

E-motivity: the social impact of the Internet as a limbic system*

E-motividade: o impacto social da Internet como um sistema límbico

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ABSTRACT

The article metaphorically uses the human limbic system to describe the new system of social interaction created by social networks, exploring the conditions involved in the creation and development of emotions on the internet, in such a way as to reveal the relation between technology and psychology. In defence of the argument that the immediacy of social media favours reactions to public events, it presents examples such as the individual responses to the financial global crisis and the demand for more transparency in the governments and financial institutions, in cases like WikiLeaks and the Arab Spring. It concludes that the Internet allows individuals to extend their action, that now have a global reach, with possible effects upon citizenship.

Key-words: Internet, social media, limbic system, transparency, digital citizenship

RESUMO

O texto utiliza a metáfora do sistema límbico humano para descrever o novo sistema de interação social criado pelas redes, explorando as condições envolvidas na criação e no desenvolvimento de emoções na Internet, de modo a esclarecer a relação entre a tecnologia e a psicologia. Para defender o argumento de que a imediatividade da mídia social favorece reações a eventos públicos, apresenta exemplos, como as respostas dos indivíduos à crise financeira global e as demandas por mais transparência nos governos e instituições financeiras, em casos como o do WikiLeaks e da Primavera Árabe. Conclui-se que a Internet permite que os indivíduos ampliem sua ação, que agora pode ter um alcance global, com possíveis efeitos sobre a cidadania.

Palavras-chave: Internet, mídia social, sistema límbico, transparência, cidadania digital

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THE INTERNET HAS a very important emotional dimension. People increasingly feel the need to share more and more personal details about themselves, their thoughts, their feelings and ideas with the wider world, as part of their online existence. What are the first things we can and we like to share? Surely emotions. We go on the net and on social networks to express and share indignation, happiness, hate, irony. Feelings and emotions are the basis of the growth and survival of our digital as well as our personal image. Without emotions, the whole social media system would collapse. Sharing emotions certainly does not exclusively happen on the Internet, it works on all media in different ways. However because it is fundamentally relational, the network stimulates more and more emotional drives in fast and skillful configurations. Social media (among other platforms) develop the emotions and spread them on the networks, as the limbic system does in the body.

This is true not just for the *friends* on Facebook, or for couples using match-making sites, but also for the whole of our lives as lived on this medium. It is true for how we share our politics via Twitter or our viral videos on YouTube. Social media act as the agent for conveying and sharing emotions. The online world works as an integrative system of impulses, desires and frustrations, which is moving at the speed of light. The great movements such as the Arab Spring, Occupy Wall Street, or Spain's grassroots movement Los Indignados, all represent collective emotions and connectivity amongst peoples across borders and cultures.

Research reveals that anger travels faster than joy. The short pamphlet *Indignez-vous* by Stéphane Hessel (2011) bore precisely on this rapid virality of anger on the networks. The spark that set off the fire is undoubtedly WikiLeaks. Between the publication of secret dispatches on WikiLeaks and *Indignez-vous* occurred an evolution of social feelings that were unassumed but not entirely unconscious. WikiLeaks was a moment of awakening to the hypocrisy of governments. Hypocrisy and duplicity in some sense are necessary to diplomacy, but there is a limit to everything. There arose a greater demand for accountability on the part of institutions. The new media have certainly created this sentiment, because they have made visible locally and globally reprehensible actions and behavior that used to be drowned in censorship or general ignorance. In this transparent world, we live in, the Egyptian boy who sees the Tunisian boy rebelling against a corrupt regime feels called to action regardless of geographical distance. The same goes for everyone else. As McLuhan (1964) said, the electronic languages have made the whole world the extension of our skin.

I like to use the organic metaphor of the human limbic system to describe this new system of social interaction. By using this metaphor, I want to explore the conditions surrounding the creation, communication and development of emotions on the Internet in order to throw light on the relationship between technology and psychology. It is important to understand this interplay when trying to analyse the ways in which the media modify our environment and how people are changed by the use of the media they are exposed to on a daily basis. This is especially important when it comes to a technology that transmits language, and which therefore becomes an interface between language and the mind of the user. Furthermore, in exploring the relationship between knowledge and the media, we can also examine the ways in which new technologies affect our conscious and unconscious processing of information and our affective responses.

In media connected via Internet, there are many emotional and cognitive events being transmitted from person to person, which in turn motivate the sharing of experience and also the call to political action. It is clear that today's geopolitical map of the world has been changed by the arrival on the political scene, via the Internet, of a new class of mass political activists, who are no longer the *Silent Majority*¹.

