globalization is perceived as a consequence of these innovations, principally the rapid spread of the internet. Anthropology posits that each cultural model is already 'transfused' from birth, assimilated over time subconsciously, adopted through imitation, tangible examples, and expressed in the local language. Thus, language emerges as a primary factor in defining collective identity. We argue that, at their core, technological revolutions have proven to be cultural revolutions, as evidenced by the changes resulting from inventions that marked the course of history. Technology, of course, is not merely the machine or the tool itself, but the totality of relationships that develop among people, technological objects, and related knowledge domains. We contend that in the chaotic, globalized international environment, the need to defend local or national identity, including language, becomes imperative. Finally, it is imperative to delve into the potential confirmation of the theory of technological determinism, particularly its role in moulding national languages in accordance with prescribed technological parameters. This exploration is necessitated by the profound influence technology exerts on various aspects of societal dynamics.*

Keywords: *culture, determinism, education, language, reform, technology*

I.   Introduction

"*The field of knowledge dealing with applied science is called Technology*" (Θεολόγου, 2008: 8). The term 'technology' as the set of science applications that facilitate our work, livelihood, communication, and information derives from the French language ('*technologie*') as a loanword for almost every language in the world. The original meaning of the word 'technology' in Greek pertained to the grammatical analysis of the lexical types of a text. The meaning of the verb '*τεχνολογέω-ῶ*', according to Aristotle, is "*to subject something to the rules of an art, to systematize*".[1] Hence, language is a communicative medium governed by its own terms of technologization, and as a tool of understanding, it is also governed by its own technology. Its various forms (oral, written, analogue, and digital) constitute the medium for systematizing (scientific) knowledge and its applications, i.e., technological achievements in our daily life. It represents *per se* a technological means of

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[1] Liddell, H. G. & Scott, R. (1940). *A Greek-English Lexicon* (Revised by H. S. Jones & R. McKenzie). Oxford: Clarendon Press. (Retrieved from: https://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.04.0057%3Aalphabetic+letter%3D*t%3Aentry+group%3D33%3Aentry%3Dtexnologi%2Fa)

communication, which inevitably evolves and is influenced by technological advancements (Θεολόγου, 2008: 3-4; Θεολόγου, 2016: 17).

New information and communication technologies, along with their global penetration into almost every aspect of private and public life, have influenced Western society and brought about foundational changes both at a national and international level. The current process of globalization has been greatly facilitated and strengthened by the invention of the internet, which has evolved at an unprecedented pace. "*Technology, prevailing ideology, institutions, and language decisively interweave within the context of the emerging 'ecumenopolis'[2]*" (Θεολόγου, 2008: 4; Θεολόγου, 2016: 18).

II.   The Intricate Interweaving Of Technology And Culture.

The continuation of cultural becoming encapsulates the concept of 'tradition', that broader system of values that manages inherited material goods and ideas in a place, in a cultural region. The field of tradition that deals with applied everyday life, that is, the way of a region, encapsulates the concept of 'contemporary culture'. (Θεολόγου, 2008: 8)

Cultural differences between groups of people have always been at the core of Cultural and Social Anthropology since they were established as academic branches. At the heart of their interest is diversity, which is studied in a multifaceted way (Hunnerz, 2010: 1-12; Combi, 2016: 3-15). Initially, their theoretical founders dealt with the study of non-Western, the so-called 'primitive' cultures, which now have a minimal 'imprint' on contemporary Western society. Anthropology is characterized by multiple, interconnected fields of study that constitute the 'culture' of a group of people, aiming to understand a wide range of different spheres of knowledge that all populations process, and correspondingly, their resulting actions and behaviors. Such spheres of knowledge are organized into a cognitive structure, the content of which varies from group to group.

