



Doctoral School of  
Sociology

## **Collection of thesis**

**Árpád Rab**

**The impact of digital culture on human behavior through the example of  
gamification**

**Theme leader:**

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Science Department at the University of Szeged

Budapest, 2015

**Sociological Institute**

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The questions of my thesis:

1. What are the main and deepest changes indicated by digital culture in society and economy?
2. What are the attributes and elements of digital culture?
3. Can be researched computer games as cultural objects? What are the results of researching of computer games as social attributes?
4. What is the real valurity of gamification?
5. What kind of player attitudes can be described?

## **Accelerating changes**

New technologies are spreading at an ever increasing pace. Looking at how many years it takes in 80% of the world's countries for a given technology to spread (a functional system to be built up), it can be seen it took the railway 125 years to become used globally, while the same process only took 100 years in the case of the telephone, and less than 75 years in the case of the radio. Assuming an ever accelerating rate of penetration, the use of personal computers spread over a period of about 25 years, while the same figure for the use of mobile phones is approximately 20 years (Datta, 2011). The spread of mobile internet is anticipated to take place even faster, but only preliminary estimates are available at his point.<sup>1</sup>

The ever more rapid speed of the market saturation achieved by technologies is shown in an analysis by Michael DeGusta (DeGusta, 2012). Using four source groups, (ITU, Pew, United Sates Statistical Office, and the Wall Street Journal) DeGusta studied the spread of various technologies in the past few decades.<sup>2</sup> His most important finding was that three phases of a technology's spread can be distinguished: one from the launch to 10% saturation, another between 10 to 40% saturation, and the last one from 40 to 75%. The spread of landline phones and electricity took off at a very slow pace (10 percent market saturation was achieved in 25 and 30 years, respectively), while mobiles moved faster, producing the same saturation in just two and a half years. Of course the cost and time of building up a technology's infrastructure, as well as the size of the investment are key factors; however, these categories do not apply to tablets. It is interesting to note that televisions achieved 10% saturation over about 11 years, while this only took smart phones

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<sup>1</sup> See for example the report by GSMA: [http://www.gsmamobileeconomy.com/GSMA\\_ME\\_Report\\_2014\\_R2\\_WEB.pdf](http://www.gsmamobileeconomy.com/GSMA_ME_Report_2014_R2_WEB.pdf)

<sup>2</sup> In the United States

eight years. When considering the second phase (10-40%), a rearrangement can be observed among technologies. The spread of electricity showed acceleration in this phase, as it reached 30% saturation within the scope of only 15 years. An acceleration can be seen in the case of televisions and smart phones too: both achieved this rate of increase within two to three years. Televisions achieved 75% penetration from 40% in five years. As the penetration of smart phones and tablets have not yet achieved this level, no comparison can be made with these. The speeding up of the spread of televisions is spectacular; the same rate of acceleration cannot be said for personal computers, although there is some acceleration here too (PCs achieved 10% in nine years, 40% in 14 years and 75% in 13 years). Based on currently available data tablets and smart phones seem to be following an accelerating path, but this can only be stated with certainty in ten years' time.

I wish to highlight an important aspect of the ever increasing spread of technologies: this spread is faster than what would correspond to the previously measured rate of knowledge transfer from one biological generation to the next. Parents have neither the knowledge, nor the practical experience to enable them to pass a model on to young people.

Digital culture has undergone large scale quality and quantity change in the last fifteen years. Instead of a "computer by-product", a living, thriving and expanding social phenomenon (one in interaction with traditional culture) evolved (Rab, 2004), primarily as a result of the penetrating changes of the information society. Although this process began almost fifty years ago, a development boom in digital culture was triggered by and has been continuously fuelled by the fast pace spread of broadband internet and digital imaging tools.

Today's digital world has numerous new attributes. None of these are technologically-driven, but rather the result of cultural change. The digital world is defined by a two-way interaction: technological changes are primarily induced by cultural changes, which then also exert an impact on culture. The characteristics to be listed on the following pages are more in-depth changes, independent of concrete technological devices; however, specific technological equipment (or a group of them) becoming popular and increasingly widespread might alter the rate of the changes discussed below; an example for this is the most important changes nowadays, i.e. the breakthrough of smart phones and the revolution of wireless 'omnipresent' internet access. These changes are not isolated from one another, but interact with each other time and again, influence one another, enhance and curb one another. Most typically they exist

simultaneously, amplifying each other's influences; here we can highlight for example the close relationship that interactivity and interconnectivity have with multitasking, but the phenomenon of the crisis of identity can also be linked with an increase in uncertainty.