So now that the majority is silent no more, the result is a kind of interactive social *massification* consisting of the connections between many individuals who respond to some current issue as a significant collective. The Spanish network sociologist Manuel Castells (2009) called this the collaboration of many "mass individuals". Castells identified that the relationships that are established between individuals on a personal basis, from one person to another, are much more complex and articulated than those that come out of the reactions of the crowd or the anonymous mass. We can therefore imagine that the result of this endless interaction between individuals on the Internet is equivalent to the infinite multiplication of conversations over a cup of coffee.

These changes in the way we interact and relate to others in a mass social context are directly reflected in how we use contemporary media. In particular we can see a stark redefinition of the distinction between public and private in the conversational context of the sites connected to social networks, as well as the emergence of new forms of intimacy and the expression of emotions that reinforce both individual action and social interaction.

This new experience of real-time sharing of information, emotions and opinions by individuals rests on what I call the emotional limbic system.

The limbic system regulates emotions in to the human body (as it does in all mammals). It is a complex set of smaller brain structures that occupy the inner part of the brain and is repeated in the two hemispheres. It was formed

1. A name given to essentially the more conservative bulk of the American population.

millions of years ago, and is present in many other animals that are less evolved than man. This region of the brain, which is closely connected to the cerebral cortex, or grey matter, regulates vital biological rhythms, including emotive responses such as fear and aggression.

So what, in fact, are emotions?

- They are part of a system of bio-regulation that facilitates survival;
- They are physiological responses triggered by certain systems in the brain in response to stimuli outside or inside the body;
- There are two major categories of emotions:
 - Primary emotions: those created through the process of natural evolution – for example happiness, sadness, fear, anger, or disgust;
 - Secondary emotions: those related to a social or cultural situation – e.g. jealousy, embarrassment, guilt, pride.

The limbic system works through the biological relationships between the various operating units of the central nervous system:

- The thalamus takes information from outside the body via the senses and transmits it in a different part of the brain, such as the cortex or the amygdala to trigger responses.
- The hypothalamus takes and sends information into the body by means of different regulating mechanisms. For example, it triggers the response of the adrenal gland to stress, which then causes more energy to be released for immediate use.
- The hippocampus record facts and data. It does not stimulate emotions, but transmits data to the cortex to be processed.
- The amygdala record tone and intensity of the emotions and informs other parts of the brain, especially the hypothalamus, if danger is present.

The concept of the *social being* is not just a metaphor. It began as part of early tribal culture, but nowadays even in a modern city, where people are part of the collective social being, they are continually subjected to the emotional currents of the moment. The great theorists of the crowd, Gustave Le Bon (*The Crowd: A study of the popular mentality*, 1895), Elias Canetti (*Crowds and Power*, 1960) and Jacques Ellul (*Propaganda: The formation of men's attitudes*, 1973) have all made relevant observations about man's social being. Similarly, it is also understood that where people have physical needs in common, an emotional exchange also occurs as part of the interaction. The arrival of real-time media, radio, television and now the Internet, magnify this process and speed it up more than ever before. In summary, therefore, we can say that the Internet has extended the influence of the limbic system of the individual body to the crowd.

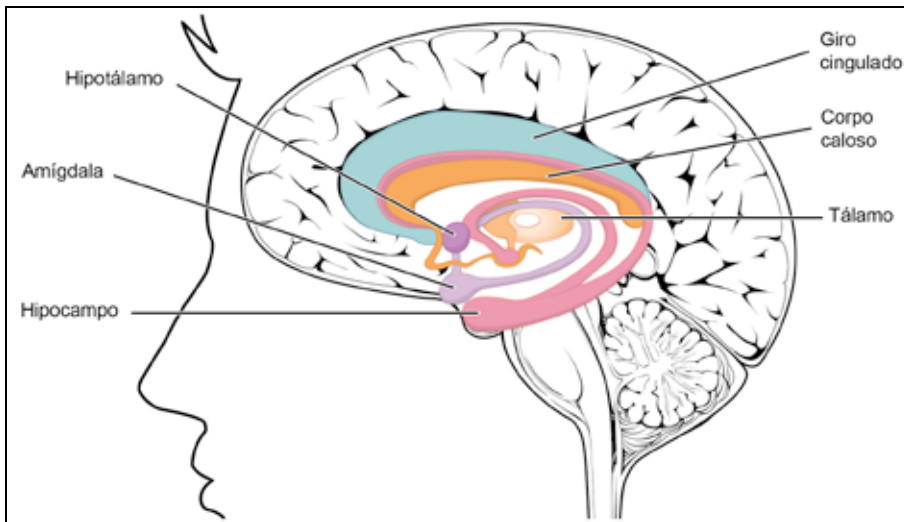


FIGURE 1 – Limbic system (source: OpenStax College/Wikimedia Commons)