The aforementioned fundamental knowledge is deemed essential for a society in terms of managing everyday life, extraordinary events, and issues that give meaning to the world around it. Each cultural model is learned from birth, essentially unconsciously. People internalize and assimilate it through imitation and tangible examples, while it is naturally expressed in the local language. This process is not static or unvarying, but a flexible and continuous process of change, a lifelong endeavor, intricately shaped by an amalgamation of personal and experiential influences. Culture is therefore essential for creating a sense of belonging and for determining people's identity. Each cultural model finds its own answers to internal stimuli observed over a period of time, but above all to those generated from encounters with other cultures. Alterations, whether theoretical or practical, emerging from the plethora of knowledge domains that characterize different societies, exert influence to a greater or lesser extent. This applies to changes arising from the introduction of advanced (in every era) technologies, whether these become perceptible or not in Western culture and other cultures (Combi, 2006: 10-16).

At this point, it is therefore crucial to reflect on the potential role of technology in either the preservation or erasure of anthropogenic heritage, and the consequential continuity or disruption of cultural evolution. This raises an essential query concerning the relation between material culture, embodied in the anthropogenic heritage of objects, and intellectual culture, represented by the legacy of ideas. In short, we should clarify what the role of technology is in everyday life (Θεολόγου, 2008: 8).

Upon encountering new elements, a human group organizes and classifies them within an existing structure, thus reshaping the form of what is already known. For instance, the introduction of new technologies precipitated alterations necessitating readjustment or novel structuring of the relationships among various knowledge domains and daily life, impacting both individuals and the community at large. Technical revolutions,

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[2] 'Ecumenopolis' is a term encapsulating a theoretical conception by the renowned Greek city planner Constantinos Doxiadis (1913-1975), which was formulated in 1967, in his text "Ecumenopolis: Tomorrow's City", published in 1968 in the collective volume *Britannica Book of the Year*. It refers to a hypothetical city the size of the entire planet Earth. The term was employed by Doxiadis to capture the idea that future urban areas and metropolises will merge, ultimately resulting in a single, unified, and continuous city as a result of contemporary urbanization trends and the increase in the global population.

consequently, were demonstrated to be cultural revolutions, as evinced by the changes brought about by inventions such as the wheel or the steam engine, as well as the transition from an oral culture to a written one. Anthropology provides the tools for analyzing these cultural transformations, understanding the ongoing process of globalization, and the implications arising from information technology in diverse societies. The role of technology in the societal context demonstrates the inseparability of the connections that tie it to both society and the individual, as is illustrated by the numerous cultural changes brought on by the usage of information and communication technology. Technology is not merely the machinery or the medium; it encompasses the entirety of the relations developed among humans, devices, and fields of knowledge (Combi, 1992: 41-49).

A salient characteristic of the anthropological theory is its conceptualization of culture as a compendium of communicative acts. Communication is the mechanism allowing groups and individuals to represent and interact with their world through established normative and value systems. For several decades, mass media has illustrated and dictated the future of homogenization, equilibrium, or even the obliteration of cultural disparities, including linguistic ones. Nevertheless, global ethnographic research conducted by anthropologists reveals a countervailing trend. In this context, there is a continually growing demand from peoples to preserve their unique cultural and linguistic characteristics within a strategy of cultural (and ethnic) differentiation. This is exemplified in the cases of the Scots in Great Britain and the Catalans in Spain (Combi, 2016: 5).

New technologies alter space, time, relationships, and types of communication, while continuing to coexist with other domains of knowledge that together constitute a culture. The disparate rate of development amongst various societies worldwide intertwines precisely with this distinctiveness, to everyone's surprise. As the cognizance of living in a globalized world intensifies, so too must the defense of local or national identity, including language, become more vigorous (Combi, 2016: 5).

Clearly, there exists a gap between the speed at which digital technology evolves and the slow pace of change within cultural models and their intrinsic values. For instance, time and space are perceived differently within the technological environment and in real life, although the perception of the former seems gradually to be influencing that of the latter. This impetus for cultural change, largely driven by technology, is detected and recorded in all societies involved in the technological experience. Therefore, Anthropology simultaneously seeks to understand how one becomes a member of a society, how choice activities and human creativity modify the learning process in order to expand the mind to know, learn, and respect one's cultural essence and the cultural essence of others (Combi, 2016: 4-5).