The appearance of digital culture was not the first communication revolution in the history of mankind. When Johannes Gutenberg printed the Bible in 1454, he also launched a communication revolution (Harnad, 1991). In contrast to the changeable nature of oral communication, the printed text reproduced unchanged introduced a rational and reliable communication channel that was easy to follow. Communication through printed texts allowed people to see the world in a more analytical, rational and organised way. The dominance of the printed word was first dented in the 1950s, when television started to spread. And now the spread of digital culture, and within that the spread of digital media in particular, have put a definite end to the 450-year hegemony of the printed word: digital literacy and digital culture in general require new skills and approaches and a different way of comprehension. Kovarik talks about more communication revolutions: first the revolution of printing, then the visual revolution (triggered by photography), the electronic revolution (radios and then televisions playing the key role), and finally the digital revolution (computers and networks) (Kovarik, 2011). In my opinion the revolution of knowledge acquisition and sharing is about to begin, with its driving force being smart phones and the mobile internet.

### **Characteristics of digital culture**

In the past fifteen years I have been studying the different characteristics of digital culture. As they do not form an integral part of my article's main line of reasoning, below I will only provide a short description of these characteristics.

**Oral literacy:** digital literacy is far closer to oral communication that preceded the revolution of printing than it is to the written communication that emerged after the appearance of printing. In a digital environment the boundary between the written and the spoken word is blurred. (Ong, 2010; Szécsi, 1998).

**Distancing from the source:** digital forms can become independent from their traditional (prime) source, which is why digital information gaining ground creates fear and doubt in many people, and indeed it there are new opportunities of abuse in a digital world: the authenticity of a text, an image and a film extract cannot be ascertained at first.

**Permanence:** everything we do in our digital environment leaves a trace. The

time and date of opening a file is stored just like the love poems we type in; when viewing an average website the amount of information that leaves our computers is virtually the same as that arriving on it. In the information society it is not retaining information but deletion and the right to forget that constitute the real challenge.

**Copiability:** digital information is easy to copy, and once joined into a network the opportunities for this are infinite. This phenomenon generated new ways of distribution and spreading, which turned the contents industry upside down.

**Instantaneousness:** in a digital world we can share our experiences, send and read our emails instantly. IM and chat culture creates the impression of non-stop contact, not to mention that news about events that are taking place in other corners of the world can be instantly accessed, and through several communication channels, etc.

**Interactivity and interconnectivity:** these are two key terms when we talk about the digital world (and digital society). Everything is interactive in a digital environment, even television use, and it is natural to us that any cultural object can be altered. Interconnectivity (a gift to humanity by the electronic devices of the information society) creates the opportunity for constant access and contact, which has an impact on many traditional cultural patterns, from our personal space to our work culture.

**Perception and experience:** the mentality of the users of digital culture have undergone vast changes in the last ten years: they have learnt that perception can be manipulated digitally. It is now generally known that the world we perceive can be generated digitally. Moreover, for the first time in human culture it is suggested that our perception of virtual and non-virtual reality might be the essentially the same. This lack of distinction is strengthened by the trend that technologies originally used in the entertainment industry are also used in other industries, and also by projecting a virtual environment onto the real world (augmented reality, LBS technologies).<sup>3</sup> Thanks to the virtual worlds of the future the real world that surrounds us will blend together with our digital environment.

**Identity:** in every culture individuals play many roles during their lifetime, assuming many identities. The number of these roles and the speed at which

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<sup>3</sup> Augmented reality refers to an extended reality, in which a virtual 'layer' – usually providing additional information – can be visualised with the help of technological devices (e.g. special glasses, mobile phones, etc.). LBS stands for location-based technology and constitutes technologies aimed at providing relevant information and services of interest to users at a given time and place based on identifying the users' location.

they replace one another do not only depend on the individuals but also on their cultural disposition and the influence of their environment. A new factor emerged in the information society: a set of human identities largely impacted by technological circumstances, i.e. network identity. As a result of computers, visualisation technologies and mainly digital identification, we can be somewhere without physically being present; others can assume our identity without looking like us, without even having the same sex; and what is even more alarming is that in the meantime these people retain their own personality. Our virtual identity is faced with a dual burden: it is crucially important, yet it can be separated from its rightful owner.

**Insecurity:** the issue of information society being a risk society has been emphasised by many. However, it is a misleading approach since people in medieval times were exposed to the same degree of risk – or perhaps much greater – due to the changeable social structure, healthcare and natural environment they lived in, which they could not control or have any influence over. In the case of natural peoples this lack of control reached such a level that magic and religious rites were used as a means of trying to control and influence their environment.