We can more or less accurately compare the various elements and functions of the biological emotional network to the technological organs of the Internet's *central nervous system*. The screens and keyboards, and all the technical equipment of PCs, tablets, video cameras, recorders and mobile phones, are co-ordinated via the Internet, which is equivalent to the thalamus transmitting information in order to bring about action. Similarly, data aggregators work like the hippocampus to combine information from different media and sources, and thus enable the social emotion to grow. Social media, like Twitter in particular, can be equated to the amygdala, which plays the role of an accelerator and determines the amount and size of the emotional response to an event. Just think of how Twitter stimulates its followers to instantly experience a wave of shared feelings with the crowd. Twitter is at once both very individual, touching everyone personally and revealing their inner being, while also extending the influence and impact of the crowd.

Social media, the hippocampus of the Internet, carry and store images and text that stimulate emotions and allow the aggregation of information and the sharing of facts and opinion in real time. Facebook, Twitter, chat rooms and forums, as well as other sites that are highly regionalised make people react in emotional waves that can bring people from different cultures, religions and social backgrounds together.

The immediacy of social media enables the individual to get involved on an emotional level with current social and political issues. The readiness to respond emotionally to external public events results from the perception on

the part of social media users, that they are connected personally with others sharing their own political views, and with whom they are willing to share information and news in real time.

Examples of the interface between the personal and the public are the views and arguments exchanged about current issues such the response to the global financial crisis, and the growing call for greater transparency and responsibility addressing large financial institutions². The collective response via social media to issues such as these raises the growing indignation of the crowd. In the past, people tended to have more tolerance of corrupt governments or firms because there was a lack of accurate information, and more often than not after the fact and not in real time. Now, however, especially after WikiLeaks, there exists via social media a sort of permanent state of alertness which can trigger a collective cognitive response.

The WikiLeaks case was the start of a new political reality, where transparency *has a value*, information is currency, and where awareness and responsibility have become an ethical event. The second shoe dropped with revelations by former NSA agent Edward Snowden regarding everyone being spied upon by the National Security Agency of the United States. Transparency is here to stay.

We experience global emotions all the time, but we don't always realize it. For example, we share the global dismay regarding the revelations – and subsequent treatment of Edward Snowden – and simultaneously experience a subconscious solidarity with the multitude on this topic. The era of transparency throws light on scandalous practices from trusted institutions. A global unease sets in making people ripe for local flare-ups. Everybody is involved in and with the Ukrainian war with Russia and everybody has an opinion. The Sochi Games give mixed feelings about Vladimir Putin to everyone. The Jihadists beheadings, whether real or simulated, threw a sense of horror in millions. The mobile society is e-mobile like e-motion.

Another critical aspect of the rise of global transparency is that the world itself is becoming instantly transparent. That is an effect of the speed of transmission. In the past, dreadful things happened too, of course, but because they were revealed only after the fact, and sometime not at all, the emotional reaction was weakened by delay, doubts. Post-factum attempts to explain them away took the better of the emotional edge. Today, as we are told, and sometimes shown within minutes that a person has been decapitated, or an airplane crashed in an apparent murder-suicide, the majority of witnesses find themselves in the throes of an emotion very close to that which comes into a heated argument or altercation.

2. See *Inside Job* (2010), a documentary about the collusion between the U.S. government and the big financial groups.

The reasons for individuals and groups to become indignant about specific events or information can occasionally seem less clear today as the world has become too complex, vast and interdependent. There are an infinity of possible agendas to support and there will always be enough people to share them. In the *Long tail* of social emotions, people feed on an inexhaustible variety of combinations in relationships. We live in a state of interconnectivity that has never existed before that allows the most rarefied and unlikely associations.

For example, as mentioned above, the small book by Stéphane Hessel, published in France in 2010³ started the international movement called *Los Indignados*. It grew via social media first in Spain and then in many other countries, producing over a thousand emotional waves well beyond the borders of France.