Appadurai[3] (1996: 188-199) and Lévy[4] (1997: 9-18), who studied the interrelated phenomena of globalization and the mechanization of society in the second half of the 20th century, evaluated certain aspects of new media and information as problematic. These problematized manifestations include: the speed of transformations and the pace of knowledge acquisition, the increasing number of individuals who have access to information via technology, the ever-increasing number of individuals producing knowledge, the knowledge tools inherent to technological environments, the influence of technology on the creation of new personal identities, languages-dialects and interpersonal relations. Their analysis of these aspects revealed that problems arise not only as a result of technological change in the communication and information system, but are a consequence of the transformation of knowledge across Western society. Although these transformations did not occur simultaneously, in the same manner, with the same intensity or the same impact everywhere, they undeniably contributed to the spread of technology, influenced users on an individual and collective level, and redefined linguistic, cultural, and social frameworks.

The features of new technologies that had a catalytic impact on developments during the last half of the 20th century vary. Some have become obsolete or are no longer considered interesting, yet they remain in the

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[3] Arjun Appadurai (1949-) is an Indian-American anthropologist recognized as a significant theorist in globalization studies. In his anthropological work, he discusses the importance of the modernization of nation-states and globalization.

[4] Pierre Lévy (1956-) is a French-Tunisian philosopher, cultural theorist, and media scholar specializing in understanding the cultural and cognitive implications of digital technologies, and the phenomenon of collective human intelligence.

background of certain research and prevailing conceptions, while others continue to stand at the center of current dialectics. Lévy (1997: 21-33), in an analysis of the status established by digital technology in terms of theoretical and practical implications for society, highlighted the main problems associated with current and future changes. Primarily, he demonstrated that new technologies have transformed global society, just as had already occurred in the past with discoveries such as the alphabet, the printing press, the telephone, radio, and television. Subsequently, he referred to the cultural implications of new technologies, new relationships with knowledge, necessary changes in education and training, the preservation of language diversity, the issues of social exclusion, and the impact on democracy.

Lévy's observations raise questions about the role of technology in relation to the cultural and social impacts provoked and set to continue by the widespread application of technological innovations. Two concepts play a key role in this analysis: 'cyberspace' and 'cyberculture'. The term 'cyberspace' was first coined by William Gibson[5] in the renowned science fiction novel *Neuromancer* (1984) and successfully adopted by collective imagination. Lévy (1997: 17) defines it as a space, a new framework opened by the communication network generated by the global interconnection of computers. The symbol of this space is now the Internet. His perception of this space pertains to the vast amount of data disseminated, communicated, and circulated, as well as the individuals who receive, process, and repropagate it in the context of circular, continuous development. To date, cyberspace, as it is now called, remains a constantly evolving knowledge space. What is more, Lévy (1997: 21-33) uses the term 'cyberculture' to denote the entirety of material and intellectual techniques, practices, attitudes, ways of thinking, and values expressed and developed in the technological space. More broadly, it constitutes a *modus cogitandi* that seeks solutions to continuously changing situations caused by technical advancements and collective responses.

III.   Concerns Arising from The Prevalence of 'Cyberculture'

Lévy (1997: 288-304) poses six questions regarding technology culture that likely express timeless concerns associated with the integration of technology into social life:

   i.   Is fear of the emergence of a new form of imperialism/colonialism realistic?
   ii.   Does the technological culture promote exclusion?
   iii. Is there the potential for the creation of a direct democracy of the masses?
   iv.   How does the transition from passive to active forms of communication change the language, the content of information, and the nature of communication in a society?
   v.   Can the existence of the technological space positively or negatively affect linguistic and cultural diversity?
   vi.   Could the culture of technology cause confusion and chaos at the social and individual level?

The first of these questions pertains to the fear of imposition of a new form of imperialism/colonialism, especially from the countries that generate these new technologies. Most discussions and debates revolve around the creation of databases: who should input the data and what data is important? The concerns focus on what information should be made available to everyone, what should be partially available or not at all, and what kind of expert should be assigned this task.

