

Magic in Our Technologies

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In memory of Sir Terry Pratchett, who helped me see the world, and John Luck, who gave me my first Discworld book.



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Introduction



If I could, I would be a mage capable of handling the intangible forces that take control of my environment and others.

These forces is commonly called magic, a term defined by the *Trésor de la Langue Française* as

The art based on a doctrine which postulates the presence in nature of immanent and supernatural forces, which can be used for efficiency, to produce, through ritual formulas and sometimes methodically set symbolic actions, effects that seem irrational.¹

Magic is thus the control of nature by methodical means, to produce a more effective result than without this remedy.

Magic is recognized as foreign to the human body. However, it has permeated the lives of humans since prehistoric times in different forms and different belief systems. An early form is religion. Unlike magic, religion is characterised by an organisation of belief around poles or dogmas common to many cultures. This ensures that participants believe the same things, they hope or fear the consequences of their actions. However, we can also find similarities between magic and religion. Most religions call upon beings and acts called divine. These phenomenons are generally considered ineffable, dominating humanity, and their perpetrators should be revered. Like magic, humans

1 « Magie », *Trésor de la Langue Française*, [on ligne], <http://atilf.atilf.fr/dendien/scripts/tlfiv5/advanced.exe?8;s=1203293235;>, translated from French by the author: «L'art fondé sur une doctrine qui postule la présence dans la nature de forces immanentes et surnaturelles, qui peuvent être utilisées par souci d'efficacité, pour produire, au moyen de formules rituelles et parfois d'actions symboliques méthodiquement réglées, des effets qui semblent irrationnels.»

cannot understand or explain how these phenomena have appeared, or why. Moreover, miracles are attributed to religion and, as does magic, uses ritualised acts². For an atheist, religion is a belief in magic.

In addition to organized belief, magic is also concentrated in the folklore of many cultures. Proposed in 1846 by writer and expert on the topic William Thoms (aka Ambrose Merton), this word is a hybrid of two others: “folk” or the people, and “lore” or knowledge, thus knowledge and science³. Many rituals including belief in magic are part of the laws of these peoples. These beliefs are traditionally transmitted orally, and it is only recently in human history that they have been transcribed and written, in 1250 BCE among Egyptians⁴. Like religion, one can find in folklore “beings” that are not part of Earth’s plane. This includes spirits, witches, fairies, demons ... Some have a positive impact on the lives of believers, some negative and should be feared and avoided. One example of manifestation of folklore is the ritual of throwing salt over one’s shoulder to ward off evil spirits.

Today, a literary genre has become all the rage, with 350 million sales in the world in 2014⁵, proving that magic still exists in the collective imagination: fantasy. This literature typically includes “a

2 « Religion », *Trésor de la Langue Française*, [on ligne], <http://atilf.atilf.fr/dendien/scripts/tlfiv5/visusel.exe?113;s=1203293235;r=5;nat=;sol=2;>

3 MERTON Ambrose (pseud. William J. Thoms), « Folk-Lore », *The Athenæum*, n° 983, 29 Août 1846, p. 886–87

4 GREEN Thomas, *Folklore: An Encyclopedia of Beliefs, Customs, Tales, Music, and Art*, Volume 1, ABC-CLIO, 1997, p.363

5 KOWALCZYK Ola, « Most popular book genres of all time (infographic) », *Ebook Friendly*, 28 octobre 2014, [on ligne], <http://ebookfriendly.com/most-popular-book-genres-infographic/>

mythical appearance and is often displayed by the outbreak or the use of magic.⁶

We live in a world where most phenomena are explained by a Cartesian logic called "Science". These forces could also be called wind, tide, electricity, radio waves, as with many other intangible phenomena to the human eye, but revealed by so-called scientific studies. These sciences are now accepted in most cultures as truths explaining the world around us. This is discussed by a number of thinkers (Latour, Lyotard ...), but nevertheless remains the yardstick by which we measure knowledge. However, they do not always manage to explain what is happening around and even in us. Moreover, very few of us really understand the scientific discourse explaining the principles behind phenomena. We do not all understand what "really is" electricity. A transfer of particles, something coming out of a plug, the essence of life ...?

Humans has created tools to increase their natural capacity for more than 2.6 million years⁷. Indeed, not having the strength nor the edge to be able to lacerate the skin of animal, or break bones, Australopithecus Garhi⁸ had to invent extensions of himself. These tools are the first technical objects or "the translation in terms of a set of concepts and scientific principles deeply separated from each other, and linked only by



6 RUAUD André-François, *Cartographie du Merveilleux*, Denoël, 2001 p.10, translated from French by the author: «un aspect mythique et est souvent incarné par l'irruption ou l'utilisation de la magie.»

7 « Early Stone Age Tools », *Smithsonian National Museum of Natural History*, 18 février 2015, [on ligne], <http://humanorigins.si.edu/evidence/behavior/tools/early-tools>

8 « Australopithecus garhi », *Smithsonian National Museum of Natural History*, 18 février 2015, [on ligne], <http://humanorigins.si.edu/evidence/human-fossils/species/australopithecus-garhi>

their consequences that are converging to produce the desired effect.⁹” In summary, these objects have utility for those who have created them and assist in the accomplishment of a task. They would therefore be *supernatural*: it is not nature that created them.

Magic has fascinated humans for thousands of years, and having a supernatural side as technical objects invented by them, we can ask the question: What is the relationship between fantasy and technical objects?

We will try to answer this question by examining several aspects of magic in the world of design. To begin, we will look at their relationship throughout history, especially that of Western Europe. Beliefs are multiple, the Roman world until now, through to the Renaissance and the Enlightenment Ages. We will then analyse the object as a mediator between mystical forces and spirits. We will see how animism appears today, if other minds from other entities are connected, and what forces are used to manage these objects. Finally, we will compare several types of objects, through a Cartesian perspective then a paranormal one. These studies will allow us to find the links between magical imagination and the designer's thought process.

9 SIMONDON Gilbert, *Du mode d'existence des objets techniques* [1989], Aubier, 2001, p. 46, translated from French by the author: « la traduction en matière d'un ensemble de notions et de principes scientifiques séparés les uns des autres en profondeur, et rattachés seulement par leurs conséquences qui sont convergentes pour la production de l'effet recherché. »

1

A historical relationship to animated objects

We live in a world of magic, but we do not accept this. This magic world started very early in human history. Starting from the same country and then dispersing on Earth, beliefs in this mystical force therefore had a common origin in Africa¹⁰. They then diversified to no longer be recognisable. For this study, we will focus mainly on Europe, although some references to other cultures will be used, such as so-called primitive cultures.

10 « Human Family Tree », *Smithsonian National Museum of Natural History*, 18 février 2015, [on ligne], <http://humanorigins.si.edu/evidence/human-family-tree>

From Prehistory to the Middle Ages

Let us start our research a few million years BCE. 790,000 years ago, the hominids of the time discovering fire, wondered about life after death¹¹. They endure nature and all possible phenomena without the protections, nor scientific knowledge, that we know have today. They lived in another reality. All aspects of their lives have needed their own explanations and come from a given “understanding”. These have taken the form of intangible forces only partially controllable by humans, such as wind controlled by sails, but deadly during storms.

What little control they find become ritualized acts. Thinking that the soul of an animal remains in its offal, bones, skin, they use it to increase their strength. This marks the beginning of animism. Animism is defined as: “a system of thought that believes that nature is animated and that everything is governed by a spiritual entity or soul.¹²” The object, an artificial entity fashioned by man has no body to think independently is left with a conscience or a soul of its own.

As explained by the American philosopher Erik Davis in his book *Techgnosis: Myth, Magic, Mysticism in the Age of Information*:

11 « Tools & Food », *Smithsonian National Museum of Natural History*, 18 février 2015, [on ligne], <http://humanorigins.si.edu/human-characteristics/tools-food>,

12 « Animisme », *CNRTL*, [on ligne], <http://www.cnrtl.fr/lexicographie/animisme>, translated from French by the author: « Système de pensée qui considère que la nature est animée et que chaque chose y est gouvernée par une entité spirituelle ou âme. »

The interdependence of culture and technology means that the technologies of the pre-modern world, despite being the most logical of crafted objects, nonetheless had to share the cosmic stage with any number of gods, sorceries, and animist powers.¹³

Thus almost all objects created during that era have a dual purpose: to help survive in the wild as well as a way to control the intangible forces. These hominids are mostly interested in the use of forces they can see and recognise. They use the power of plants and animals around them. Thus we see the arrival of totems and other objects whose sole purpose is the link between the real world and the spirit world¹⁴. These totems and statuettes have been revered as a representations of a plant or animal¹⁵ in the hopes of appeasing an evil or angry power, or seek the help of a good spirit.

We can find this totem-ism in some primitive cultures still present to this day, such as Native American tribes (fig. 1), the aborigines of Australia or New Zealand. As with all humans in Prehistory, these tribes have a very close relationship with nature. In some, it is unthinkable to eat an animal that had been represented as a totem.¹⁶

Prehistoric men used also their own representations as magical objects. Historians have several theories about different prehistoric "Venus" appearing around 40,000 years BCE (fig. 2). These stone statues of naked women



Fig. 1



Fig. 2

¹³ DAVIS Erik, *Techgnosis: Myth, Magic, Mysticism in the Age of Information*, Serpent's Tail, 1998 p.10.

¹⁴ ALUN JONES Robert, *The Secret of the Totem: Religion and Society from McLennan to Freud*, Columbia University Press, 2013, p. 85

¹⁵ « Totem », CNRTL, [on ligne], <http://www.cnrtl.fr/etymologie/totem>

¹⁶ JAMES Diana, ROSE Deborah, WATSON Christine, *Indigenous kinship with the Natural World in New South Wales*, NSW National Parks and Wildlife Service, 2003, p.26

with distended features could have been simple artistic representations of the ideal woman or the female body during pregnancy. Another theory sees these objects as an amulet or a “small object that is worn on the body, and to whom is attributed the power to preserve from diseases, accidents, and various ailments.”¹⁷ If this were the case, one might assume that the statue was a pregnant woman, and could have protected the wearer of all the risks associated with childbirth¹⁸, an extremely dangerous and misunderstood act until only recently.

These so-called magical acts were part of a belief system that required transmission from generation to generation. Writing having appeared around 5000 years BCE in Mesopotamia¹⁹, these beliefs had to be transmitted orally. To remember and to facilitate their transmission, the prehistoric Human created myths and folklore. Myths are defined by the *Trésor de la Langue Française* as:

A story depicting imaginary facts unrecorded by history, handed down by tradition and featuring beings symbolically representing physical forces, philosophical, metaphysical or social generalities.²⁰

17 « Amulette », *CNRTL*, [on ligne], <http://www.cnrtl.fr/lexicographie/amulette>, translated from French by the author: « petit objet que l'on porte sur soi et auquel on attribue le pouvoir de préserver des maladies, des accidents, des maux les plus divers. »

18 HAVILAND William, MCBRIDE Bunny, PRINS Harald, WALRATH Dana, *Evolution and Prehistory: The Human Challenge*, Cengage Learning, 2013, p. 215

19 « L'aventure des écritures, Le dossier pédagogique », *BNF*, [pn ligne], <http://classes.bnf.fr/dossiecr/in-ecrit.html>

20 « Mythe », *Trésor de la Langue Française*, [en ligne],

As based on real facts, myths begin to explain phenomena other than those caused by nature. This is especially the case for Greek and Roman myths. Indeed, with many scientific discoveries, such as the horizon, geometry, and mass, many magical phenomena were explained. This era thus sees a mixture of rationality and research alongside legendary writing, as the author and researcher in fantasy André-François Ruard explains:

Used by the ancients to understand the world and question their place in it, they will slowly evolve from edifying to entertaining, while continuing to play on symbols recognised by all. The first grand narratives generally took a historical commemoration, transmitted orally, and were enriched over time.²¹

Homer's *The Odyssey* and *The Iliad* of Homer, written during the VIth century BCE, are oral based works composed of formulas, known by the ancient Greek, assembled into a narrative poetic and rhythmic²². It is likely that different authors have contributed to the writing of these epics, stories usually thought to be Homer's. Invention has an important role in Greek and Roman imagination. Indeed, among the Greeks and especially their theatre we see the invention of machines creating special effects for the theatre. These mechanical devices can be considered as the ancestors of the special effects that we know in films today.

21 RUAUD, op. cit., p.10, translated from French by the author: Utilisées par les Anciens pour comprendre le monde et s'interroger sur leur place en son sein, elles vont lentement évoluer de l'édifiant au divertissant, tout en continuant de jouer sur des symboles admis de tous. Les premiers grands récits portaient généralement d'une commémoration historique qui, transmise de manière orale, s'enrichissait au fil du temps.

22 ONG Walter J., *Orality and Literacy* [1982], Routledge, 2005, p. 23

These, as well as inventions from the Alexandrian engineer Heron, will be discussed in the last chapter.

During prehistory and antiquity, the distinction between fantasy and religion was almost non-existent. In the Middle Ages, few books were copied by hand by monks, the only scholars of the time, except for the *Bible*. In Europe during this era, we thus see the emergence of a controlled imaginary magic through a book as well as its “masters”. However, orality still remained important, as few knew how to read, folklore persisted. Thus, Christian believers of the time, and many other religions, found paramount importance in certain objects that were supposedly created by their god or touched by their prophet. According to the Arthurian legends, it would be at this time that the research of the Shroud and the Holy Grail would have started (fig. 3). We can see the beginning of fantastic works based around the legends of King Arthur of Brittany, followed closely by the *Song of Alexander the Great* in Italy and romances around Charlemagne, known as *The Song of Roland*, in France²³. These stories were mostly transmitted orally, but some have been transcribed in writing, forming the beginnings of the fantasy genre of literature.



Fig. 3

Like Arthur and the Knights of the Round Table in search of the Holy Grail, the knights of Christian Europe went on Crusades to spread their faith and protect certain relics or sacred objects. One can find in Jerusalem was the Holy Sepulchre, a collection of objects including Jesus' true cross. However, during parts of the Middle Ages the sacred city was in the hands of the Arabs and then Turks who did not tolerate the presence of

pilgrims and subsequently had them massacred. Thus, Christians went to war for sacred objects fashioned several hundred years before their births. The objects' importance to the crusaders faith and way of life confirmed this need²⁴. These knights had to go far from their land of birth and, along the way, discovered new cultures but also previously unknown flora and fauna. Their reports and maps, as well as the first European explorers exploring the world, often contain mythical monsters from the imagination (fig. 4). An example is the legend of St. George, England's patron saint, and his dragon (fig. 5), a story that was brought back from the Crusades in the XIIth century²⁵.



Fig. 4



Fig. 5

Science was not advanced enough in the Middle Ages to explain all the natural phenomenon, the people who lived during that era had at their disposal two ways to understand them. The first lay in magical folklore that varies from region to region and even from village to village in the same country. The second, equally magical, was religion, divine acts and miracles. The two lived side by side, however not in harmony as each was trying to remove the other to increase its control and number of believers. To better integrate into the societies of the Middle Ages, Christianity appropriated certain rituals associated with paganism and folklore at the time, such as baptism which took over rebirth rites²⁶. Religious faith is based on very few objects but has made them extremely powerful

24 RILEY-SMITH Jonathan, *The Crusades: A History*, Yale University Press, 2005, p.12-13

25 DALE Thomas E. A., *Relics, Prayer, and Politics in Medieval Venetia: Romanesque Painting in the Crypt of Aquileia Cathedral*, Princeton University Press, 1997, p. 70

26 CARPENTER Edward, *Pagan & Christian Creeds: Their Origin and Meaning*, The Floating Press, 2014, p. 103

for their believers. For any religion whose dogmas were written, books received a very strong spiritual significance. These books run the lives of those who read them, and are sometimes used as a divination objects, opening a page at random, a divination technique called bibliomancy²⁷. Despite the differences between the folklore of religion, they have something in common: animistic objects.