The Internet and Web 2.0 tools introduced into civil society a real possibility of unstructured expression, participatory and collaborative, without hierarchies. Through the process of sharing, in a spontaneous and emotional way, McLuhan's "global village" has become a reality.

That said, on the other hand, collective political participation online has also been derided as so-called *clicktivism* from the contraction of the word *activism* with the verb to *click*. This implies the simple and knee-jerk act of clicking on *like*, which can be seen as a lazy way of belonging to the group, and not a real social membership. See Micah White (2010): "In promoting the illusion that surfing the web can change the world, clicktivism is to activism what McDonalds is to a slow-cooked meal. It may look like food, but the life-giving nutrients are long gone."

This rather harsh judgement of the political impact of social media based movements ignores the fact that people did get involved through demonstrating in the streets. The Occupy Wall Street movement, for example, clearly goes beyond mere clicking and involves real mobilization of people at the physical level. The comparison with the limbic system is made more cogent by the fact that, if sufficiently aroused, an emotion will eventually become an actual motion.

From the Arab uprisings to the protests in Iceland, people's responses have progressed from what would begin online as a local street movement to evolve in a very short time as the drives that power and connect heterogeneous communities. The *Indignados* from all over the world, the *aganaktismenoi* of Greece, The Anonymous, the M-15 in Spain and all other facets of the *Indignez-vous* phenomenon, including the reaction to the elections in Italy, are clear examples of this new phenomenon.

The American sociologist Zeynep Tufekci (2011), who has thoroughly studied the various stages of the so-called *Arab Spring*, has called this phenomenon *network effects*, by which she means the impact of network communications on

3. *Indignez-vous!* – or translated into English as *Time for Outrage!* (Hessel, 2011).

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the behaviour of the mass in times of crisis. The Internet changes the structures and forms of social networks, increasing the speed of communication – modifying and restructuring the public sphere.

In my view, the most important thing to understand and study in these examples is the fact that the Internet allows individuals to extend their impact beyond the confines of their own room and go global. As Tufekci points out, there had been more than seven street protests in Tunisia before *the* event that gave the starting signal to the Arab Spring. For example, in Gafsa, a town in the deep south of Tunisia, there were protests in 2008, which were followed by brutal repression, not only of individual protestors, but also of information. Tufekci notes that at the time of that particular protest there were only 28,000 Facebook users in Tunisia. But after the self-immolation of Mohammed Bouazizi in 2010, the protest movement became viral. And it escaped the confines of the local scene because, by this time, there were two million Facebook users in Tunisia. A key aspect of such a rapid chain reaction of anger and indignation is that public opinion instead of being limited to the local scene, emigrated rapidly to the global one. Indignation was shared and supported by world-wide response to atrocious Facebook photographs of rioters lying maimed or dead in the streets. This example shows that the impact of the network is so strong that it can challenge even the extreme brutality of repression, which is why I believe we are seeing a social impact of a limbic system.

We must also understand, however, that the phenomenon of social mobilization was not born yesterday or even three years ago. There are precedents that can be interpreted as stages of social maturation of the limbic system. Even before the expansion of the Internet, as early as 1989 Chinese dissidents were able to use faxes to send news and images of repression at Tiananmen Square in Beijing, despite government censorship and control of the press and the mainstream media.

In 1994, when the masked Subcomandante Marcos appeared on the Internet as the face of the rebellion in the Mexican state of Chiappas, it was the start of public opinion evolving from local to global. It was no longer possible for the world to ignore the injustice done by the Government of Mexico against the farmers in that region in the name of multinational food companies.

The special case of the Philippines is evidence of the different capacities of the Internet and SMS to provoke an emotional response from the people. For a couple of years (1999-2001) it was known that the Estrada government was involved in many corruption scandals. But an initial protest in 2000 on the Internet had not resulted in a mass impact because, although there were a million Filipinos connected in the world, only 50,000 of these were in their

own country, the rest living as expatriate workers in other countries. In 2001, perhaps because the use of SMS in the Philippines was still free of charge (as part included in the telephone fees) and capable of a broadcast mode, it was possible to contact thousands of people with just one message. The owners of mobile phones thus raised enough anger and indignation amongst the populace to bring down the Estrada government.