The second issue relates to a foreseeable and probable increase in social inequality, with almost exclusive access to cutting-edge technological goods by the 'privileged'. From this perspective, according to Lévy (1997: 289-293), it is possible that significant economic and technological investments may be made in certain countries, but not in others. The result of this would be that the societies of the former benefit from the technologies, hence develop and are categorized as advanced, while those of the latter remain underdeveloped or continually developing.

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[5] William Ford Gibson (1948-) is a famous American science fiction writer. He is hailed as the father of cyberpunk, a subgenre of science fiction, owing to his introduction of the term 'cyberspace' in 1982, as well as the success of his debut novel, *Neuromancer* (1984).

In counter-argument that disputes the above, where it is argued, on the one hand, that to some extent all states will gain access to technologies in multiple institutional, economic, social, and cultural sectors, and on the other hand, that a kind of resistance to collective-interstate homogenization will be achieved, Lévy (1997: 155-159) affirms that any new technological progress inevitably brings about the exclusion of certain groups or changes that may distort elements of culture or society. Through the common use of technology, the formation of 'collective intelligence' is expected, which will function incrementally in the value of culture, reinforcing capabilities/opportunities, resources, local projects, collective participation, and combating inequality. However, there is a risk of creating new forms of dependence associated with commercial use, economic and political superiority over less advantaged countries.

The prospect of universal access to technology has in the past and continues to foster widely spread and highly hopeful expectations: Lévy (1997: 223-239) wonders if it would be possible to create a direct democracy of the masses. The myth of achieving substantive citizenship was based on the public and social dynamics of communication technology in the political field. In his view, the formation of collective consciousness and the development of pluralistic discussions in the technological environment can lay the groundwork for the realization of a direct democracy. In this environment, decisions would be made collectively, and their evaluation would be carried out by participating communities. Wolton[6] (1999: 103-106) criticized these optimistic expectations, arguing that without unobstructed social integration and common values, direct democracy could not exist.

Lévy's (1997: 293-299) approach to the issue of transitioning from passive to active communication raises concerns about the quality and type of information, as well as the fate of national languages. Technology exerts its power over informational data, because it makes them available from "*few to many or from many to many*". People, whether geographically isolated or not, belong, in addition to natural communities, to technological (and today virtual) communities, which have the ability to receive information and knowledge. Technology, under the prism of an innovative communication system, increases the speed of information exchanges in time and space, provided that the systems of symbols, values, politics, educational issues, religions and so on are understood. In order to attain such comprehension, it becomes imperative to effectively manage heterogeneity, rather than rejecting it outright (Wolton, 1999: 192-193). In this heterogeneity, the role of language is prominent. When there is a gap between the capabilities of technological means and linguistic messages, usually a re-approach of the latter is observed/required in such a way as to meet the conditions of the former. From the above, it is inferred that the technological society may not ultimately be sufficiently tolerant of heterogeneity, may not be governed by inclusive cultural understanding, and may not genuinely promote collective self-expression. On the contrary, it tends to dictate massification, cultural homogenization, and alteration of national identity.

The next issue examined in relation to Lévy's fifth question (1997: 297-299) concerns whether technology threatens linguistic and cultural uniqueness and diversity. The use of a simplistic and commonly understood dialect or language in the context of technology's operation, on the one hand, inhibits people or peoples who do not sufficiently master it, and on the other hand, condemns languages or dialects that are far from it to a similar kind of simplicity. Although today's ultra-modern computer systems have solved technical problems associated with the use of demanding alphabets, such as that of (polytonic) Ancient Greek, until a few years ago this was considered technologically impossible. In the early technological environment, diverging language groups, such as the Greek, were forced to adapt and 'sacrifice' something from the wealth of their tradition, in order to remain alive in the emerging technological-virtual world. The case of the polytonic system, which was replaced by the monotonic one because –among other things– it could not be reproduced by the technology of the second half of the 1970s, is characteristic (Θεολόγου, 2008: 9; Θεολόγου, 2016: 16-17).