27 « Bibliomancy », *Trésor de la Langue Française*, [on ligne], <http://atilf.atilf.fr/dendien/scripts/tlfiv5/advanced.exe?8;s=417823620>;



Fig. 1 - British Columbia totem, red cedar wood, 1850, British National Museum



Fig. 2 - The Hôhle Fels Venus, dated -35 000 to -40 000 years, this tiny statue is considered to be one of the oldest venus.



Fig. 3 - King Arthur and his Knights of the Round Table, Monty Python and the Holy Grail, 1975, Python (Monty) Pictures

Fig. 4 - Atlantic Map detail, Domingo Sanches, 1618, BNF.
We can see a sea monster below the cardinal points.

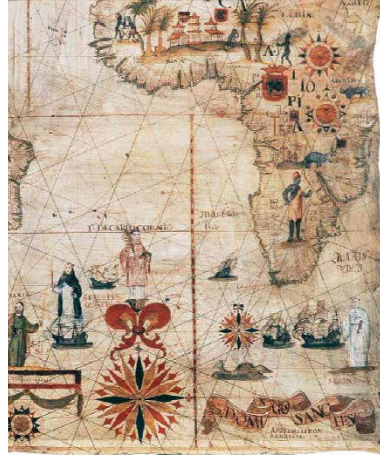


Fig. 5 - Saint George and the Dragon stained glass, 1800, St George's Hall, Liverpool



From the Renaissance to the Age of Enlightenment

Humans from prehistory to the Middle Ages, saw their lives dictated by intangible forces. They did not have the power to decide on their future, as religion and folklore took away that possibility. However, in the XVth century, this fact is questioned. Indeed, the Renaissance saw the beginning of Humanism: “the doctrine that takes as end the human person.²⁸” The searchers of that time asked questions about their conditions and their reasons for being. We discover the body through dissections. They read Greek and Roman texts again and explored their concepts. Thus, they rediscovered geometry.

Despite the presence of scientific logic used by researchers and their discoveries explaining a number of phenomena previously attributed to magic or divine action, mysticism retained its attraction. Paola Zambelli explains:

To be sure, there were connections between magic and the various sciences, some stronger than others. Medicine, more than other sciences, had always been affected by the dominant astrological theories.²⁹

According to the modern historian, questions that European scientists asked were based on mystical and

²⁸ REY Alain, « Humanisme », *Dictionnaire Historique de la Langue Française*, Le Robert, 2010, p. 4594, translated from French by the author: « la doctrine qui prend pour fin la personne humaine. »

²⁹ ZAMBELLI Paola, *White Magic, Black Magic in the European Renaissance*, Brill, 2007 p.19

magical phenomena. Astrology is transformed into astronomy. The magic of plants becomes rational.

At the same time, new forms of magic were emerging. Historian of philosophy, Cesare Vasoli studied the subject:

The Renaissance European company continued to maintain the primitive side of peasant and popular witchcraft and thus contributed to feed scholarly imagination of philosophers and theologians, well experienced in reading the classics of Neoplatonic and Hermetic magic.³⁰

Attracted to the creations of the Greeks, the Renaissance researchers discovered the god Hermes, best known as messenger of the gods and guardian of roads, intersections and travellers. This god is also found in Egypt under the name of Thoth until the two merge, during the occupation of the country by the Greeks, to create a single deity known as Hermes Trismegistus (*fig. 6*). Defined as “Three times great” this god mastered the three natural philosophies: mineral, animal and vegetable. He knew their manipulations and mixtures to create new substances. He is credited with the creation of alchemy, born during the Renaissance. This manipulation of materials brought a new mythical object, the philosopher’s stone, able to transmute common metals into noble ones, to heal the sick and even give eternal life. This stone was sought



Fig. 6

³⁰ VASOLI Cesare, « Le tradizioni magiche ed esoteriche nel Quattrocento », *Le filosofie del Rinascimento*, Bruno Mondadori, 2002, p. 136. Translated from Italian by Aurélien Cassirame: «La società dell’Europa rinascimentale continuava a mantenere l’aspetto rozzo e inconditoto della stregoneria contadina e popolare, ma anche nutrire la dotta immaginazione di filosofi e teologi educati alla lettura dei classici della magia neoplatonica ed ermetica.»

by many scientists of the Renaissance making it, according to the chemical engineer and journalist Jacques Bergier, “the only para-religious practice that truly enriched our knowledge of reality.³¹” During their search for objects and magical types of material, the researchers also found real and useful substances such as sulphuric acid, hydrochloric acid and phosphorus.

On one hand, we find during the Renaissance a natural and divine white magic that was never condemned by Europe’s main religion, Christianity. It was used by the Church to differentiate miracles and divine actions from black magic and necromancy, a “magical arcane art³²” and prohibited by the teachers of the Christian faith. The witch hunt began in many countries against those undergoing research into the occult. Therefore, we can say that the Renaissance cultures were hungry for knowledge and tried to control the magic in which they still believed.

Despite this strong belief in the mystery that exists during that time, René Descartes published his *Discourse on Method* (fig. 7), which laid the foundation for a research methodology to obtain what he would call “logical and demonstrable” results. This edition would not have been as popular without the help of a new machine that was released in Europe in 1450: Gutenberg offers Europe’s first printing press, making books and pamphlets more accessible to the population. Descartes used this invention, available in France, to publish his works in an,



Fig. 7

31 BURCKHARDT Titus, « L'alchimie, science et sagesse », *Encyclopédie Planète*, Retz, 1964, p. 219, translated from French by the author: « la seule pratique para-religieuse ayant enrichi véritablement notre connaissance du réel. »

32 ZAMBELLI, op. cit., p. 245

at the time, vulgar language: French. Non-biblical texts thus became more accessible than the contents of the *Bible* for a while, the *Bible* being translated 26 years later³³. Other books were emerging:

The medieval author seems to write for a public to whom magic, like knight-errantry, is part of the furniture of romance: the Elizabethan, for a public who feel that it might be going on in the next street. [...] Neglect of this point has produced strange readings of *The Tempest*, which is in reality [...] Shakespeare's play on *magia* as *Macbeth* is his play on *goeteia*.³⁴

Magic remains an integral part of everyday life for Renaissance Europe, whether in science or in everyday life. Their beliefs in these supernatural forces are strong and rooted in their cultures. However, unlike previous generations, they do not want to suffer, but rather to control and therefore have power to take decisions about their own lives.

Later, Descartes' methodology took over mystical belief to create a mythical Cartesian culture. This period of European history is called Enlightenment: a rationality based on an "absolute trust in man and in the indefinite progress of science and the human spirit."³⁵ Thus, according to the philosophers of the Enlightenment, humans would be the complete master of their destiny. During this period of history, a resistance can

33 « Nouveau Testament », *Les Bibliothèques Virtuelles Humanistes*, [on ligne], <http://www.bvh.univ-tours.fr/Consult/index.asp?numfiche=703>

34 LEWIS Clive S., *English Literature in the Sixteenth Century: Excluding Drama* [1954], Oxford Paperbacks/Oxford University Press, 1973, p.8.

35 PIERRARD Pierre, *L'Église bouleversée— de 1789 à 1945*, Editions de l'Atelier, 1992, p. 10, translated from French by the author: « confiance absolue en l'Homme et dans les progrès indéfinis de la science et de l'esprit humain. »

be found against three traditional sections of French society: the monarchy, the pyramidal state hierarchy and the Church. Indeed, the Christian religion had become an oppressive and corrupt regime rather than organized belief. By rejecting Christianity, we might think that the belief in magic and folklore would suffer the same fate.

Religion, folklore and superstition being taunted by writers, political and philosophical, humans was left alone in a world where the "self" has been simplified in part by Descartes' thoughts, but remains also very unequal. Michel Maffesoli quotes Max Weber who speaks of "'rationalisation of the existence' It is this that leads to the famous 'disenchantment of the world'.³⁶" Unlike their ancestors, the Europeans of the time already recognized science in many natural facts. Answers about their reason for being, therefore, of Descartes' "self", did not bring them satisfaction. Disenchantment was such that in France we saw the Revolution in 1789, marking the end of the Age of Enlightenment.

It is not surprising to see, during this time, the peak of a wave of magical thinking qualified by historians as Illuminism. Like their rational contemporaries, they seek the light from within, usually their god³⁷. The Language and Literature professor Elizabeth Boucé explains: "Illuminism responds to a supernatural and

36 MAFFESOLI Michel, *Imaginaire et postmodernité, Synergie de l'archaïsme et du développement technologique*, « Modélisations des imaginaires », Manucius, 2013, p. 11, translated from French by the author: « 'rationalisation de l'existence' C'est celle-ci qui aboutit au fameux 'désenchantement du monde.' »

37 « Illuminisme », CNRTL, [en ligne], <http://www.cnrtl.fr/lexicographie/illuminisme>, (consulté le 16/12/2014)

surreal demand as reality seemed insufficient.³⁸ Thus, while retaining a degree of Humanism acquired during the Renaissance, this magical thinking was kept to bring back a dimension to their lives that had been robbed by the Age of Enlightenment.

Magical thought was not completely removed from culture in during the Age of Enlightenment. We find little diversity in “fantasy” literature, all the while “fairy tales” were prolific. Boucé continues: “Thus, for example, on the eve of the Revolution, Charles Joseph Mayer published his *Cabinet of Fairies* in forty-one volumes, an extensive compilation of fairy tales (fig. 8).³⁹” This collection includes tales of Charles Perrault, Madame D’Aulnoy and Jean Jacques Rousseau, and will then be completed by the tales of the Grimm Brothers. The *Cabinet* includes, amongst others, the stories of the *Red Riding Hood*, *The Tales of the One Thousand and One Arabian Nights* as well as *Beauty and the Beast*.

The vast majority of these tales are considered polite, very conformist and hold a high moral potential. They are mostly based on folklore stories, transmitted orally and written down amongst others by Charles Perrault in his *Tales of Mother Goose* in 1697 (fig. 9). Today, Europeans know most of his stories, having had them read at the bedside of children by parents, or seen in films or animations. We can



Fig. 8



Fig. 9

38 BOUCÉ Elizabeth, *Spectres des Lumières : du frissonnement au frisson: Mutations gothiques du XVIIIe au XXIe siècle*, Publibook, 2012, p. 23, translated from French by the author: « L’illuminisme répond à une demande de surnaturel et d’irréel car la réalité paraît comme insuffisante. »

39 Ibid, p.23-24, translated from French by the author: « Ainsi, par exemple, c’est à la veille de la Révolution que Charles-Joseph de Mayer publie son *Cabinet des Fées* en quarante et un volumes, vaste compilation de contes de fées. »

therefore conclude that the Age of Enlightenment, despite its apparent rejection of religion and mystical beliefs, has not quite managed to erase the imaginary worlds from European culture.

The author and folklorist Terri Windling explains this tenacity:

Like wizards roaming magical forests, tales themselves are “form-changing”: elusive, mysterious, malleable, able to take very different aspects. This is where the heart of their power lies, the strength of their longevity.⁴⁰

Since these tales can change shape, they can adapt to most geographic and historical cultures. As long as the moral values, mythologies, that these tales describe are able to “talk” to the greatest number of people they become universal, a concept studied by Roland Barthes in his book *Mythologies*⁴¹.

40 WINDLING Terri, « La Quête du Héros », *Yellow Submarine*, n° 129, (Les sentiers de la Faërie), Bifrost/Etoiles Vives, 1999, p. 47, translated from French by the author: « Comme les sorciers qui rôdent dans les forêts magiques, les contes eux-mêmes sont des ‘changeformes’ : fuyants, mystérieux, malléables, capables de revêtir des aspects très variés. C’est là que réside le cœur de leur puissance, la force de leur longévité. »

41 BARTHES Roland, *Mythologies* [1957], Points Essais, 2014



Fig. 6 - Hermes Trismegistus, Renaissance engraving

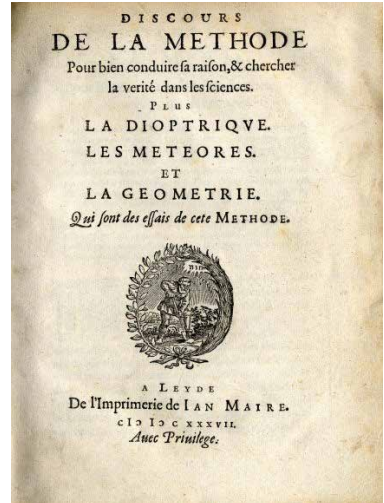


Fig. 7 - First page of the first edition of *Discours de la Méthode* by René Descartes, 1637, published by Ian Maire



Fig. 8 - Blue Beard, *Cabinet des Fées* by Charles Perrault, 1697, Claude Barbin, BNF,



Fig. 9 - Puss in Boots, from a handwritten and illustrated edition of *Contes de ma mère l'Oye* by Charles Perrault.

From the Industrial Revolution to our own technological beliefs

Throughout the XVIIIth century rejection of the esoteric has taken a prominent place in Western thought, despite a still present belief in mystical forces. However, for a while, humans turned towards themselves throughout the Renaissance, discovering Humanism, and the Age of Enlightenment's Rationalism. The late XVIIIth and early XVIIIth centuries mark a change of direction in these searches. The Industrial Revolution began with many inventions that mark the beginning of the modernisation of Europe.

The Industrial Revolution, saw the creation of a new "natural force" - this time controllable. Thus were born the locomotives around 1830, animated objects used to transport goods or people (*fig. 10*). Upon her arrival on her tracks, this machine was the subject of many stories.⁴² She began to frighten people. These giants were creating a lot of smoke, various loud noises, spitting ash and were usually painted in dark colours. She could reach speeds previously unequalled by humans and travel vast distances while carrying tons of goods and passengers. This fear was translated into the culture of the time, including through poetry:



Fig. 10

42 LE BERRE Aline, *De Prométhée à la machine à vapeur: cosmogonies et mythes fondateurs à travers le temps et l'espace*, Presses Univ. Limoges, 2004, p. 218

Admiron le colosse au torride gosier
 Abreuvé d'eau bouillante et nourri de brasier
 Cheval de fer que l'homme dompte⁴³

This piece of the poem "Le chemin de fer⁴⁴" by Auguste Villiers de l'Isle-Adam, rewritten in 1893 in *Le Magazine Littéraire*⁴⁵, shows a machine transformed into fiery beast. It is an animal that humans must control in order to gain its benefits:

Fierce-throated beauty!
 Roll through my chant with all thy lawless music, thy
 swinging lamps at night,
 Thy madly-whistled laughter, echoing, rumbling like an
 earthquake, rousing all⁴⁶

According to the poet Walt Whitman in his poem "To a Locomotive in Winter", the locomotive is not only a monster but also feminine. Like boats, these several tonne monsters are considered as female. When speaking of a locomotive in English, it is given the pronoun "she" normally reserved for women, rather than 'it' used for objects. An example of this personification can be found in Emile Zola's *La Bête Humaine*, published in 1890. The main character can be considered as being Jacques Lantier's locomotive named Lison. During the course of the book, this machine creates

43 VILLIERS DE L'ISLE-ADAM, *Poésies*, Oeuvres Complètes II, Alain Raitt et Pierre-Georges Castex, 1986, 'Chemins de fer', p. 848, «Admire the colossus with its torrid throat

Steeped in boiling water and fed inferno
 Iron Horse that man subdues»

44 The Railroad

45 MIRBEAU Octave, *Correspondance Générale*, L'Âge d'Homme, 2005, Note de bas de page, p.651

46 WHITMAN Walt, *Green Leaves* [1861], Penguin Classics, 1961, 'To a Locomotive in Winter'

jealousy within women, becoming the representation of a mistress to her driver. This feminine soul would have been given during its construction:

There was the soul, the mystery of manufacturing, it something that chance hammering added to the metal, as the worker's knowledge gives to the pieces: the personality of the machine, life.⁴⁷

Despite its strong connection to naturalism, Zola often includes a notion of magic in his fiction. A concept of the city such as buildings or new inventions find themselves anthropomorphised in order to then consume his characters. This soul contained in the elements of their environment is similar to the spirits that fascinate the Europeans of the time.