In Iran in 2009, the use of Twitter raised awareness about electoral fraud, threatening to invalidate the re-election of the Ahmadinejad government, but it was stopped because of repression:

Regarding the clashes in Iran, Twitter, especially because of its integration with mobile phones, is in fact the only channel more or less open or open intermittently, through which news and information can get through about what is happening in the Islamic Republic after the disputed Iranian presidential election that saw the victory of Ahmadinejad. (Sofi, 2009)

As commented by *The Washington Times* (2009):

What we are seeing is the flickering flame of freedom. People are willing to risk their lives to protest a system that oppresses them and denies them fundamental human dignity. Those who say none of this matters – that it is just another feud between factions of the ruling class, and that it has no chance of bringing about real change – are missing the point. The people of Iran are exercising their sovereign right as a people to stand before their rulers and say “no more”. They are commanding the attention of a world that seeks to make deals with their oppressors. What Iranians are telling us is that they yearn to be free.

What lessons emerge from these examples? This new phenomenon of bottom-up political activism, not organized by political parties, but by ordinary citizens, has demonstrated that it will be very difficult to suspend democratic constitutions and hand over power to members of the same family or the same *caste* as has always been the case before. In that regard, I am particularly impressed by the conclusion that Esther Dyson, chairperson of EDventure Holdings, an active investor in a variety of start-ups around the world, gave to her reflexion on WikiLeaks:

In the long run, WikiLeaks matters for two reasons. The first is that we need a better balance of power between people and power. Information – and specifically the Internet’s power to spread it – is our best defense against bad, unaccountable behaviour.

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E-motivity: the social impact of the Internet as a limbic system

Second, we *do* want to trust our governments and institutions. The point of openness is to make those in power behave better – and to make us trust them more. Rather than viewing them as enemies, we should know what they are up to, and perhaps have a little more say in what they do. (Dyson, 2010)

We are presently faced with a benchmark, a new beginning that no one could have predicted. Young people and the Internet are finally consigning to history that opacity of the ruling process that was still remaining from the twentieth century. Previous power structures and networks have henceforth to contend with the hardly containable velocity of connecting intelligences and sentiments set in motion by the web.

We are in a time comparable to that of the French Revolution. Revolution signals a brutal and radical change of regime at the tipping edge of widespread social abuse. The progression leading from social abuse to revolution reminds one of René Thom's "catastrophe theory". In the same way the Reformation that introduced a durable period of wars between Catholics and Protestants had been provoked by spiraling abuse of papal power and the commodification of *indulgences*. The war between the Sunni and the Chiites is a replica, under electronic conditions, of the religious wars of the Renaissance, just as these were the consequence of arrival of the printing press, as both Marshall McLuhan (1962) and later Elisabeth Eisenstein (1979) eventually argued and verified. There is in fact a symbolic relationship between the beheadings that occurred in the Revolution and those practiced by the jihadists. Both kinds give a terrible blow to the being of each one of us, even of those who claim to have nothing to do with any of that. Today fear penetrates the whole world because the new form of terrorism is global and has no more specific enemy.

Is that the environment in which people want to live? There are clear signs of a global demand for political correctness, for accountability, for the justified use of taxes, for effective ways of fighting poverty and need, for peaceful negotiations etc. The global image of regimes that ignore such values is henceforth starkly contrasted. There is evidence for the rise of a society of sharing, for extended movements that reveal injustice and violence (Usuhadi, Aavaz). On the sensibility side, over an above the presence of *green* movements, which support and transmit global values, the first stirrings of global art forms in new technologies, is certainly a weak signal to be reckoned with because art has predictive action, albeit at a level almost homeopathic, on the future. Art has a very subtle impact on our limbic system. Art too both reflects and accelerates a global planetary sensitivity that in some fashion already exists in incipient manifestations.



FIGURE 2 - Rafael Lozano-Hemmer, *Alzado Vectorial*, Mexico City, 1999-2000 - people from all over the world via the Internet constructed these laser statues one every three minutes (Photos by: Martin Vargas, CC 3.0. Source: <<http://www.lozano-hemmer.com/images.php>>)

The social limbic system of the networks may eventually solve the drama of the current crisis. We can hope for a cross-cultural collaboration at all levels, where the environment will be the subject of the renewed union of humanity, and the main concern of all cultures together. The digital citizen, in fact, will not want to be informed merely about where to go for dinner or predict the climate by its technological gadgets, but will want to know how the world feels and himself or her feel ever so slightly responsible to if not for the condition. We have all kinds of bracelets that tell us about our personal health. In the future we will have apps that keep us informed about the health of the world. The question I ask is: how and when do we collectively arrive to make the necessary transition that takes us from *smart city* to *smart planet*? **M**

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