In relation to the sixth and final issue raised, Lévy (1997: 299-301) argued that technological culture could cause chaos and confusion in the hierarchy and structures of knowledge, while it could eliminate the right of free

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[6] Dominique Wolton (1947-) is a French sociologist. A research director at the CNRS in communication sciences, he specializes in media, the public sphere, political communication, and the relationship between science, technology, and society. His research contributes to the promotion of a conception of communication that emphasizes human beings and democracy over technology and economics.

choice. He points out that the truly innovative features of technology are precisely its potential use as a means of communication between individuals and as a means of ensuring that each community can teach its members what it is –or at least what is considered to be, based on its prevailing ideology according to Antonio Gramsci[7] (Holub, 2005: 110-111)– 'good' to know and, moreover, in the most efficient way.

It should be noted that the –sometimes forced or arbitrary– adaptation of cultural goods, specifically the adaptation of a national language, to the requirements of technological applications, such as electronic typography or digital text processing, creates a mass industry, a mass culture, and indeed in the sense of the 'cultural industry' (*kulturindustrie*) ascribed by Theodor W. Adorno (1903-1969) in his book, *Ohne Leitbild Parva Aesthetica* (1967). In such a case, we are not dealing with a form of culture (such as folk art, popular art, etc.) that emerges spontaneously, that is, which originates from the masses themselves. Essentially, we are dealing with 'product constructions' that are designed to be implemented and consumed by the masses. The cultural industry does not allow the formation of responsible and conscientious citizens, who consciously judge and autonomously and unfettered decide on their lives, which is a fundamental element for a genuinely democratic society (Θεολόγου, 2008: 9; Θεολόγου, 2016: 18-19).

IV.   The Influence of Technology on Language

Language affords every individual the ability to construct their identity, both personal (as an individual) and collective (as a member of a community or a nation). The capabilities of speech, conversation, linguistic expression, and communication render language a source of freedom. Conversely, oppression is primarily linked with limitations on the freedom of expression. In short, language names and reveals the extent of unfreedom. The semiotic system (*langage*) that Barthes introduced constitutes a legislation and the language (*langue*) forms its code. The power inherent in language goes unnoticed, as we forget that every language is a taxonomy, and every taxonomy is oppressive. In essence, the entirety of language is a generalized governance (Barthes, 1977: 12-13; Θεολόγου, 2008: 6).

If we look back at the history of nationalism, we will find that language is a cornerstone for the (self-)determination of a people as a distinct entity (a nation). This observation reveals the essential contribution of language in shaping a unique mentality and a distinct culture. Schleiermacher[8], in the early 19th century, compares language with the state and the church, as each separately constitutes an expression of a particular way of life that encompasses and develops its own language. Within every individual, only one language takes root firmly. Regardless of how many other languages someone may learn in the course of their life, a person belongs absolutely only to one language. Each language reflects a unique way of thinking. The process of thought, as mediated by a particular language, carries nuanced meanings and connotations that may not be precisely transferable to another language (Θεολόγου, 2008: 6-7).

The contemporary thinker and compatriot of Schleiermacher, Johann Fichte, defined the concepts of 'people' and 'nation' based on the linguistic criterion. However, the more recent maxim, which encapsulates the nationalist claim to distinct linguistic regions in this particular era, was articulated by the French academic Albert

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[7] Antonio Gramsci (1891-1937) is most well-known for his theory of cultural hegemony, which delineates how the state and the ruling capitalist class – the bourgeoisie – use cultural institutions to maintain power in capitalist societies. According to his perspective, the bourgeoisie establishes a hegemonic culture using ideology, rather than violence, economic force, or coercion. This hegemonic culture disseminates its own values and norms so they become the 'common sense' values of all, thereby preserving the *status quo*. Therefore, cultural hegemony is utilized more for maintaining consensus in the capitalist order, rather than using force to enforce order. This cultural hegemony is produced and reproduced by the ruling class through institutions that form 'the superstructure'.

[8] Friedrich Daniel Ernst Schleiermacher (1768-1834) was a German Calvinist theologian and philosopher. He was notable for his efforts to reconcile the critique of the Enlightenment with traditional Protestantism. Additionally, he had a significant influence on the development of historical criticism, and his work contributed to the foundation of modern hermeneutics. As a philosopher, he was a leading figure in German Romanticism. He is considered the classical translator of Plato in Germany. His philosophy is grounded in the teachings of Plato, Spinoza, Kant, Fichte, and Schelling.