Indeed, they had a morbid fascination with ghosts and spirits. The stories around them can be found abound. Several theories have been advanced to explain this fascination⁴⁸. The first comes from the discovery of photography which we will study in the next chapter. The second theory is based around lighting. The Victorians went from using the candles to gas lamps. The light it produced being much more stable than its predecessor, the gas lamp still asked a lot more maintenance. A poorly maintained lamp created carbon monoxide leaks. A person inhaling the toxic gas would get hallucinations, the

⁴⁷ ZOLA Emile, *La Bête Humaine*, Les Rougon-Macquart [1890], Bibliothèque de la Pléiade, 1966, p. 1127-1128, translated from French by the author: «Il y avait l'âme, le mystère de la fabrication, ce quelque chose que le hasard du martelage ajoute au métal, que le tour de main de l'ouvrier donne aux pièces: la personnalité de la machine, la vie.»

⁴⁸ ROBBINS Ruth, « The Victorian Ghost », *LeedsMetUni*, 29 octobre 2013, [en ligne], <https://www.youtube.com/watch?v=Bg94bRJLLj4>

appearance of deceased family members, paranormal or even magical phenomena⁴⁹.

During the Industrial Revolution, another invention appeared that changed, among other things, how they were lit: electricity, the creation of a new artificial force behind normally inert objects that can also illuminate dark corners (*fig. 11*). This invention, misunderstood by most of its users, remains one of the most important in History. We will explore this mystical force in the second chapter of this book. What we can say now is that electricity is a power that we in developed countries cannot do without.



Fig. 11

Today, developed cultures emphasize and promote a Cartesian world-view. Most of the known natural phenomena now have a scientific explanation, and those freshly discovered are quickly explained. The few situations that we cannot explain are called to be resolved when technology and science advances. At the same time, we find that the facts we held as true are no longer. As explained Jean-François Lyotard in *The Postmodern Condition*, every scientific or historical discovery is made by a human, with his emotions, his political position, financial situation, which will all affect his or her position and therefore the results of his research⁵⁰. These are more limited by the language used by the field, researchers will have tendency not to look in the area, and therefore will not find all the truths. He calls this the “language games⁵¹”. Thus, according to Lyotard, the truths on

49 Ibid.

50 WARD Glenn, *Postmodernism*, Teach Yourself, 2003, p. 170

51 LYOTARD Jean-François, *The Postmodern Condition: A Report on Knowledge* [1979], Manchester University Press, 1984, translated from French by Geoff Bennington and Brian Massumi, p. 10

which is placed postmodern society are actually interpretations, the great myths have ended.

At the same time, magic dominates our popular culture. Most movies, books and video games are based on fantasy. Indeed, the researcher and specialist in modern fantasy literature Thomas Shippey says: "The dominant literary fashion of the twentieth century has been the fantastic."⁵² With the advancement in special effects technology, or magical representation, it is not surprising that the world's top 10 grossing films in 2014 are all fantasy / science fiction movies⁵³ (fig. 12). Video games are mostly created in the same vein.



Fig. 12

We have thus an attraction to this force, a residue of our millions of years of history. According to Sigmund Freud:

He finds that the scant satisfaction that he can force out of reality is not enough. "There is no getting along without auxiliary-constructions", Th. Fontaine once said. The creation of the psychic realm of fancy has its complete counterpart in the establishment of "preserves" and "conservation projects" in those places where the demands of husbandry, traffic and industry threaten quickly to change the original face of the earth into something unrecognisable. The national reserves maintain this old condition of things, which otherwise has everywhere been regretfully sacrificed to necessity. Everything may grow and spread there as it will, even that which is useless and harmful. The psychic

⁵² SHIPPEY Tom, *J. R. R. Tolkien: Author of the Century*, Harper Collins, 2000, p. vii

⁵³ « Yearly Box Office: 2014 Worldwide grosses », *Box Office Mojo*, [en ligne], <http://www.boxofficemojo.com/yearly/chart/?view2=worldwide&yr=2014&p=.htm>, (consulté le 12/01/2014)

realm of phantasy is such a reservation withdrawn from the principles of reality.⁵⁴

We have, for most of us, the need to unleash our imagination and our dreams. The fantasy genre in all its forms creates what Freud called daydreams. These are important to humans because they allow them to imagine “phantasies” and then try to make them real.

Ethan Gilsdorf, journalist and geek in his research book *Fantasy Freaks and Gaming Geeks* gives us ten possible reasons to escape to an imaginary world:

1. Blatant escapism (from problems: emotional, marital, societal-terrorism, economic).
2. Feelings of powerlessness (related to 1).
3. Desire to not feel ordinary, to feel ‘heroic’: to feel part of larger narrative (immortality?).
4. Too much leisure time (compared to peasant/farmer life - Monty Python ‘autonomous collective’?)
5. Urge (genetic?) to play-act primal human struggles - betrayal, revenge, and overcoming great odds.
6. Safe way to express needs, fears and wishes.
7. Fantasy = good vs evil. Reality = too grey. Need simplistic world-view.
8. Connect with nature/magic - lost Eden? Pre-industrial time?
9. Reality overwhelming. News saturation.
10. Regress to childhood / relive childhood.⁵⁵

⁵⁴ FREUD Sigmund, *A General Introduction to Psychoanalysis* [1916], Gutenberg eBook, 2011, Translated from German by G. Stanley Hall..

⁵⁵ GILSDORF Ethan, *Fantasy Freaks and Gaming Geeks: An Epic Quest for Reality Among Role Players, Online Gamers, and Other Dwellers of Imaginary Realms*, Rowman & Littlefield, 2009, p. 41.

This list is non exhaustive, it does not include mere aesthetic pleasure or an inclination to stories, but all these reasons seem to question the place of the human according to the world surrounding him or her. Can he escape? What is its place, and is it central? Like their ancestors, humans today have the option to explore how magic can answer their questions.

Like Freud:

[Tolkien et Lovecraft⁵⁶] both argued that fantasy was a necessary complement to reality, gratifying the desire for “imagined wonders” that the Primary World could not satisfy.⁵⁷

However, neither Freud, Tolkien nor Lovecraft have experienced today’s world of digital technology. This world based on the manipulation of numbers to create visible effects operates on an invisible plane to the human eye. It allows the creation of an unimaginable number of other worlds. Today, we have a tendency to live in both worlds, the real and the digital. Unlike previous generations, we give a totally artificial and scientific dimension to Secondary⁵⁸ worlds in which we spend a lot of time every day.

In his research book *As If: Modern Enchantment and the Literary Prehistory of Virtual Reality*, the history professor and European Culture specialist Michael

56 John Ronald Reuel Tolkien was a British fantasy writer of the early twentieth century, known for his legendary trilogy *The Lord of the Rings*. Howard Phillips Lovecraft, his contemporary, is an American horror fiction author known for his work *The Call of Cthulhu*. Both have an international reputation in the world of fiction.

57 SALER Michael, *As If: Modern Enchantment and the Literary Prehistory of Virtual Reality*, Oxford University Press, 2012, p. 182.

58 Op cit, p. 31

Saler studied the ambivalent need to release ourselves in imaginary worlds while keeping a seemingly Cartesian logic. He explains:

This self-conscious strategy of embracing illusions while acknowledging their artificial status, of turning to the “as if”, has become an integral to modern enchantment...⁵⁹

It seems that scientific logic and technology has taken over European imagination, where animism is considered as primitive or archaic by many anthropologists. However, according to the sociologist Bruno Latour we have never been modern, that is to say we no longer live in a world of pure science⁶⁰. In addition, the British philosopher Gilbert Ryle destroyed the Cartesian myth by replacing it with the ghost in the machine dogma:

With the doubtful exceptions of the mentally-incompetent and infants-in-arms, every human being has both a body and a mind. ... The body and the mind are ordinarily harnessed together, but after the death of the body the mind may continue to exist and function.⁶¹

The body and soul are therefore not divided as thought by Descartes. The first cannot live without the second during life, while the second can continue on even after the death of the first. Moreover, Lyotard asserts in *The Postmodern Condition* that we have lost faith in science, we have now a tendency to turn to other subjects to obtain other

⁵⁹ Op cit, p. 13.

⁶⁰ LATOUR Bruno, *Nous n'avons jamais été modernes*, La Découverte, 1997

⁶¹ RYLE Gilbert, *The Concept of Mind* [1949], The University of Chicago Press, 2002, p 11

forms of understanding⁶². We are still enchanted despite being aware of the unreal state of enchantment.

If we continue in this line of logic, the technical objects we use should therefore allow a Cartesian explanation of their creation and uses. Most inventions found during the Industrial Revolution are ancestors of a large number of objects that we use daily today. As explained earlier, most of these objects have links to the paranormal. Indeed, as the science fiction writer Arthur C. Clarke says in *Hazards of Prophecy: The Failure of Imagination*: “Any sufficiently advanced technology is indistinguishable from magic.”⁶³ When technology advances, generally there are very few people who fully understand the way it works, including electricity, despite its centuries of existence. However we use this force every day, only knowing its results.

Since, we have discovered, amongst others, nuclear energy and have invented ways of transmitting data including WiFi, Bluetooth and GPS. These technologies have evolved and remain largely misunderstood by their users. Indeed, the majority of objects that use such forces contain components, or other objects, which ensure their proper operation, and can therefore be called devices⁶⁴. The contemporary philosopher Vilém Flusser gives a definition to the term device as “a complex toy, so complex that those who

62 WARD, op. cit., p. 173

63 CLARKE Arthur C., ‘The Hazard of Prophecy: the failure of imagination’, *Futurists*, Random House, 1972

64 « Appareil », *Trésor de la Langue Française*, [en ligne], <http://atilf.atilf.fr/dendien/scripts/tlfiv5/visusel.exe?11;s=2439922875;r=1;nat=;sol=0;>, (consulté le 16/12/2014)

play with it cannot fathom it.⁶⁵” This definition can be easily applied to the digital objects that we use today.

Each of these objects’ components are created by different companies or different departments of the same company. Indeed, each of these components require a rather high level of technological and scientific knowledge (*fig. 13*), on that is out of reach of those who have not undergone extensive studies on the subject. Thus, each component is created by a specialist in his field, who does not necessarily as specialised in other fields surrounding the other components. We can conclude that the manufacturers themselves do not know themselves all the mechanics inside the object they helped invented.



Fig. 13

These objects thus create a link between a mystical force and a visible reaction to the human eye. Our ancestors explained this lack of understanding by consciously giving the object they used a soul. Today we seem to subconsciously do so. For example, we tend to blame the computer for a bug, not the programmer who is responsible for the glitch in the code. Therefore, we all seem to practice unconscious animism.

65 FLUSSER Vilém, *Pour une philosophie de la photographie*, traduit de l’allemand par J. Mouchard, Circé, 1996, p.40, translated from French by the author: «est un jouet complexe, tellement complexe que ceux qui jouent avec lui ne peuvent le percer à jour.»



Fig. 10 - Un train dans la neige, Claude Monet, 1875, huile sur toile, Musée Marmottan

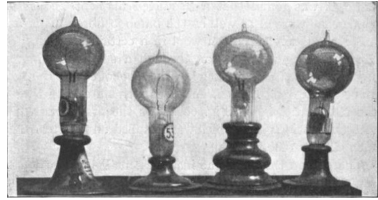


Fig. 11 - premières ampoules électriques à filament incandescente inventés par Thomas Alva Edison en 1879



Fig. 12 - Transformers : L'Age de l'Extinction, Michael Bey, 2014, Paramount Pictures, à fait le plus de ventes l'année de sa sortie.



Fig. 13 - Décomposition du Samsung S2, sortie en 2011 par Samsung.

Mediating objects between mystical forces and spirits

We have seen the changes to magical belief in our history and can notice a constant in these transformations: animism prevails. Today, it can manifest itself in many ways: the object itself has a soul, or may become a mediator between the user and other spirits. Moreover, in our technological times, most of the objects we use every day are driven by forces that we could call "mystical".

An animistic relationship to objects

As it was defined in the first chapter of this analysis, an object is a translation of a necessity to matter. According to Marshall McLuhan, media (his definition of an object) is “the extension of man”. Thus, they were created to complete a task that cannot be accomplished by the human body. An object adds to a body actions that he cannot do alone, and could therefore be seen as inherent.

According to Simondon, this can be approached on two different levels: either unknowingly in early childhood when a person learns to use an object, accepts his capacities without questioning them, or consciously when the use of the object is taught in adulthood. In this case, the person will question how he or she uses the object, and may even change it to suit his or her body and way of thinking⁶⁶. This second level is seen in the individual and in the human species. Allow me to give you an example through a historical summary of the morphological changes of an object (*fig. 14*): a stone was sharpened to cut through a hide that human hands could not tear, then a branch was formed into a pole and added to the sharpened stone to create a spear to kill prey and predators from a safe distance. Iron was discovered which allowed the spear to be hardened. The blade was extended and a grip added, the sword was created⁶⁷.

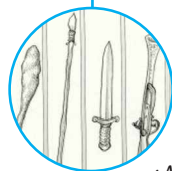


Fig. 14

⁶⁶ SIMONDON, *op. cit.*, p.85

⁶⁷ LEROI-GOURHAN André, *Milieu et technique*, Albin Michel, 1998, p.26

Throughout this process, humans who designed this object have also kept in mind its purpose, hoping that it will never fail them. They established a very close relationship with the tools they used and created, to the point that they gave them souls. The fantasy writer Sir Terry Pratchett and folklorist Jacqueline Simpson joined forces to write *The Folklore of Discworld* in which they give an example of such a relationship:

One of us recalls a metalworker shop staffed by very old men. When one of them died, his personal tools were left on the bench where he'd put them, untouched, and were gradually buried under workshop debris. It does not need a fevered imagination to see that in the days when tools were an expensive lifetime investment, shaped over the years to the owner's hand, there would be a certain unfocused distaste for handling them after a workmate's death.⁶⁸

German scientist Georg Ernst Stahl named this effect animism, or "a religious belief with active souls outside of the living being."⁶⁹ For a human being, a soul is synonymous to having a personality and therefore a name. A very good example of this is the sword. The mastery of the creation of a blade provides the bearer a better chance of survival. A blade created by a master indicates the wealth of its owner. In his *Encyclopedia of the Sword*, Nick Evangelista says "One of man's oldest, most valued tools, for the Viking, the sword was his named companion, for the samurai,

68 PRATCHETT Terry et SIMPSON Jacqueline, *The Folklore of Discworld* [2008], Corgi Books, 2014, p. 72

69 REY, op. cit., p. 600, 'Animisme', translated from French by the author: «la croyance religieuse aux âmes actifs hors de l'Être vivant.»

his very soul.⁷⁰” It had such an importance in many cultures around the world that the blade was given a name and then a personality, the most famous of them in Europe being Excalibur. This fictional sword also has magical powers that are activated only by its designated owner, King Arthur. Despite the many versions of the story about the legendary king, all agree on the existence of the of this sword.

Naming and giving a soul to an object, as discussed in the first chapter, existed throughout the course of History. Even today, we have a tendency to see our objects as having a soul of their own. Anyone who has owned a computer or tablet has probably, at some point during its use, insulted the machine when it behaved unexpectedly (*fig. 15*).



Fig. 15

Many anthropomorphic terms are used to describe digital objects, especially when they do not react the way we expect them to. For example, a computer that reacts to a problem in its programming because of malware is said to have a virus, “an organic substance (pus, saliva, etc.) capable of transmitting disease.⁷¹” A phone with a depleted battery is generally said to be “death”, a term generally used for something that was previously alive⁷².