**Speed and virtuality:** every new technology serves the purpose of increasing speed. The very first trend was to increase the speed of changing one's physical location, but nowadays the ultimate objective is to increase the speed of information exchange. This acceleration can be felt in our everyday lives. The speed of modern technologies exceeds the natural speed of the human, biological organisms, which is difficult to grasp and creates tension that needs to be dealt with; it must be addressed both by individuals and communities. In a digital environment there is a distance between users and the sources of information and objects. Hence, we feel distanced from palpable reality, and the role of trust and reliability has assumed greater importance. Perhaps the biggest cultural switchover is taking place in people's appreciation for 'real' and virtual cultural objects. In other words, are virtual cultural objects regarded as valuable by people living in a given culture? The seemingly non-palpable nature of digital cultural objects and patterns might easily lead to weightlessness. Nevertheless, in the coming decades people will most likely accept that digital actions, digital words and digital objects are real acts, real words and real objects in every respect.

**Multitasking:** in practice multitasking means that several tasks are (can be) managed simultaneously. Typical examples for this are media consumption and entertainment (Székely, 2014). Intertwining, simultaneous activities divide our

attention, thus certain elements can be easily pushed to the background. The opportunity of continuous online presence enables us to manage several interactions in parallel communication spaces, as a result of which the 'blending together' of personal, group and mass communication is bound to happen. Similarly to background media consumption, we can talk about the appearance of background communication too, which makes it possible for users to be simultaneously present in different communication spaces, thanks to broadband connection. There are two sides to how multitasking is viewed. On the one hand, it is doubtlessly a strongly present and indelible phenomenon which is used to different extents and at different levels of success by individuals, communities and, for example, businesses. On the other hand, multitasking definitely disperses attention, frequently producing quasi-entertainment, quasi-work processes, quasi-recreation and quasi-connections.

**Using microtime:** in my opinion, this characteristic of digital culture has been assuming increasing importance since smart phones (and tablets) became widespread. This technology enables instant availability (it was mostly necessary so that incoming calls would not destroy running processes, such as reading and gaming, for example). One of the important attributes of mobile games is that there is virtually no load time, or if it is interrupted, the process resumes in 1-2 seconds. Besides gaming, online chat plays a crucial role, in my view, spending microtime. Smart phones display incoming messages, so users do not have to constantly watch and wait. It can be seen if someone writes us a message, so we can quickly reply while walking or while the traffic light is red. In another time-fragment we can glance at the screen again, check and reply, etc. The use of microtime increasingly reduces the chance of being bored, while also teaching users how to focus their attention in short time spans (too). Thus, we have the the great 'rival' of multitasking: when spending microtime we do not manage simultaneous activities, but quickly interrupted, consecutive and alternating processes. This trend can potentially lead to the weakening of long-term concentration.



## The dual circle of digital culture

In the last decade I have been researching various phenomena linked to digital culture. In the previous section I provided a brief description of each one of the main characteristics of digital culture, and over the years I found that these 14 characteristics can be arranged in a complex system comprising dynamic dichotomies that reinforce each other. Situations that arise in the context of digital culture result from the mutual interaction and attributes of these elements.

In order to visually represent this system I first established axes between the above mentioned characteristics and created two circles. One circle contains the characteristics of one of the axes, while the other one those of the other axis. Since the dichotomies contained in the two circles complement and provide an explanation for each other, I drew a dual circle, in which the position of each element is carefully designed in relation to its pair in the dichotomy, as well as to the other elements.

I have named this model the dual circle of digital culture.

The characteristics arranged in dichotomies:

- Interactivity - Interconnectivity
- Multitasking – Using microtime
- Orality literacy – Distancing from the source
- Identity - Insecurity
- Perception - Experience
- Copiability – Virtuality
- Permanence – Instantaneousness