Sorel (1842-1906): "*I speak, therefore I exist*". Language is also associated with the nation (or nationalist theory) not merely as the foundation of a way of thinking but also as the bearer of a culture that embodies an attitude towards the tripartite weave between the social, political, and economic imaginary (Θεολόγου, 2008: 7).

As we previously mentioned in our introductory comments, we can perceive language as a technological medium of communication. Technology evolves and influences communication media, hence consequentially, technological advancements shape –if not determine– every single language on a daily basis across various dimensions (semantically, morphologically, stylistically, lexically, syntactically, etc.). Simultaneously, given that not all citizen-users possess equal access to technology, an inequality inherently manifests within the communicative tool itself. This inequality, as a concept, directly refers us to the realm of politics. Language, via the act of speech, serves as the catalyst of political life, in contrast to labor, where we are constrained by the demands of the economy and production. The phenomenon of language and speech, in general, is a matter of serious disagreement within the ambit of social thought, particularly after the so-called 'linguistic turn' in Philosophy (Θεολόγου, 2008: 4; Θεολόγου, 2016: 18).

Furthermore, technology –in combination with language and education– becomes a criterion for social stratification, a tool of power for an unclear (informal or latent) elitism, or 'partiality' in relation to decision-making participation. Paradoxically, technology theoretically offers the potential for the exact opposite, namely the expansion of genuine participatory democracy (Θεολόγου, 2005: 125-129, 144-145). As a medium of communication and as a spectrum of education, we observe how it is constantly adapted (and sometimes restrictively constricted) to fit within the confines of technology, to be accommodated, for example, on a keyboard (Θεολόγου, 2008: 5). These observations raise, in our opinion, the pivotal research question of whether we might detect an endorsement, perhaps, of the theory of Technological Determinism.

V.   Technological Determinism

This is a theory that, by merging social and technological perspectives, interprets phenomena in which causality is attributed entirely to technology. According to this theory, the assumption is accepted that neither humans nor the society that produced it can influence technology, as it possesses inherent features and properties. The main approaches to technological determinism revolve around two axes:

i.   Technology is independent of social and political influences.
ii.   Technology essentially not only influences but is also responsible for societal changes and the new structures arising from these changes.

In line with the above, a technological determinist looks to technology for solutions and explanations for every action, completely ignoring the role of the human element and society. This term began to gain traction in the 17th century when the creation of the railway was believed to affect perception and behavior and that machines could be construed as living organisms (Curran, 2003: 69-98).

Smith and Marx (1994: 1-34) differentiate between the 'soft' version of technology, which posits that it leads to changes by responding to societal pressures, and the 'hard' version, which argues that technology constitutes an independent factor, autonomous from other social constituents. Proponents of the Information Society favor the 'hard' version. They argue that the exclusion of social and economic factors makes it possible to successfully predict how society will evolve as a result of the application of one or more technologies.

Technological determinism is often identified in the existing literature concerning e-governance. Heeks and Bailur (2006: 243-265) found that a significant percentage of studies are related to this phenomenon. They argue for the need for balance between technology and society, as different factors can lead to the acceptance/rejection of a technological innovation.

Christian Fuchs (2008: 79-83) contends –quite rightfully– that the Information Society, as a result of the Technological Revolution, is already a universally acknowledged reality. Indeed, there is a significant change in the way society is organized and operates, as more and more people work utilizing technologies, while goods and services are produced by workers who manage information and knowledge. Technological advancement is not found to exist outside of society and is not disconnected from social, economic, and political factors, or vice

versa. Rather, it is seen as a tool to enhance the dynamism of all facets of social, political, economic, cultural, and educational life.

VI.   The Impact of Technology on (Educational) Reforms

It is clear that cultural and educational models in the so-called 'Western' world have undergone major changes. Kraemer and Dutton (1979: 80-106) warned that the application of new technologies fundamentally affects how a state operates, dictates how an organized group of people acts and interacts, and, to a large extent, drastically changes the face of societies on multiple levels (Angell, 1996: 81-85; Lash, 2002: 4).