70 EVANGELISTA Nick, *The Encyclopedia of the Sword*, Greenwood Publishing Group, 1995, p. xxiii

71 « Virus », *Trésor de la Langue Française*, [en ligne], [http://atilf.atilf.fr/dendien/scripts/tlfiv5/visusel.exe?24;s=317551755;r=2;nat=;sol=2;](http://atilf.atilf.fr/dendien/scripts/tlfiv5/visusel.exe?24;s=317551755;r=2;nat=;sol=2;,) (consulté le 02/01/2015), translated from French by the author: « substance organique (pus, saliva, etc.) susceptible de transmettre une maladie.»

72 « Technologie et magie », *Place de la Toile*, France Culture, radio documentary, 08 June 2013, 06:56 pm, with Vincenzo Susca, Xavier de la Porte and Thibault Henneton

We can see today that animistic thinking is gaining in importance for some anthropology specialists. According to some of its definitions, modernism is characterized by its dualism. It uses Cartesian thought to separate the body from the soul, the human from the environment, culture from nature, and finally, the subject from the object⁷³. Therefore, animism cannot be accepted as a process of thought as it merges everything that these philosophical thinkers have separated. However, in today's society, and as explained above, we have a propensity to create human-to-human relations with non-human objects and entities such as pets, stuffed animals, or even our digital technologies. We have thus transformed them into subjects. Animals and digital objects, in particular, communicate with us (*fig. 16*), they respond to our actions by giving us information or changing their behaviour, rendering them animated. As explained above, we seem to have accepted other forms of understanding⁷⁴, including animism.

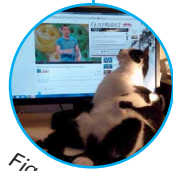


Fig. 16

Another explanation for our animistic thinking in our digital society was given by Vincenzo Susca, a researcher at the Centre d'Études sur l'Actuel et le Quotidien, which he calls the "technomagic". He gives the example of someone who throws a phone across a room when the person on the other end of the line has angered them. We thus have a tendency to place the blame first on the object, then later on the human⁷⁵. Due to, or thanks to, science and rationalism, we no longer need explanations for

73 VAN HULLE Dirk, 'Modernism, Mind, and Manuscripts', In : RABATÉ Jean-Michel, *A Handbook of Modernism Studies*, Wiley-Blackwell, 2013, p. 227

74 WARD, op. cit., p. 173

75 *Place de la Toile*, op. cit., 2013

most of the phenomena around us. Despite this, we seem to turn to experience and emotion to explain events.⁷⁶

According Susca, when a digital object does not react in the expected way, we see this as a betrayal. This is again evidence of a projection of our emotions into objects made by humans, it also shows how these objects have become profoundly intimate. Susca explains this intimacy by defining the difference between rational thought and magical thinking. Rational thinking is based on logic and seems to be the creator of technology, namely: logic technique. However, as we have seen, we do not seem to have a logical interaction with our digital objects. Susca defines these as “technomagic” as their users no longer use the brain or rationalization as the centre of the thought process⁷⁷, the basis of magical thinking.

An example given by the researcher is the use of touch screens in most digital technologies. Indeed, a non-tactile-screen button will change form once pressed, causing a chain reaction. Touching a panel with a finger without changing its shape, but still causing a reaction in the subject, calls to a sensation instead of rationalism. Despite this illogical reaction, we have readily accepted touch-screen technology. Today, most new inventions have a touch screen instead of buttons. At the launch of the first iPhone in 2007, Apple had chosen the slogan “Touching is believing⁷⁸” (fig. 17).



Fig. 17

76 Ibid

77 Ibid.

78 BOHRER Clemens, « Les Techniques de l'adjuration », traduit de l'allemand par David Dilmaghani, *Les cahiers européens de l'imaginaire*, n° 3, Technomagie [2011], CNRS, 2013, p. 113

Thus, according to Susca, we went from the Cartesian rationalization of the Enlightenment Ages to what we might call sensorialism. Sensations being a bodily subjective reaction, it explains how objects with reactions to our senses, such as touch screens, have become intimate. Continuing from McLuhan's thoughts that media is the extension of humans, this intimacy has blurred the boundaries between the body and the technical object. For example, the connected health objects allow a visible interface to bodily functions normally invisible to the user, or an other person without at least some form of physical contact. Some of our items are following us everywhere, in places where technology has normally no place: an mp3 player on the bedside table used as an alarm clock, a laptop on the knees in bed during a night work session, a smartphone while using the toilet for fun during those lonesome moments.

Injecting animism into an object is giving it a magical feature. As defined above, magic has a strong relationship to rituals, that is a number of predefined actions performed at specific times in order to get a required result. Normally kept to religious ceremonies, rituals are prevalent in our every day lives, even for agnostics and atheists. In a digital morning we check our phones for messages, turn on the TV for world news, validate our travel card at a terminal to enter to get to our train's platform (*fig. 18*). We might call this habit rather than ritual.

Whereas, a habit is a self-imposed action from which the person can turn away consciously, a ritual is usually imposed by an entity other than the person doing the action. However, technical and digital objects have all been designed by designers who have thought about



Fig. 18

ergonomics and the actions that the user will have to do, as well as how they will be used, by imposing measures and thus create rituals rather than habits. As the sociologist Stéphane Hugon says “Technical act, physical act, magical-religious act all coincide.⁷⁹”

In addition, humans have an instinctive tendency, like many animals, of finding patterns in their environment. According to the journalist and founder of the *Skeptic Magazine*, Michael Schermer, the search for patterns have helped animals decide whether a situation is safe or dangerous, and thus help the species survive⁸⁰. However, some phenomena occur at random. During his experience with a pigeon in a box, which receives food at random times, the scientist Burrhus Skinner discovered that his test subject, for lack of a pattern, created a ritual that it repeated up until it received food⁸¹ (fig. 19).



Fig. 19

This creation of rituals is something that humans also undergo, for example with the computer. Indeed, when a computer crashes, a human (who is not a computer technician), will usually try two rituals in the hopes that the machine will return to what it considers to be its normal state. He or she will first try the *ctrl + alt + del* rite by pressing the *Control*, *Alternative*, and then *Delete* keys to then end a process, forcing the program to close. If things get really bad,

79 HUGON Stéphane, « Soudain : la technique », *Les cahiers européens de l'imaginaire*, n° 3, Technomagie [2011], CNRS, 2013, p. 64, translated from French by the author: «Acte technique, acte physique, acte magico-religieux sont confondus.»

80 SCHERMER Michael, « The pattern behind self-deception », *TED*, février 2010, [en ligne], http://www.ted.com/talks/michael_shermer_the_pattern_behind_self_deception

81 SKINNER Burrhus, « Superstition in the pigeon » [1947], *Classics in the History of Psychology*, [en ligne], <http://psychclassics.yorku.ca/Skinner/Pigeon/>

and the computer does not respond, the ceremony to turn off and on the machine starts (*fig. 20*), usually accompanied by grunts and even anger from the user.

Although the programming bug still exists and therefore can cause the problem once more, turning off and on a computer is done in the hopes that the machine works as it usually does when the start button is used. According to Nicolas Nova, many more rituals have been created surrounding digital objects⁸², some of which will be discussed further in the next chapter.

Thus, we can see that, despite our hyper-rationalism supposedly remaining from the Enlightenment Ages, we continue to infuse animism into our new inventions. In addition, not only are digital objects less and less understood by users, they are also increasingly autonomous with their own souls. One could say that the more we continue towards full automation, the more our technology becomes more magical.



Fig. 20

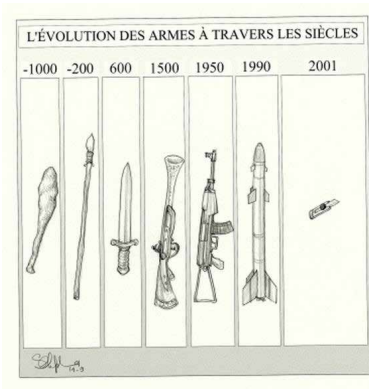


Fig. 14 - Weapon evolution, McCord Museum.



Fig. 15 - Voice activation on a computer does not always work. IT Crowd, season 1, episode 1, 2006, Channel 4.

Fig. 16 - Can a cat have human reactions?

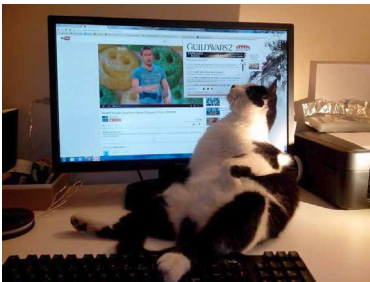


Fig. 17 - iPhone 6 advert, 2014, Apple.





Fig. 18 - Our digital objects follow us everywhere.

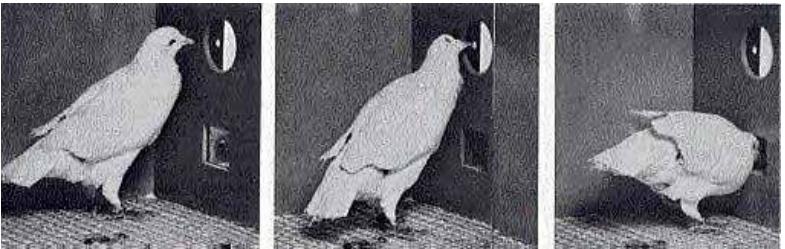


Fig. 19 - Skinner's pigeon in its box, waiting for food.



Hello, IT, have you tried turning it off and on again?

Fig. 20 - The 'Turn it off and on again' ceremony, *The IT Crowd*, 2006, Channel 4

A connection to other spirits, dead or alive

When we add a spirit to our objects, we also have a tendency to use our inventions to communicate with other souls, dead or alive.

While the phone is one of the best examples of an object with a soul, especially the smartphone, it is also the best example of communication with a soul. Indeed, as Erik Davis says:

In a sense, the telephone is the ultimate animist technology. We associate sentient life with what communicates, and here was an inert thing full of voices.⁸³

If we follow a rational way of thinking we could also agree with the following equation: what communicates is sentient, the phone communicates, then the phone is sentient. When someone uses a telephone, he or she will hear their correspondent's voice in the small box, giving the impression that the object has trapped a part of his or her soul. This demonstrates an animistic thinking. However, the phone can "trap" a multitude of souls in its box.

The phone has always had a connection with spiritualism. Indeed, its alleged inventors Graham Bell and Thomas Watson experimented by first asking twelve people to hold hands and create a circuit through which a low current is sent, allowing Bell and Watson

⁸³ DAVIS, op. cit., p. 66

to talk successfully from different rooms⁸⁴ (fig. 21). Using our imagination, one might recall seances where several people are sitting around a candle or a light bulb in silence holding hands in the hope that their combined energies will allow them to communicate with the dead. Born during a period of ghost obsession and spiritualism, it is not surprising that the inventors of the phone have also had a fascination with spirits who have left us. It is almost logical that they invent an object that allows two souls to communicate without being in the same room, or country.

Erik Davis believes that:

These days, of course, we are used to talking machines, and the ubiquity and pragmatism of the telephone has chased such animist perceptions back into the bush.⁸⁵

The sociologist first explains that, in today's society, we no longer feel this relationship between the mind and the phone, apparently we understand how it works. Based on the analysis of the previous chapter, I would tend to disagree. Indeed, only scientists with many years of study in the fields of technology, fully understand how the voice is transmitted from one device to another. Like computers, a phone with no more power in its batteries is said to be dead. Moreover, if we pick up a phone and do not hear a dial tone, we usually also say that the line is dead. The phone has been at the centre of our imagination (fig. 22), and perhaps even considered a scary object.



Fig. 21



Fig. 22

84 Ibid.

85 Ibid, p. 67.

Take the famous scene in *Scream* when the main character, Sidney, answers the phone and hears a scary voice (fig. 23). One would think that hanging up and then ignoring the phone would be a good idea (making it a rather short film). However, Sidney does not. The incessant ringing almost orders her to pick up the receiver and speak to the evil soul on the line⁸⁶. It is also evident in every day life, when we frantically seek our phones while it is ringing in commanding tones, while it would be easy to call back once the phone found.



Fig. 23

Phones and other devices link us to others through forces that most of us understand little about. Hearing the voice of someone on the phone gives meaning to communication with a bodiless soul. Screens add to the impression of interaction with others and offers an enhanced visual stimulus. For this analysis, we will study the screens on digital devices. Jay David Bolter and Diane Gromala offer:

When we look in the mirror, we see ourselves, and we see the room behind and around us – that is, ourselves in context. Digital interfaces are like mirrors in the sense that they reflect the user in context, including her physical surroundings, her immediate working or home environment, and the larger environment defined by her language and culture.⁸⁷

Thus, the computer screen can display graphical representations of what cannot be felt by the body. It

86 CRAVEN Wes, *Scream*, Dimension Films, 1996

87 BOLTER Jay David et GROMALA Diane, *Windows and Mirrors: Interaction Design, Digital Art, and the Myth of Transparency*, MIT Press, 2003, p 27. Jay David Bolter est un professeur en New Media à l'Université de Georgia Tech. Diane Gromala est la directrice de Canada Research à l'école de Interactive Arts and Technology à l'Université de Simon Fraser.

interacts with the audience not only by allowing them to choose what they want to see or hear, but also by offering the opportunity to create. The screen is now considered a window on the world, just like fantasy. Indeed, most of video games take place in fantasy worlds, and many of them have created a basic participatory fan base. According Susca Vincenzo, who joins the thoughts of Gilsdorf, participating through screens with others is also “surrendering to something greater than oneself.”⁸⁸

In addition to allowing the user to visualise things normally invisible or not felt, the digital display also allows him to interact with others in a way that other mediums do not allow. The History professor Theodore Roszak gives us a picture of someone using a screen:

The vision is as follows: you are sitting in front of a bright screen, caressing the keys, looking at remarkable things at the speed of light. Words, pictures, images appear out of nowhere. Like a child, you begin to believe in magic again. And, because it does magic, a heady sense of power accompanies the action. You have the whole planet’s culture, there at your fingertips! All databases, libraries, archives, films, art museums, billboards, telephones and fax machines in the world are in this one box.⁸⁹

⁸⁸ *Place de la Toile*, op. cit., 2013, translated from French by the author: « s’abandonner à quelque chose de plus grand que soi. »

⁸⁹ ROSZAK Theodore, *The Cult of Information: A Neo-Luddite Treatise on High Tech, Artificial Intelligence, and the True Art of Thinking*, University of California Press, 1994, p. 186, translated from French by the author from: «La vision est la suivante : on est assis devant un écran lumineux, caressant les touches, en regardant des choses remarquables sur l’écran à la vitesse de la lumière. Des mots, des photos, des images apparaissent de nulle part. Comme un enfant, on commence à croire à la magie une fois de plus. Et parce que l’on fait de la magie, un sens enivrant de pouvoir accompagne l’action. On a la culture de toute la planète, là, au bout des doigts ! Toutes les banques de données, les bibliothèques, les archives, les films, les musées d’art, les panneaux d’affichage, les téléphones et télécopieurs dans le monde sont dans cette seule boîte.»

The digital display allows another form of sensorialism, an illusory experience of sharing. This device is thus doubly magic. Not only it has a soul, but it also allows multiple souls to communicate. Unlike the phone that only works on the auditory senses, the digital display also works on vision and touch.

An experience that some of us look for is the contact with other minds and souls, for example those of dead people. According to the British anthropologist E.B. Tylor, religion was partly created to explain what we happens to us after death:

From the observation of the primitive [he] reflects on the experience of sleep, dreams and death, the origin and the succession of humanity's main religious beliefs: the idea of the soul distinct from the body, worship of the dead and ancestors, belief in spirits, and of higher deities, finally in one unique god.⁹⁰

We wonder about what happens to our souls after our bodies die, and if other minds evolve around us. For some, our souls exist, as described by Gilbert Ryle, and with other types of spirits, they interact with the objects we have created for this purpose, or through objects we use every day. An object with a strong relationship to ghosts is the computer. For the mathematician and philosopher Kurt Gödel, this is proof that our souls continue to exist even after our time on earth.