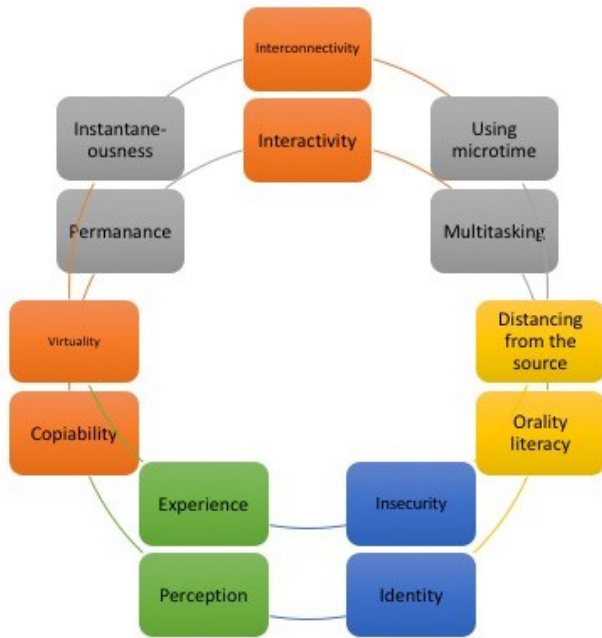


Fig.1: The dual circle of digital culture

The different colours are used to facilitate a better understanding of my model. Oral literacy and distancing from the source form a dichotomy intended to occupy a position on the other side of the circle, relative to instantaneousness and permanence. In a 3D representation the two circles would not run side by side but above each other; however, in a 2D representation, such an arrangement could not be read.

The categories of multitasking and using microtime have a similar effect but their *modi operandi* are each other's opposite, while the fragmentation of time affects perception and virtuality.

The dual circle of digital culture is a system of interpretation. Its primary objective is to represent the multi-layered and complex nature of the operation of digital culture, but it is suitable to be used for future framework system analyses.

It is possible and worth further exploring the elements of the dual circle of digital culture. It is not only the elements of the dual circle that form complementary pairs (dichotomies), but some of the notions themselves are ambiguous. One such notion is speed, since one of the highly important and typical characteristics of today's digital culture is slowing down and slowness, as well as its extreme endpoint: breaking out of the information society.

## Primary research

In my primary research I studied the world of computer games and gamers, mainly computer games are one of the most spectacular and impactful areas of exploring and being immersed in digital culture. One of the objectives of my research was to find out as much about players as possible.

I've tried various data collection methodologies: observant participation, online focus groups etc. The data used in my theses become from interviews (20) and questionnaire (N=147). I conducted an online questionnaire (exploratory research, with a sample of 147 persons) asking them about their motivations and attitudes. After performing a factor analysis of the data I established five types of players.

For the first type of player there were three key variables: it is important for them to wander in the virtual world exploring locations, non-game characters and areas not yet discovered by others, as well as to get to know other players. A clear picture can be formed of a player who is a curious discoverer immersing himself in the digital world and playing computer games for playing's sake. I have named this type 'the adventurer' since the word encapsulates the characteristics of this type and it can be associated with one of the most popular hero types of fantasy novels (adventurers), who are outstanding heroes freely roaming in their world, have superhuman abilities, and rise above everyday rules while predominantly acting for the benefit of society.

The second type of player has the following three key variables: for him or her it is important to defeat other players, to compete with them, and to get to know other players. This type places emphasis on his or her relationship with other game characters and fundamentally regards the game as a challenge and rivalry. I call this type 'the gladiator', alluding to the fact that they are fighters who do not fight just for themselves but also to win the attention of others.

The third type of player is the kind who often chats online and frequently engages in long, serious conversations with his or her online acquaintances; moreover, he or she establishes living relationships with online acquaintances who also provided help in solving non-game related problems. So this player builds relationships and enjoys it. I have named this type 'the bard' since during their games these players mainly concentrate on their relationships with others and they also excel in problem solving. Thanks to their relationships, they are both entertainers and the entertained.

The fourth type of player often plays just for the sake of relaxation, and they enjoy playing role games with their characters – this type is a genuine lover of games. I call this type ‘the magus’ who lets him or herself be enchanted for mere entertainment, adapting to the world he or she is in, while playfully changing identities within a given game. The word ‘magician’ better describes this free type of player playing tricks, but the word ‘magus’ fits in better with the terminology of role-play games and thus the names given to the different player types are more unified (as they are frequently used terms in computer games too).

The fifth type of player uses online games merely as a means of distracting his or her attention from other things. An escapist attitude can be detected here, although only in a blurred form: games are a means of breaking out of everyday reality (but not necessarily to escape from problems!), and looking for a world governed by other than the mundane, customary and old rules of everyday life. I have named this type ‘the ranger’ since in fantasy literature rangers are the characters and heroes who, being sated with the life of their city or community, wander alone, generally in nature, enjoying their solitude and their own rules of living their lives.

For some of the players the games serve as a means of escaping, hiding away from or breaking out of the real (and the digital) world. When assessing the types of players, it can be ascertained that every player has a primary approach and basic expectations of games, but their attitudes might change depending on their mood, the virtual world of the given game, and the other players. These changes might occur for longer and shorter periods, and it is crucially important what the players are looking for in playing games at a given point or period in their lives.

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