Each society processes communication codes that are considered necessary for the transmission of knowledge, interpersonal and intercultural encounters at the level of linguistic (oral or written), non-verbal, and visual communication. Communication reflects society. In fact, each language manages to express all the culture that has been invented by a group of people. Today, more than ever, technological changes, apart from achieving harmonization among countries, need to highlight the importance of existing cultural diversity among them, its richness, and the history that connects them. Governments, correspondingly, need to focus both on the elements that individuals and cultures have in common or the ways in which they can be partially homogenized, and also to highlight the complexity and value of their differences (Appadurai, 1996: 27-31).

New technologies appear to promote closeness among people, social-educational systems, and cultures. However, this does not imply the elimination of differences in the content of knowledge and the implications arising from them. The indiscriminate imposition of communication codes, as perhaps temporarily dictated by technology, should not be enforced. Behind technological means and the corresponding material, there must be people deciding at their discretion what should be preserved or what needs to be changed in the pre-existing systems (Şandor & Tripon, 2008: 117-121). The choices of those in power must primarily be guided by national interests and corresponding goals based on their common cultural and historical experiences of the collective to which they belong.

From the above, it becomes evident that reforms, including educational ones, that are implemented as a result of technology, do not constitute a neutral or objective process, but are the outcomes of decisions made by those in power. They typically know how to capitalize on the expectations of the moment, aiming to secure – sometimes multiple financial– benefits from the intended reform, and ultimately retain control of the transformation process. Thus, while technology seems in some cases to lead to the inevitable acquisition of a cultural, social, or educational model that gives the impression of homogenizing diversity, such a scenario is not entirely accurate (Angell, 1996: 81-85).

Indeed, during the latter half of the 20th century, technologies tended to proliferate rapidly across the entire 'Western' world, with a pronounced political interest in their immediate integration. Gradually, national and local societies gained access to these new technological services, and a reform strategy was developed to promptly adapt local culture to the new, more universal technological world (Combi, 2016: 4-6). However, this process, in several cases, including that of Greece, came with a heavy price: the loss of invaluable 'cultural capital'.

VII.   Conclusions and Extensions for Further Research

In relation to the changes that have occurred to date due to the emergence and use of technologies, these are numerous and can be identified in the fields of economics, society, education, culture (and consequently language), science, as well as in the value system. Governments have undertaken corresponding reforms in order to align with the new technological realities and the unprecedented technological conditions, to avoid falling behind in terms of development. The question that logically arises pertains to the extent to which the new state of affairs has had a positive or negative effect, and whether it acted as an inhibitor or a catalyst to the existing and traditional cultural, social, educational, and linguistic background of each country. That is to say, one must wonder about the extent to which the influence on local identity, in its various manifestations, was considered *a*

priori in the attempt to incorporate new technologies. These innovations shaped a conceptually omnipresent space, as well as instantaneous ties that negated the sense of spatial distance (Lévy, 1997: 150-155).

With respect to the Greek case, in our view, it would be of research interest to examine the role of technology in the educational reform of 1976 (with George Rallis as Minister of Education) and in the administrative reform of 1982, as well as the impacts of these reforms on the Modern Greek language and on citizen status. We consider *in principio* that the subject of an educational-pedagogical-educational (and administrative) intervention should not be confined to the measures of its acceptors-users, but should constitute a purely pragmatic work in the name of the subject, and in this case the language, culture, education. We believe that the implementation of the aforementioned reforms facilitated some large publishing conglomerates in introducing and implementing new –and much more economically advantageous– technologies (e.g. Desk-Top Publishing, DTP) into their communicative "tool-product" which was none other than the "body" (language-text) of their newspaper and magazine. This is an example in which a language (in this case, the polytonic variant of the Greek language) was adapted –that is, it was functionally and institutionally modified, so as to conform to a technological evolution (Θεολόγου, 2008: 10; Θεολόγου, 2016: 19).

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