⁹⁰ « Animisme », *CNRTL*, [en ligne], <http://www.cnrtl.fr/lexicographie/animisme>, (consulté le 10/01/2015), translated from French by the author: «À partir de l'observation des primitifs, [il] explique par l'expérience du sommeil, du rêve et de la mort, l'origine et la succession des principales croyances religieuses de l'humanité : idée de l'âme distincte du corps, culte des morts et des ancêtres, croyance aux esprits, puis à des divinités supérieures, enfin à un Dieu unique.»

This early XXth century philosopher had a very singular imagination, which led him to become paranoid to the point that he ate only what his wife prepared for him, was a hypochondriac, and believed that ghosts lived in the bushes of Princeton University where he worked. He also proved through the use of Einstein's theory of relativity that time travel was possible.

However, Gödel was not a coot, his theorem has had a great impact on scientific and philosophical thinking: the incompleteness theorem comparing computers to humans. On the one hand the computer is regulated by its states, or axioms, that humans have programmed, so it is unable to work or move without human intervention. On the other hand, humans have an infinite number of states and can find axioms accidentally, because they are unable to understand themselves completely. We need others to unlock what we probably already know, but do not necessarily conscious of. We are therefore never complete.

According to Gödel, there are conscious and logical beings living indefinitely, allowing them to find all the possible axioms to achieve completeness and thus refute his theorem. Gödel also believes in life after death, where our souls forever live in a world of mathematics in search of these axioms⁹¹. Thus, using the examples Ryle's "Ghost in the Machine" dogma and Gödel's incompleteness theorem, we can see that technical objects attract spirits, it is not surprising that we try to communicate through them.



91 CASSOU-NOGUES Pierre, « Gödel, Wiener, la cybernétique et les fantômes », *Média Médium*, Conférence à l'YGREC, Paris, 28 November 2014

Some objects have allowed us to see souls. A good example is the camera, invented by Niépce in 1826 using tin plates⁹². The link between the soul and photography is very strong, as we can see through some primitive and existing civilizations who believe that to be photographed is to have their souls stolen and trapped in the box. At the same time, photography was quickly adopted by Niépce's contemporaries, and used by portrait photographers.

Technology invented to create a photo asked people to remain motionless for several minutes. The picture that emerged was never perfectly clear. By contrast, a photograph of a person completely immobilized by *rigor mortis* for example will not have that problem. England's Victorians knew this aspect of photography and took the opportunity to take pictures of recently deceased family members (*fig. 24*). On the other side of exposure, a moving person left only a white fuzzy trace on the first negatives (*fig. 25*), giving the effect of a spectre. In both cases, photography and photos confronted Europeans to their lives after death and the possibility that people recently departed are still present around them⁹³.

As well as trying to see souls, we also wanted to communicate with them. Yves Citton explains a theory that Professor Eugene Thacker has developed:

Eugene Thacker couples the supernatural horror stories with medieval or Kantian ontology. He draws a



Fig. 24



Fig. 25

92 GERNESHEIM H. and A., *A Concise History of Photography*, Thames and Hudson, 1971, p. 20

93 Ibid

theory of anti-mediation, which seeks to show how, behind their functional unassuming communication, devices put us in contact with another world, another reality, where mediation always returns to what exceeds the haunting.⁹⁴

This attempt to contact what some call “another plane of existence” seems to be as old as humanity, as can be seen with the existence of shamans since prehistoric times, and still today. The reporter for the BBC, and herself shaman (*fig. 26*), Corine Sombrun provides a definition of shamanism and its usefulness: “What I know of shamans of the time, is that it is a kind of link between the human and the spirit world.⁹⁵” During Prehistory, as well as those who still exist today, shamans use objects made of raw materials to connect and communicate with the spirit world, as totems and amulets for example.



Fig. 26

Today, we have created new objects to create such a connection. An example is the ouija board used to create haunted writing during seances, also known as psychography or the art of writing unconsciously or under the direction of a spirit. Originally invented by the Chinese during the Ming Dynasty between

94 CITTON Yves, NEYRAT Frédéric, QUESSADA Dominique, « Envoûtements médiatiques », *Multitudes*, n° 51, 2012/4, p. 61, translated from French by the author: «Eugene Thacker accouple les récits d’horreur surnaturelle avec l’ontologie médiévale ou kantienne. Il en tire une théorie de l’antimédiation, qui cherche à faire apparaître en quoi, derrière leur apparence banale en fonctionnelle, les appareils de communication nous mettent en contact avec un autre monde, une autre réalité, où la médiation renvoie toujours à ce qui dépasse la hante.»

95 SOMBRUN Corine, « La transe chamanique, capacité du cerveau ? », *TEDx-Paris*, décembre 2012, [en ligne], <https://www.youtube.com/watch?v=Ym-0kIECFi0U>, translated from French by the author: «Ce que je sais du chaman à l’époque, c’est qu’il est une sorte de lien entre le monde des humains et le monde des esprits.»

xivth et xviith century, to replace sieve created haunting writing, under known as *fuji*, a technique that uses a board just as the ouija does today⁹⁶.

This spirit communication device asks participants to together touch a triangular shaped palette, which is then passed over a card or paper inscribed with letters, numbers, and two words, yes and no (hence the name ouija, French *oui*, and the German *ja*) (fig. 27). Normally, a spirit guides the participants, forming a word or a yes or no answer. If you believe in the esoteric, spirits exist and can communicate through objects. It is possible that the participants subconsciously, or rather consciously, write the words by taking control of the pallet without the others knowledge.



Fig. 27

The spirits seem to be trying to communicate with us through other objects, their primary function changed, an action called electronic voice phenomena, or EVP. An example is the audio tape, in certain circumstances, allows people to hear the voices of deceased people⁹⁷. The untuned television also seems to allow people to hear the souls through the white noise created by the display. You can take the example of the answering machine and its ability to allow us to hear the voice of our correspondent knowing he was not present at that time.

Davis asks several questions about the phone: “Does it talk, do we talk through it, or are those vibrations only the ghosts of ourselves?⁹⁸” He goes on to describe the sensation of hearing on his answering machine the

96 MARTIN ELLIS Melissa, *101 Ways to Find a Ghost: Essential Tools, Tips, and Techniques to Uncover Paranormal Activity*, Adams Media, 2011, p. 88

97 Ibid.

98 DAVIS, op. cit., p. 67

voice of someone who has just died. Even if the user knows that the person is deceased, his or her voice in the answering machine turns the object into a container for the soul, which explains the user's reluctance to clear the message.



Fig. 21 - Alexandre Graham Bell calling Chicago from New York, 1862, Gilbert H., Library of Congress.



Fig. 22 - The first mobile phone?, Jacques Tati, Jour de Fête, 1949, Francinex

Fig. 23 - Sidney being called, Wes Craven, Scream, 1996, Dimension Films





Fig. 24 - Photo of a dead woman surrounded by her family, XIX^{ème} siècle.

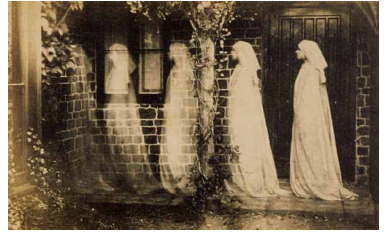


Fig. 25 - Photo of a woman moving, XIX^{ème} siècle.

Fig. 26 - Corine Sombrun building her shaman drum.



Fig. 27 - Ouija board, 1871



Interview with Audrey Breuer, medium, therapist

J.L.: Could you explain your business first? How are you psychic?

A.B.: Mediumship is, for me, as an increased sensitivity to which we all have access. We access a different level of awareness about who we are and what surrounds us. In fact, it is to be “in tune” with the feelings of the body and the heart. There are various types / events of “mediumship” In my case, I am able to communicate with the dead, and have access to cellular or generational memories of a person - his deep subconscious - to which I intentionally “connect” (with agreement of course!). Then, I help free this memory if it will help the person move forward in his or her life. It is difficult to explain this in a few lines!

J.L.: You seem to have a special relationship to the objects you touch. Would it be possible to explain this relationship? How do you live it?

A.B.: If we assume that everything on our planet is information, then touching an object is also “touching” the information it carries. Basically, a reaction/resonance happens between me and my energy/information, and the one that carries the object when I touch it. My reaction indicates whether we are “compatible” or not, basically if this object does me good, neutral or bad for me. This can be food, cosmetics, old or new objects. For example, it happens regularly but like a “burning” sensation such as when I touch chemical clothes or cosmetics with a chemical composition. This

also happens when I eat something “wrong”: the other day, for example, I ate a cheesecake that I was given. I felt in my hands the feeling that this cheesecake was not “compatible” with me, but as I did not want to bother my guests, I ate it. The result was not long in coming, and the first bite had barely reached my stomach, I could feel that “something was wrong”, a heavy feeling, tight solar plexus emotions, like sadness. I went to see the ingredients, and I discovered that they contained gelatin (I’m a vegetarian).

It also happened when I bought bracelets made in Nepal by an association. Yet, from the moment I put them on, I felt very heavy, and they “burned” me too. I felt sad, my solar plexus reacted. Later, when I “connected” to the information contained in this bracelet, I could “see” something horrible had happened to the woman who had made it during her childhood. The bracelet was imbued with emotions she had never been able to express. So I had to “liberate” the emotions from the bracelet and then “format” it to be able to wear it.

To finally give an example of a modern object, I am able to feel emissions from mobile phones. Last year, changing smartphones, I was horrified by the intensity of its emissions. When a friend would go in the next room, I could feel when he or she turned his or her phone off or on. I felt emissions “up my arm”, and such a great feeling of heaviness and choking at the solar plexus. Checking on the Internet, I noticed of all the phones available on the market at the time, this phone had the highest emissions. I remedied the problem by putting a sticker on my phone which changes its information (some stones have similar properties but this sticker sold by a friend worked

better and has the particular advantage of being more discreet).

J.L.: Can you control this relationship?

A.B.: I can try to ignore it but usually I regret it afterwards. It's a bit like asking me if I could not feel: yes I can hold my nose, but is it really good for me to ignore what I hear from my heart and my body, especially when it is about my well-being?

J.L.: Are their types of objects to which you have a stronger relationship (positive or negative)?

A.B.: Crystals and stones, when they are of very good quality. Otherwise I never liked antiques. In general, strong reactions are primarily with objects (whatever they are) that resonate strongly with me, positively or negatively. This can be any object.

J.L.: My analysis is concentrating on connected digital objects. Have you ever had a reaction to this type of object?

A.B.: Yes, my phone, as explained above. Sometimes some paranormal phenomena may interact with the Internet connection to get my attention, and I have some friends whose mere presence can disrupt the connection. I feel most smartphones negatively.

JL: How do you think this relationship is established?

A. B.: It's all about intent. A similar dish prepared by two people or in two different states of mind (happiness/anger) will not taste exactly the same, because everything is in the information. It is the same for books, which

are nothing other than information that we “ingest” by reading. There are books that resonate strongly in us, we love hate them! This is the principle of resonance.

The importance of fundamental forces creating the world

Whether to communicate with other spirits, or to obtain its own soul, the digital object needs to have access to one or more fundamental forces. These are powerful energies, most of the time artificial, which are only partially understood and controlled by the user, and sometimes even by its own creators. We can count many of these forces, most of them have been discovered or invented during the past hundred years. For this analysis, we will focus on the forces that have a strong impact on our daily digital life. We will look in particular at electricity and Wifi, including other connective forces.

Electricity, from its research in the xviith century by William Gilbert⁹⁹, was a fascination and a mystery to most people. McLuhan defines this powerful and magical power as a myth:

For myth is the instant vision of a complex process that ordinarily extends over a long period. Myth is contraction or implosion of any process, and the instant speed of electricity confers the mythic dimension on ordinary industrial and social action today.¹⁰⁰

99 HEILBRON J. L., *Electricity in the 17th and 18th Centuries: A Study of Early Modern Physics*, University of California Press, 1979, p. 169

100 MCLUHAN Marshall, *Understanding Media: The extensions of man*, The MIT Press, 1994, p.25

As most of our usual objects require electricity in one form or another, battery or an external power source, we can say that we live in a world of myths. Indeed, when it was discovered, electricity was described as “the electric fairy” (fig. 28). A fairy is a creature from folklore that helped humans in their tasks in exchange for food or gifts. According to superstition, you can leave milk and bread by the door in the evening for the fairies and elves in the hopes that they will perform during the night a task that is arduous for us. This belief has been transcribed into a fairy tale by the Grimm Brothers called *The Elves and the Shoemaker*. These magical beings came out at night in order to achieve for the cobbler the best shoes that the city had known. In exchange for their help, the shoemaker and his wife left them clothes, which the elves appreciated.



Fig. 28

The good couple saw them no more; but everything went well with them from that time forward, as long as they lived.¹⁰¹

Electricity behaves in the same way. Indeed, electricity has become an indispensable force in our lives, we cannot conceive more than a day without let alone one night. Despite Renaissance Humanism which aimed to withdraw from enslavement to God, and the hyper-rationality discovered during the Enlightenment Age, we have still found ourselves under a form of addiction. During the Renaissance, we tried to become masters of our destiny. Today, our dependency has changed. Most people living in developed countries can no longer live without electricity or even digital objects.¹⁰²

101 GRIMM Frères, *The Fairy Tales of the Brothers Grimm*, Andrews UK Limited, 2011

102 *Place de la Toile*, op. cit., 2013

Thus, despite our Humanism and Rationalism, we still have a tendency to depend on forces outside of our total control, as we did with religion and the environment. According to our findings in the first chapter of our analysis, belief in magic still existed during periods of strong rationalism. In fact, humans cannot live without depending on a mystical force, or without a magical beliefs, even if they only control it partially.

According to McLuhan, this is especially true for digital objects:

Many people return to the occult, to extrasensory perception and any form of mysterious knowledge, to meet this new encircling electronic computing.¹⁰³

Electricity has led to a new relationship with our items or renewed a pre-existing relationship if we compare digital technology to totems and primitive animistic objects. They are no longer only utilitarian, objects can now change function according to our environment, ourselves and our senses.

Take a smartphone with its multiple applications that are used to “help” the user’s life. They change and mutate through design developments, but can also be removed when they become no longer desired by the user. Throughout these changes, the smartphone stays a smartphone but still ends up with different functions. Without electricity running through its circuits, the digital object is inanimate, dare I say,

103 CRISTANTE Stefano, « Le mystique du réseau », *Les cahiers européens de l’imaginaire*, n° 3, Technomagie [2011], CNRS, 2013, p. 111, translated from french by the author: «Beaucoup de gens reviennent à l’occulte, à la perception extrasensorielle et à toute forme de savoir mystérieux, pour répondre à ce nouvel encerclement de l’informatique électronique.»

lifeless, without a box function that can be changed according to the user only through decoration or damage but will do nothing more.

Not only electricity creates animism, it has also allowed our imagination to invent connections between us and the spirits and even objects. According to Davis:

Vibrating in the gap between life and physics, between matter and the unseen ether, electricity inhabits a liminal zone that calls down spirits and sublimities out of thin air.¹⁰⁴

Electricity is a natural phenomenon that seems to come out of the sky. Take for example the lightning that seems to materialise in the clouds and then sent on earth. It is not surprising that we have taken them for divine wrath such as from Thor of the Norse myths or the Christian god. When electricity was discovered and attempted to be controlled, it was not a stable power source¹⁰⁵. For example, the bulbs tended to flicker like candles did with a gust of wind or a passing spirit. It is not surprising that electricity was widely used in Victorian seances. This is confirmed by Davis:

Since the seventeenth century, the electromagnetic imaginary has seeped into religion, medicine, and technology, and over that time has probably led to more metaphysical speculations, heretical claims, and wacky gizmos than any other natural force.¹⁰⁶

104 DAVIS, op. cit., p. 40

105 « Incandescent light bulb », *Wikipedia*, [en ligne], http://en.wikipedia.org/wiki/Incandescent_light_bulb

106 DAVIS, op. cit., p. 41

Indeed, electricity allowing animistic thoughts, as well as non-mechanical and/or autonomous movements, many magical objects have become real, meaningful and have appeared in our lives rather than in stories. The philosopher Edgar Morin adds to Clarke's third law on technology, declaring: "Technology makes possible today what was yesterday magical."¹⁰⁷ A major discovery, allowing for such magical inventions, is electricity, which, as we have just seen, is considered as being magic. One could conclude that designers invent even today magical items. Another philosopher, Ellul, describes the process that these designers use to think up new objects:

It is as if in a dream world, the great wizard discovers a magical technique, applies it to reality, and suddenly everything is transformed.¹⁰⁸

These wizards of our world are thus scientists and designers. The first discover the techniques or forces while the latter finds ways to apply them to our objects and thus our daily lives. Accompanying such masters of sorcery are magicians, specialists who know how to use a power, but do not know how to invent or discover. Before, it was the shamans who could communicate with spirits, or medicine men who knew the herbs and nature. According Susca, it is now the nerds and geeks¹⁰⁹. We call them when we

¹⁰⁷ D'après Susca dans *Place de la Toile*, op. cit., 2013, translated from French by the author: «La technologie rend possible aujourd'hui ce qui était magique hier.»

¹⁰⁸ BOHRER, op. cit., p. 117, translated from French by the author: «Tout se passe comme si dans un monde de rêves, le grand sorcier découvre une nouvelle technique magique, applique celle-ci à la réalité, et tout à coup, tout est transformé.»

¹⁰⁹ LE QUÉAU Pierre, « La mémoire des pierres », *Les cahiers européens de l'imaginaire*, n° 3, Technomagie [2011], CNRS, 2013, p. 44

do not understand why a digital object is not working properly. Sometimes, especially with electricity, strange devices are created. One of them is communication between the human and the object through invisible and intangible electric fields.

This feeling seems to be only felt by those who have particular ability. Thus, the medium Audrey Breuer explains that she detects the good and evil forces of the world thanks to electromagnetic fields emanating from an object she touches, a person close to her and she sees through a screen.

We seem to live in a world of magical communication. Today, people can instantly chat all over the world. The technology creating communication networks, GSM, has enabled the development of hundreds of mobile network providers, most of which also include Internet connections in their packages¹¹⁰. We can now be connected to the world by immaterial forces (*fig. 29*).

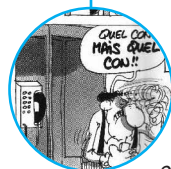


Fig. 29

The author and psychic, David Porush, offers an interesting theory:

Every time culture succeeds in revolutionizing its cybernetic technologies, in massively widening the bandwidth of it's thought-tech, it invites the creation of new gods.¹¹¹

Monotheistic religions could not have existed without the invention of writing, which helped to universalise

110 GSMA, 2015, [en ligne], <http://www.gsma.com/aboutus/gsm-technology>

111 PORUSH David, « Hacking the Brainstem: Postmodern Metaphysics and Stephenson's Snow Crash », *Configurations 2*, n° 3, 1994, p. 537

their dogmas to ensure homogenisation of belief. When Internet was invented and deployed around the world, we can say that an ancient god was resurrected: the winged shod Hermes, son of Zeus and the Pleiad Maia, messenger for his brothers. He was also said to be “fleet as thought¹¹²” as are our emails when our Internet connection is working properly. Davis says:

Hermes rules the trans-temporal world of information exchange that you and I are participating in right now, myself as I tap out there pixelated fonts and you as you absorb their printed twins through your eyeballs into your brain.¹¹³

He seems to personify rapid information distribution. As Hermes (*fig. 30*) is a god and thus created by the magic of imagination, Wifi and other communication forces are entities that could also be classified as «magical». Like electricity, they are intangible and often misunderstood.



Fig. 30

I saw my teacher marvel at the execution of the procedure, looking for the connective cables between my laptop and the network printer and, finding none, finally not understanding anything at all. For him, who was unable to find a logical explanation for the situation, felt just like witchcraft.¹¹⁴

112 DAVIS, op. cit., p. 14

113 Ibid

114 BOHRER, op. cit., p. 113, translated from French by the author: «J’ai vu mon professeur s’extasier devant l’exécution de la procédure, cherchant des yeux le raccordement de câbles entre mon ordinateur portable et l’imprimante de réseau et, n’en trouvant pas, il finit par n’y rien comprendre du tout. Pour lui, qui ne réussissait pas à trouver une explication logique à la situation, cela relevait tout simplement de la sorcellerie.»

Just as humans use digital technology to communicate, digital objects use the Wifi and other connective forces such as Bluetooth or infrared. Not only can this be described as a form of animism, even consciousness, it also occurs without our full understanding, and even independently. Many of us have tried to establish a wireless connection between a computer and a printer only to get error messages. I would tend to agree with British comedian Hugh Dennis who says: “My computer for, example, frequently tells me that he’s unable to connect with my printer. Clearly there’s some emotional turmoil going on.¹¹⁵” Which is, again, an animist statement.

Today designers and researchers create more and more connected digital objects. These systems take their information from different sources, which are then sent to a “command central”. An example is the connected watch (*fig. 31*) that gives you not only the time but also communicates with the user’s smartphone to get mail notifications, and weather forecasts. These physically separated objects are connected and communicate via a force, Wifi or another, automatically. So we can see three magical aspects to these systems: electricity to run them, the Wifi or 3G to enable them to accumulate information and automation so they can offer such information without request the user.

The designer Dan Hill added a fourth level of magic to these digital objects: our body.

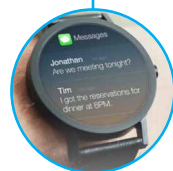


Fig. 31

Our very bodies are shaping our digital interactions. We are part of The Network, and not just intellectually, in

terms of our projected persona and identity, but physically. The body is making The Network visible, legible. [...] We have a long understanding of how the body creatively interacts with invisible forces. If you watch footage of Jimi Hendrix, you can see how he used his body to shape his guitar's feedback; the sound is produced by the interplay of his guitar, its pickup, the speakers, the room, and his body within an electric field, in space, over time. In similar fashion, sensors and actuators are also at play within invisible fields, equally shaped by the body, as well as objects and spaces.¹¹⁶

While electricity could be classified as a utilitarian force, Wifi, 3G and other connection networks have become immersive powers. We, the daily users of connected digital objects, have found our bodies absorbed by what Hill calls the Network. Not only do we use it, build it, and participate within it, the network also feeds off us. Most users of *Google* and *Facebook* are already aware of the fact that the information we provide is collected, analysed and then sold to other companies. They might not be aware that this information may also come from objects that "interact" with their bodies. Through connected digital objects, we are being watched and probably manipulated by the information that is made available to us.

Indeed, via Wifi, 3G and other networks connected to the Internet, we can amass a large amount of information that we must then sort through to extract the parts that interest us. Citton uses magical imagery to explain this.

116 HILL Dan, « 21st Century Gestures Clip'art Collection » In NOVA Nicholas, op. cit., p. 35

If media “informs” us it is rather the extent that they give form to a more spiritual communication which resembles bewitchment rather than knowledge. [...] The fragments of words, sounds, images that reach us from the “real” world look more like sorcerers’ vaults (locks of hair, nails, or relics through which they hope to affect the lives of distant people) - than “facts” (“objective”) by the accumulation of which we can better “understand” our world.¹¹⁷

By creating the Internet and networks, we have opened a magic book we want to use without really understanding how the spells work. To address this lack, we have created objects, or amulets that help control these spells without the proper necessary knowledge. This lack of understanding is such that many rituals without effects, at least proven, were created around these connections. I do not think I am the only one who has walked around with my phone, my arm outstretched like a wizard’s wand, trying to catch some ribbons of network to make a call. As for laptops, users have been known to try different corners of a room to get a better Wifi connection.



Fig. 32

While electricity was used to try to treat certain diseases, such as those affecting the muscles¹¹⁸,

117 CITTON, op. cit., p. 59, translated from French by the author from: Si les médias nous “informent”, c’est bien plutôt dans la mesure où ils donnent forme à une communication spirituelle relevant davantage de l’envoûtement que du savoir. [...] Les bribes de paroles, de sons, d’images qui nous parviennent du monde “réel” ressemblent aux voutls des sorciers (ces mèches de cheveux, ongles, ou reliques à travers lesquelles ils espèrent affecter la vie de personnes distantes) – bien davantage qu’a des “faits” (“objectifs”) par l’accumulation desquels nous pourrions mieux “comprendre” notre monde.

118 DE CAZELES Marsans, *Second mémoire sur l’électricité médicale, et histoire du traitement de quarante-deux malades entièrement guéris, ou notablement foulagés par ce remède*, Mequignon l’aîné, 1782

connected networks have seen an opposite trend. Some people say they have an intolerance to Wifi networks. They suffer from Wifi disease causing headaches, palpitations and even dizziness, and would find themselves forced to live away from cities to escape radiation¹¹⁹. A few experiments have been implemented in order to prove the legitimacy of this disease, which at present have proven nothing¹²⁰. This illness being psychosomatic or not, Wifi raises many questions facing the misunderstanding surrounding its functions and its side effects on the human body. It may be that, like many substances and ancient discoveries, these questions are answered, would mean the loss of these networks' magical aspects.

119 MORFORD MARK, « Is Wifi making you sick? », *Huff Post Tech*, 28 juillet 2013, [en ligne], http://www.huffingtonpost.com/mark-morford/is-your-wifi-making-you-s_b_3315685.html

120 PRESTON Elizabeth, « How to Convince People WiFi Is Making Them Sick », *Inkfish*, 13 mai 2013, [en ligne], <http://inkfish.fieldofscience.com/2013/05/how-to-convince-people-wifi-is-making.html>



Fig. 28 - La Fée Electricité,
Lithographie by Tamagno, Imprimerie
Camis, 1900

Fig. 29 - Binet, Les Bidochons usent le
forfait, Tome 17, Fluide Glacial, 2000,
p. 15





Fig. 30 - Giovanni da Bologna,
Hermes in flight, resin and bronze



Fig. 31 - Connected watch concept,
Luan Gjokaj



Fig. 32 - While looking for network

3

Creating magical objects

In addition to a historical affinity for magical thinking including animism and rituals, we also tend to not only create objects with an esoteric purpose, but also to manipulate the forces that we can consider as being mystical.

Taking into account human desires for wonder, we will study objects that are still part of our imagination, having never been created, but have a cultural importance. Then we will undergo a semiotic analysis of existing objects.

A quick intermission on semiotic studies.

The study of signs began in 1690 with the philosophical works of John Locke, such as an *Essay Concerning Human Understanding*. They were continued by the American Charles Sanders Peirce and the Swiss Ferdinand de Saussure in the late nineteenth century, the period when American semiotics and Swiss semiology were developed.¹²¹

For Saussure, we believe in a language of signs and meanings. The first is the form in which takes the word, while the second is the concept that it represents. A furry four-legged pet, with whiskers and a long tail, the signified, is called cat, *chat* or *gato*, depending on the known language of the person who is stroking it (*fig. 33*). Language, as well as education and culture, is very important to Saussure as it will dictate the human's response when looking at the signified. The Scandinavian Saami ethnic group have 180 versions of the word snow, and even more for the word reindeer¹²². This population will have a much more nuanced understanding in front of a reindeer in the snow than a Southern European before the same picture.



Fig. 33

According to Peirce, “we think only in signs.¹²³” For the American, there are three levels of recognition of our world. We first look at the *Representamen* or the form which the sign or word takes, and then the *Interpretant* or the meaning of that word. The third level is the *Object*, which is represented by the

121 CHANDLER Daniel, *Semiotics: The Basics* [2002], Routledge, 2007, p. 2

122 MAGGA Ole Henrik, « Diversity in Saami terminology for reindeer, snow, and ice », *International Social Science Journal*, Volume 58, n° 187, Mars 2006, p. 25–34.

123 CHANDLER, op. cit., p. 13

sign¹²⁴. For Saussure and Peirce, the relationship between the sign and the subject is very important. The American found three that are:

- *Iconic*, sign resembles the signified but uses a different form of expression as a description, a drawing or even music. It describes what one can see of the object.
- *Symbolic*, an arbitrary mode based on the culture of the viewer, such as language and education. It represents what we must learn to have some understanding.
- *Indexical*, the sign is directly related to the signified in ways that touch our senses. Thus, we are all, more or less, able to understand the relationship.¹²⁵

We will use these three relationships for our object semiotic study.

124 Ibid, p. 29

125 Ibid, p. 36-37

Fictional objects and a magical future

It is possible that, when we create an object, we add an element of wonder for the user. In any case, we seem to use a magical language code in our designs. David Rose, designer at MIT, describes six forms of magic that we would look for in our items.

- *Omniscience.* This is the desire to have great knowledge. We have a voracious appetite to know as much as possible and to know about things that go beyond facts and information. We would love to be able to predict what will happen in the future.
- *Telepathy.* We have a powerful desire to connect to the thoughts and feelings of others, and to be able to communicate with ease, richness, and transparency. We want to know others and to feel known by them.
- *Safekeeping.* We fervently wish to be protected from harm. To feel comfortable, safe, and at ease.
- *Immortality.* We want to be healthy, strong, fully capable. We dream of living long lives, vital to the last moment.
- *Teleportation.* We crave movement, to be transported easily and swiftly and joyfully from one place to another, and to live unconstrained by physical limits or boundaries.
- *Expression.* We all wish to be generative, to fully express ourselves in many forms and media—acting, music making, art, writing, cooking, dancing, documenting our lives.¹²⁶

126 ROSE David, *Enchanted Objects: Design, human desire, and the Internet of things*, Scribner, 2014

Today's designers are in constant search for technical objects that would help their users, while ensuring the inventor a substantial income. They tend to use one of these six magical desires, and probably others not quoted by Rose. Before the discovery of electricity, the power that animated objects without the need for human effort or animal, inventors imagined forces that could create the same effect. Thanks to magical thinking, we can find throughout History examples of inventors who have influenced today's designers.

One of the first inventors who have had a great influence on our technology today is the Ancient Greek engineer Heron of Alexandria (*fig. 34*). This mathematician and engineer created many animated objects requiring minimal human force to man, all the ancestors of objects that we know today. We can use as an example the vending machines or even fire pumps¹²⁷. While most of these inventions had a primary use for the Ancient Greek:



Fig. 34

Most of [Heron's] gadgets were wondrous rather than useful – magical machines that paradoxically eroded the cultural authority of the very rational know-how that stimulated their design in the first place.¹²⁸

Heron especially created automatons for temples and religious places, first to simplify the lives of priests, but also to add to the architecture an added sense of spirituality to the lives of people living there. We can find inventions such as automatic sacrificial water dispensers¹²⁹ or even a trumpet that is automatically blown at

127 WOODCROFT Bennet, *The Pneumatics of Hero of Alexandria*, Taylor Walton and Maberly, 1851, p. 23

128 DAVIS, *op. cit.*, p. 19

129 WOODCROFT, *op. cit.*, p. 51

the opening of the temple doors¹³⁰ (fig. 35). Heron is also the source of many theatre mechanisms and automata such as statues in motion or even sound effects¹³¹. In all cases, these automata gave the impression to Heron's contemporaries of seeing their gods animate their objects, giving another meaning to the theatrical expression *Deus Ex Machina*, or the god in the machine. Heron tried to bring wonder to the Greek culture, a mechanism that is rich today in films and even some plays.

Myths were also the basis of Greek inventions.

The ancient bards who collectively composed the Homeric epics even went so far as to imagine man-made objects that could reproduce the demiurgic spellcraft of their own chants.¹³²

In the *Iliad*, druids imagined a shield on which are carved scenes of battles, agriculture and celebrations that come to life like a cartoon (fig. 36). You can see the beginnings of television.

If we talk about the great inventors of our history, we cannot fail to mention the imagination of Leonardo da Vinci. Unlike Heron, da Vinci was particularly focused on improving the lives of his contemporaries, and had no desire to create wonder. This may explain why most of his inventions are now recognised as improvements to existing items¹³³, wonder having been added by the original inventors.

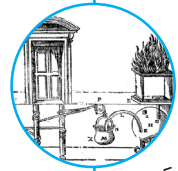


Fig. 35



Fig. 36

130 Ibid., p. 37

131 McDONALD Marianne et WALTON Michael, *The Cambridge Companion to Greek and Roman Theatre*, Cambridge University Press, May 31, 2007, p. 154

132 DAVIS, op. cit., p. 13

133 GIBBS-SMITH Charles, *The Inventions of Leonard da Vinci*, Charles Scribner's Sons, 1978, p. ix

The Industrial Revolution is synonymous to a time of many discoveries and a significant technological advances. Many concepts have emerged during this century but also many attempts from inventors to imagine the world in 2000. These failed inventions are the focus of a new line of research named media-archeology. These researchers have unearthed, for example, a description of an island containing futuristic objects to its author, Charles Tiphaigne of Roche. He predicted the video-phone as a mirror that allows the user to see people far and near, as well as photography through a coated canvas¹³⁴. A lot of research have developed new concepts that could not be created.

The Industrial Revolution was, among other things, a period of fascination for the afterlife. According to Yves Citton, the eighteenth century contemporaries invented many objects as mediators between the living and the dead.

There are imaginary media for communicating with the divine, with the spirit world, with different forms of 'Others'; others aim to transcend space and absence using telecommunication devices or to transcend time by allowing to talk to the dead or to see vanished cities; some participate in dreams of abundance, other dreams of freedom or political emancipation.¹³⁵

134 TIPHAIGNE DE LA ROCHE Charles, *Giphantie*, A. Babylone, 1760, p. 132-133

135 CITTON Yves, « Les Lumières de l'archéologie des média », *Dix-huitième Siècle*, n° 44, 2014, p.3, translated from French by the author: « Il y a ainsi des média imaginaires destinés à communiquer avec le divin, avec le monde des esprits, avec différentes formes d'Autres' ; d'autres qui visent à transcender l'espace et l'absence par des dispositifs de télécommunication ou à transcender le temps en permettant de parler avec des morts ou de voir des villes disparues ; certains participent de rêves d'abondance, d'autres de rêves de délivrance ou d'émancipation politique.»

These objects have remained fiction, but keep the spirit of wonder described by Rose. The areas of learning, reading and printing also had the right to their wacky inventions. In 1894, Octave Uzanne, author and bibliophile, imagined a world where sound advocated over the other senses (*fig. 37*).



Fig. 37

Uzanne wrote of a future world of publishing which would no longer rely on the 'static' printed page, delivering instead all content through voice (both live and recorded) using a platform which nowadays would best be described as "on demand".¹³⁶

He could not know that we have passed through, thanks to electricity amongst other forces, a visual world to into a world of information. This animistic mystical force has changed the way the inventors thought of their future, and thus their technical objects. Many of them found the inspiration for their devices in fantasy and science fiction. Indeed, the artifact has an importance in these genres, more so than in any other. They are an important part of the narration.

The objects in fantasy are mostly based on existing and improved items. We can take the example of Tolkien's iconic sword, taken from *The Hobbit* and *The Lord of the Rings*. Belonging to the main characters Bilbo and Frodo, *Sting* is not only a weapon, it is also an orcs and goblin detector (*fig. 38*). As the trilogy was written during the Second World War, it is possible that Tolkien was inspired by a new technology of the time: the radar. It was much used on



Fig. 38

136 LUDOVICO Allesandro, *Post-Digital Print: The mutation of Publishing since 1894*, Ram Publications, 2013, p. 16-17

Allied war ships to locate German UBoats, as did his fictional characters. Unlike radar which only detect, *Sting* is a weapon, and thus has a dual function. It is also possible to find on the market a plastic sword in the form of *Sting* that allows the user to detect unsecured Wifi networks¹³⁷.

Some fantasy writers were inspired by new technology which they then changed to enhance their animistic component and add more features that might become real. A good example is Sir Terry Pratchett with his series *The Discworld*. He describes one of his inventions:

Finally it has to be said that on the Disc there are certain low-grade demons who stay permanently in the human world, working inside pocket watches, picture-making devices, personal disorganizers, and similar contraptions. Some are eager to please, others distinctly surly. The lords of Hell never, ever, mention this.¹³⁸

We can recognize here the digital watches with alarms, Polaroid cameras, and personal agendas, which are more fully described in his books and become more similar to smartphones. For Pratchett, objects which are for us digital gain a true soul. As described in the book *Thud!* of the series, they can also learn without human intervention.¹³⁹

Science-fiction, fantasy's cousin, is also a source of inspiration for today's designers. One of the biggest source is the TV series *Star Trek*. Created in 1966 by

137 ROBERTSON Adi, « Bilbo's sword Sting can detect unsecured Wi-Fi, not just orcs », *The Verge*, 31 décembre 2014, [en ligne], <http://goo.gl/p8rIZx>

138 PRATCHETT and SIMPSON, op. cit., p. 54

139 PRATCHETT Terry, *Thud!*, Doubleday, 2005

Gene Roddenberry, *Star Trek* imagines a universe filled with technologies that are as of yet undiscovered, but also a few that we use today. One of them is the mobile phone. The designer of the very first, Dr Martin Cooper of Motorola, clearly states that he was heavily inspired by the *Communicators* used by Captain Kirk and his crew to talk to each other remotely (fig. 39).¹⁴⁰



Fig. 39

According to Nova in *Futurs ? La panne des imaginaires technologiques*, science-fiction can be used to predict the future of our technology and the direction in which our cultures are going. “There is obviously parallel to a magnificent and opulent future visions with apocalyptic futures, as science-fiction is often used as a whistle-blower.¹⁴¹” To know what we should avoid, we should draw our inspiration from films such as *The Terminator*. Let us use Edgar Morin’s remark: “Technology makes possible today what was magic yesterday.¹⁴²” Today, it would be natural that all our magical thinking is replaced by our technological advances, we are apparently no longer amazed.

However, according to Susca there is a “shift in thinking and designing from the one who created a technique and those who live it.¹⁴³” Indeed, due to the functioning complexity, the user understands only the

140 LAYTNER Lance, « Did Steve Jobs Study Star Trek? », *Edit International*, 2011, [en ligne], <http://www.editinternational.com/read.php?id=4810edf3a83f8>

141 NOVA Nicholas, *Futurs ? La panne des imaginaires technologiques*, Les Moutons électriques, 2014, p. 50, translated from French by the author: « Il y a évidemment, en parallèle à un futur magnifique et opulent, des visions de futurs apocalyptiques, puisque la science-fiction sert souvent de lanceur d’alerte. »

142 D’après Susca in « Technologie et magie », *Place de la Toile*, 2013, translated from French by the author: « La technologie rend possible aujourd’hui ce qui était magique hier. »

143 Ibid., translated from French by the author: « glissement de la pensée et la conception de celui qui a créé une technique et la manière dont elle est vécue. »

use of the object, and sometimes finds it new applications. An example is the appearance of cameras on mobile phones. First created to allow us to take pictures of everything around us, this function has been hijacked by teenagers to take pictures of themselves and then post them on social networks. The *selfie* was invented while the mobile phone retains animists aspects for its users. We are therefore not completely demystified from our technological objects.

In order to illustrate this wonder in the digital objects we use today, let us look at some examples. For that, and also to organise our thinking, we will analyse these objects in three ontological levels. We will classify into what Wittgenstein calls simple families of objects¹⁴⁴. The first involves technological objects useful to one person at a time, who becomes the system's only subject. We will call them *the objects for the "self"*. The second has several subjects, and is generally intended to be used for communication purposes. We will call this family of objects *communicating with the "other"*. In the third, we will move away from systems intervening only with humans, to look at devices that examine the environment around them. This family will be named *objects analysing the environment*.

144 GLOCK Hans-Johann, *A Wittgenstein Dictionary*, Wiley-Blackwell, 1996, p.120



Fig. 33 - Chat, cat, gato, neko, shimii, however you call it, it is not a dog.



Fig. 34 - Heron of Alexandria, Codex of Saint Gregory Nazianzenos, Greek manuscript of the 9th century.

Fig. 36 - Achilles shield, Diderot's Encyclopédie.

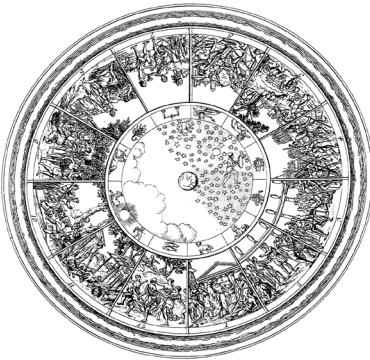


Fig. 35 - Engraving explaining the opening of the temple doors.

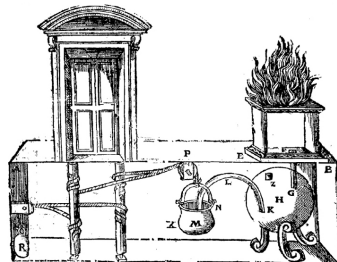




Fig. 37 - A book maker according to Octave Uzanne, Albert Robida, *La Fin des Livres*, 1894

Fig. 38 - Bilbo holding Sting, aglow to indicate goblin presence, Peter Jackson, *The Hobbit: An Unexpected Journey*, 2012, Warner Bros.



Fig. 39 - Captain Kirk with a Communicator, *Star Trek*, Gene Roddenberry, 1966



Objects for the “self”

First of all, let us take a look at a new writing technology, the Wacom digital pen, *Inkling*¹⁴⁵ (fig. 40).



Fig. 40

Let us remember the quote from Porush explaining the importance of new inventions for further communication, creating new gods. Writing is paramount invention. The pen, and its ancestors, could be called a divine creator. In fact, according to Walter J. Ong, a professor of English literature, “more than any other single invention, writing has transformed human consciousness.¹⁴⁶” With it, history can begin, the facts are recorded on paper, and communication enhanced. To write, you need a very specific tool. Originally a reed pipe, the pen became a bird feather and then metal, only to return to its tubular shape as a pen at the end of the nineteenth century. The ball-point pen, invented in 1938, will be massively popular during the 50s years¹⁴⁷. Today, almost all of us have a pen in case of necessity.

From a descriptive point of view, we can first note that *Inkling* is tubular with a point and buttons, along with a box forming a clip also featuring buttons. You must use the object to understand its iconic level. By sliding the tip of the tube on a flat, hard and slightly absorbent surface, such as paper, we can note that the point traces a fine line of ink. With our Western education,

145 « Inkling », *Wacom*, [en ligne], <http://inkling.wacom.eu/>

146 ONG, op. cit., p. 77

147 « Stylo », *Wikipédia*, [en ligne], <http://fr.wikipedia.org/wiki/Stylo>

we can recognise in this object a pen. The clip, however, requires an additional step to recognise its use. After drawing shapes, letters or other, you will need to connect the clip to an external device with a screen in order to view the scanned drawing (fig. 41).

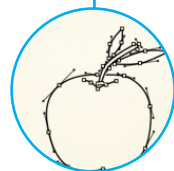


Fig. 41

Connecting the cable that links the clip to the device symbolically represents Peirce's second level. The transfer of a tangible drawing composed of paper and ink to a digital medium gives another definition in *Inkling*. The drawing is vectorized (fig. 40) by the application, which calculates the curves to recreate the forms. There are therefore mathematical equations being calculated, part of the symbolic level. However, to understand how the *Inkling* pen works, one must read the leaflet that explains only a small part of the system, which allows the use but not the function. The *Inkling* pen's description does not allow the user to understand everything about the object. We can see if the magical language brings different solutions.

However, in terms of "magical thinking", we can distinguish new analogies which explains the last level of Peirce: indexical. Sliding the tube's point to create signs may suggest a wand creating hex signs around the sorcerer. The pen with multiple functions is similar to magic feathers that appear in J.K. Rowling's *Harry Potter*. It contains anti-cheating feathers, which automatically answer the question, others that engrave the text written in the user's skin, or those that transcribe spoken words directly to paper¹⁴⁸. *Inkling*, thanks to its clip, has an additional function to a non "magica" pen. According to Davis,

148 ROWLING Joanne K., *Harry Potter*, Bloomsbury, 2000

writing, and the tool that is used, can be considered as a magical act:

Though writing has become the most of information technologies, it remains the most magical. [...] In fact, it is very intentionally upon a page of script written language and not automatically begin reading it.



Fig. 43 149

This reinforces Porush's concept, making writing and its tool mystical. The digital pen is doubly magic in the act that it allows as well as its new features that give it an animistic component.



Fig. 44

Indeed, we will need to use this concept to explain the *Inkling* system's capabilities, rather than trying to find answers in the manual. We may think that the ink has magical qualities that allows the clip to scan the page and then transfer the traces of ink to the computer. However, a simpler solution can be found. Through the cable, the pen and the clip communicate. As it is impossible to join the dialogue, an intimate bond is created between the pen and the device. The computer interprets what is sent to create an immaterial version of the piece of paper. Our designs provoke a reaction out of the medium from which they come.

This possibility was conceived long before the release of the Wacom *Inkling*, among others in the manga series by Tsugumi Ohba and Takeshi Obata in 2003: *Death Note* (fig. 42). The main character, Light Yagami, finds a notebook with magical qualities. This allows him to write the names of people he wishes

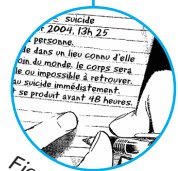


Fig. 42

to see die, adding a date, time and method. *Death Note* enhances the term “the pen is mightier than the sword” Light writes several hundred names in this book without ever having to touch the people he wants to kill¹⁵⁰.

Rose gives an explanation of our wonder of this type of object:

The [digital] pen achieves a nice fusion between analogue and digital while preserving all the familiar characteristics that make a pen such a pleasing tool. It looks like a pen, works like a pen, but is much more than just a pen. Although you love it for its extra capabilities, its essential “pen-ness” isn’t compromised.¹⁵¹

Inking allows for one of Rose’s desires to be fulfilled: the opportunity to fully express themselves in different forms. The pen takes a second feature, like many of our technological objects.

Another type of digital object useful to the individual can be found in the medical field. Also according to Rose, we are constantly in search of eternal life. Apparently, according to the *Time Magazine*, children born today have a life expectancy of 142 years¹⁵² (fig. 43). To enable this, multiple devices are emerging to help us maintain a lifestyle conducive to longevity. One of them is the *Cue*, developed by the eponymous American company¹⁵³.



Fig. 43

150 OBATA Takeshi et OHBA Tsugumi, *Death Note* [2003], Shonen Jump Advanced, 2007

151 ROSE, op. cit., p. 102

152 CARSTENSEN Laura, “This baby could live to be 142 years old”, *Time Magazine*, février/mars, 2015, en couverture.

153 *Cue*, [en ligne], <https://cue.me/#inflammation>

Cue (fig. 44) is a system composed of a small coloured box in which you slip a stick containing a sample of our body and which is then inserted into a larger white box. From a Cartesian point of view as well as symbolic, we can understand that each colour corresponds to a different analysis and each gives a specific code to the central white box to indicate the exam to practice. The user will be able to perform his or her own analysis and send the results to a site that will sort out the information graphically, rendering them understandable to the non-doctor user.



Fig. 44

Cue contains various symbolic elements, such as different box colours. Associating a colour to a pathology gives an association propensity of that colour to a molecule in our body. The vitamin D deficiency test is done using the yellow box, the colour of the sun whose rays facilitates the natural production of this vitamin.

A second level of reading brings additional elements. With these colours as well as data-vision created by the website receiving the information, we seem to be able to see organic substances and their quantitative variations. We no longer need the laboratory, the microscope and the medical knowledge normally required to understand the figures obtained by the analyses. It is assumed that the white box contains the necessary substances to reveal molecules in the sample and includes algorithms for the analysis. As the digital pen and its case, a connection is made between *Cue* and an external device.

According to Whitney Erin Bosel, *Cyborgology* author:

Biomedicalization has not fully replaced medicalization. Though his doctor may be the 'expert' on matters of medicine-most-generally, through technology-enabled observation and detailed, quantified records, the self-tracker is certain of being the expert on himself.¹⁵⁴

Through this system, the user becomes his or her own doctor and lab technician, for some particular situations. The user can make the decision to improve their quality of life. In the amount of information provided and the ease to get them, the user will have the option of following or not some or all of the recommendations offered by the application.

A third level of reading allows us to discover the magical aspects to the *Cue*. To understand how it works, we must, like the digital pen, make assumptions. It is first of all certain that there is something in the white box that acts on the samples of blood, buccal or nasal mucous, separating the molecules for analysis to keep only those of interest. This molecular separation is now generally done in laboratories by chemical, mechanical or electrical processes, the alchemy of modern times.

Indeed, not only does this box performs chemical interactions resembling alchemy, its purpose is to extend the life of the user, which is akin to the search for the Philosopher's Stone. It may be that the creators of the *Cue* have succeeded in creating a box of elves in a miniaturized laboratory performing the



154 BOSEL Whitney Erin, « Empowerment Through Numbers? Biomedicalization 2.0 and the Quantified Self », *Cyborgology*, [en ligne], <http://goo.gl/bfJqLZ>

examinations in record time. We find such beings in the *Discworld* series by Terry Pratchett¹⁵⁵, where tiny gas constituted demons are locked in boxes as painters (the camera) or organizers (PDAs).

It is also possible that *Cue* does not make these separations. It could be analysing everything then sending all the information which will then sorted through by the application installed on the external device. This feature is similar to the *Tricorder*¹⁵⁶ (fig. 45), a multi-analysis device, found in *Star Trek*. In both cases, the information gathered by the white cube can be found in our smartphones or computers. This time, the manual (or the associated site) explains that this connection is done through Bluetooth technology. This requires the proximity of both objects so that information remains transferable. There is therefore a constricting relationship between these two objects. Like the exchange between human, the boxes need to be in view of each other to be able to transfer. In addition, they do so independently without the *Cue*'s user control. We thus find animist aspects in this system.

After these two examples of technological objects that are centred around the user, we will explore two that focus on communication with others.



Fig. 45

155 PRATCHETT, op. cit.

156 « Tricorder », *Memory Beta*, [en ligne], <http://memory-beta.wikia.com/wiki/Tricorder>



Fig. 40 - Inking by Wacom, 2011

Fig. 41 - How a drawing is transferred to a PC using Inking, Wacom.

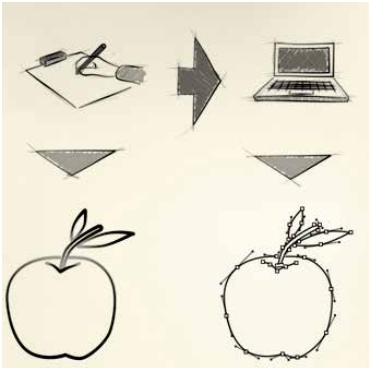


Fig. 42 - Takeshi Obata, Death Note, Tome 2, Shonen Jump Advanced, p. 18

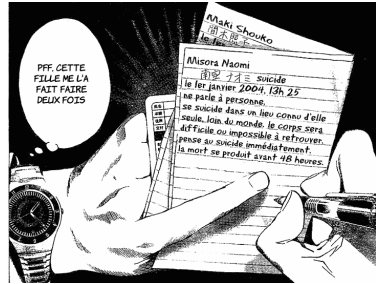




Fig. 43 - Cover of Time Magazine, February/March, 2015

Fig. 45 - A medical tricorder, Star Trek: The Next Generation

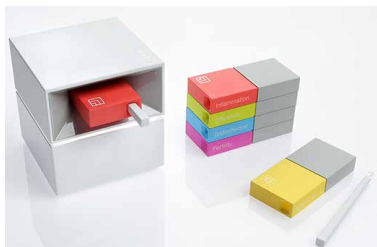


Fig. 44 - The Cue



Objects communicating with the “other”

As we saw in the second chapter of this analysis, the phone is the perfect animist object. Originally, in the late nineteenth century, crank boxes joined by cables, this device is becoming increasingly independent today to become completely mobile. The most used version in developed countries is the smartphone, a smart phone. The model that has made the most sales in 2014 is the Samsung¹⁵⁷ S5 (fig. 46) and will be the object studied¹⁵⁸.



Fig. 46

At Peirce’s first iconic level, the S5 smartphone is a black, white or coloured rectangular plastic or metal box, with a button on the front and sides. Of the objects studied so far, it seems the simplest. It has no parts that can be assembled and is not composed of several elements. You will therefore need to press one of its buttons located in the centre of the box to turn the phone on. The centre button on the display face is also the largest. We can deduce, with some ergonomic knowledge, that it turns on the unit. Because there are no other buttons forming a keyboard, a touch screen appears. One must touch the images that appear there to use the features. These images, icons, open applications and operate new features in the box. The S5 suddenly becomes a very complex object.

157 « Smartphone Vendor Market Share, Q4 2014 », IDC, [en ligne], <http://www.idc.com/prodserv/smartphone-market-share.jsp>

158 « Samsung Galaxy S5 », Samsung, [en ligne], <http://www.samsung.com/global/microsite/galaxys5/>

To try to understand it, we will be using Peirce's symbolic level. Through a network, the S5 allows telephone communication, and Visio conference to those who paid for this service. It also allows other forms of communication that have emerged over the past decade, including text, images, video, and all possible combinations of these elements. In addition, these networks which were originally dedicated to voice communication also allows the user to connect to the Internet through 2.5/3/4G¹⁵⁹, Wifi, Bluetooth or infra-red. We can use our smartphones to get information, play or even create agendas. The phone cannot perform all these functions alone, it will need the help of applications (*fig. 47*), which are inscribed in its code. Icons, and their activation, transform the function of the box. It brings together multiple objects in a single device, while keeping the same ergonomics. According to Rose, this multi-functionality still hides a certain coldness of use.

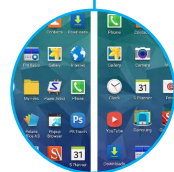


Fig. 47

Screens fall short because they don't improve our relationship with computing. The interfaces don't take advantage of the computational resources, which double yearly. The devices are passive, without personality. The machine sits on idle, waiting for your orders. The Terminal World asserts a cold, blue aesthetic into our world, rather than responding to our own. Even the Apple products, celebrated for their hipness, are cold and masculine compared to the materiality of wood, stone, cork, fabric, and the surfaces we choose for our homes and bodies. Few of us long for garments constructed of anodized aluminium with a super-smooth finish.¹⁶⁰

159 GPRS or General Packet Radio Service

160 ROSE, *op. cit.*, p. 50

There is therefore only rationality in an S5, emotions do not belong. However, Susca has shown previously that using the touchscreen calls to the sensory and thus Peirce's indexical level. The delicate touch turns the box into an object seemingly able to do everything (except coffee, get the newspaper and take the dog out).

The S5 allows users to connect to multiple people, known and unknown, and thus constitute a network in the palm of his or her hand. As a phone, it traps the voices of the people with whom we communicate, as well as their faces. It makes them available to communicate at the press of a button and the touch of a screen. We are far past the need to have an operator facing a cable panel creating connection requests with correspondents. With applications such as *Facebook* or *Find My Friends*, like a crystal ball, a smartphone can observe the doings, sometimes without their knowledge, of people. We can almost have the ability to telepathically know what a person thinks without telling us. We gain omniscience with an Internet connection and through applications that are in our smartphone.

Rose continues:

The smartphone does not have a predecessor in our folklore and fairy tales. There is no magic device I know of whose possessor stares zombielike into it, playing a meaningless game, or texting about nothing. It does not fulfill a deep fundamental human desire in an enchanting way.¹⁶¹

Now we have seen that the *S5* meets at least two desires of wonder. I still agree with Rose on the fact that the smartphone may induce automated and repetitive behaviours in the user, and thus a certain dependence. This phenomenon, observed in some generations may affect any user. It has been explored in a documentary by the journalist Pierre-Olivier Labbé, released in February 2015 named *Digital Detox*. Exploring the possibility to live 90 days without Internet, nor smartphone, Labbé discovers the fear of digital death, but also several new phobias such as FOMO, Fear Of Missing Out, or nomophobia, No Mobile Phobia¹⁶². In addition to sound signals requiring immediate action, our smartphones have become dictators to many users. We are not amazed by this digital technology, but rather spell-bound and probably imprisoned in Dan Hill's Network.

If the *S5* tends to enslave us, we might think that Google *Glass*¹⁶³ (fig. 48) increases this dependency. Invented by Google X team of the eponymous company, it was launched on the American market as an initial release in 2013. Two years later, because of falling sales, Google withdrew the *Glass* and gave its development to the ex Apple executive, Tony Fadell¹⁶⁴.



Fig. 48

What does the *Glass* look like? We can find two glass rectangles rimmed by a frame. One side has a small rectangle passing in front of a glass. Anyone keen on optics can recognize a pair of glasses. They do not, however, necessarily have the ability to identify this suspended rectangle. Rose, who was able to test the *Glass* before its recall, describes it:



162 LABBÉ Pierre-Olivier, « Digital Detox », *Canal+*, 25 février 2015

163 *Glass*, [en ligne], <http://goo.gl/LrkHMU>

164 D'ONFRO Jillian, « An insider's look at the tumultuous launch of Google Glass », *Business Insider UK*, 28 février 2015, [en ligne], <http://goo.gl/GQ9Q0E>

The distinguishing feature is the small screen, about one centimetre square, built into the frame and positioned about a half inch in front of my right eye.¹⁶⁵

This rectangle is, thus, a screen that has the ability to display information. Like the smartphone, the Google *Glass* is simple on an iconic level.

However, to use them, training is needed according to Google who created *Base-camps*, allowing users to be trained by the company's employees. On an indexical level, we learn that the *Glass* reacts to touch and voice. To turn it on, one must say "Okay, Glass!" Just as the commercials where we hear the actor say, "Ok Google, show me the cupcake frosting photos."¹⁶⁶ A menu appears on the small screen, which is selected either vertically or horizontally by touching the frame on the screen's side, or by saying the word in the menu. The *Glass* therefore uses *Head-up Display* technology, which, according to the definition by *L'Internaute*, is a "projection system on to the windshield of vehicle, allowing the driver not to look away from the road."¹⁶⁷

Beyond the user's vision and hearing of the world, he or she also collects information from this small screen. He or she hears the videos' sounds with small speakers in the branches. He or she could be somewhat distracted by this device:

¹⁶⁵ ROSE, op. cit., p. 66

¹⁶⁶ « Appli Google : Des cupcakes presque parfaits », *Google France*, 9 juin 2014, [en ligne], https://www.youtube.com/watch?v=s5_h2t2YsIE

¹⁶⁷ « HUD », *L'Internaute*, [en ligne], <http://www.linternaute.com/dictionnaire/fr/definition/hud/>; translated from French by the author: «un système de projection sur le pare-brise d'informations relatives au véhicule, permettant de ne pas détourner le regard du conducteur.»

So, even if we're not staring directly into our smartphone or television, our peripheral vision will be saturated and distracted by dense, fast, colorful information and content that swirls at the edge of our view—as Google Glass would have it.¹⁶⁸

To reach this information, *Glass* can connect to networks using smartphones. With its speakers, microphone and camera, all integrated into the frame, this system has all the capabilities of a smartphone. We can thus make a call by voice command without using any objects resembling a smartphone, or take a picture without a camera. The Google *Glass*, therefore changes its function as soon as you say "OK Glass!" and creates a double visual and noise level for the user (fig. 49). Thus, it would have a similar Cartesian reading as the smartphone, but significantly different in a magical thinking mode.

The latter is reflected in the form of an indexical relationship between *Glass* and what it means for the user. The frame shape with its space for the nose and branches prompt the user to put the glasses on his or her nose with the screen before his or eyes, like some mythical helmets. An example is the *Tarnhelm* found in the opera *Der Ring des Nibelungen* by Wagner which can render invisible or change the shape of the holder¹⁶⁹ (fig. 50). The use of the *Glass* through voice and touch generates more meaning and emotion than simple touch screens. Thus, we discover once again Susca's theory.



Fig. 49



Fig. 50

168 ROSE, op. cit., p. 41

169 BASSETT Peter, *The Nibelung's Ring: A Guide to Wagner's Der Ring Des Nibelungen*, Wakefield Press, 2003, p. 40

Like the smartphone, the *Glass* imprisons many souls in its speakers. It goes further by automatically sending notifications to the user, and by responding in writing on its small screen, as does Google searches on smartphones, or Siri on iPhones. We can experience a conversation with *Glass* as one would with a human being. During a conversation the other answers back to us in writing on the screen in front of our eye. We have an external soul to ours, resting on our face, which can act in our world by distracting us. We may, once again, be spellbound by this soul that can send ringing and visual orders to which we must obey, making the device dangerous during any human activity.

The *Glass* allows omniscience and causes, despite its design flaws, a magical feeling for the user. In addition to giving us the ability to communicate with others, it shares us information about our environment, interesting places and weather. Other digital objects are specifically designed to analyse the environment, and will be the focus of our next study.



Fig. 46 - Samsung S5 smartphone

Fig. 47 - Examples of Samsung S5 icons





Fig. 48 - The Google Glass



Fig. 49 - How a Google Glass would be used

Fig. 50 - Alberich dons the Tarnhelm and disappears, Arthur Rackman, 1910, Illustration *Das Rheingold* by Wagner



Objects analysing the environment

The first object we will study guides us in our travels: the GPS or *Global Positioning System*¹⁷⁰ used for example by the *TomTom* system¹⁷¹ (fig. 51).



Fig. 51

On Peirce's first level, the *TomTom* is composed of a box, buttons and a touch screen which, once lit, displays a map. When we move, an arrow is displayed to indicate which direction to take, what path to follow. An option is given to the user to add sound, a voice that describes the route as well as gives alerts.

The map is repositioned to inform us of upcoming turns. To calculate the route from the pre-loaded map in its memory, the user needs only to indicate his or her final destination. Using localisation to find the starting point, the GPS calculates the shortest route between these two points. In view of the information presented by the *TomTom*, in addition to the routes, it is assumed that the memory also contains information on the location of tolls, danger zones (formerly speed cameras) and other points of interest for the traveller.

Knowing the GPS system, and using Peirce's second level, we know that above the box is a constellation of satellites that are involved in this localisation. We travel looking at a graphical representation of the world around us. These cards give the traveller a direct route

170 GPS, [en ligne], <http://www.gps.gov/>

171 *TomTom*, [en ligne], http://www.tomtom.com/fr_fr/

to his or her destination by displaying the road names and numbers. Will Pavia from *The Times* comments on this:

Motorists following Google Maps through Wiltshire may be told to “exit on to the A303 toward Andover”, but they may have no idea that they are passing Stonehenge.¹⁷²

The GPS' user will not have the opportunity to discover the remarkable sites that he or she crosses. Due to the *TomTom's* automation, the user will never feel the need to buy a paper map that will require him or her a constant switch between it and the road. There seems to be a loss of context for the traveller; a vacuum forms in his perception of the world between the starting and arrival points.

Indeed, when driving while being guided by the voice and screen, the user only has the reflex to make sure he or she is safe behind the wheel and complies with road traffic laws. In addition, the *TomTom's* interface needs to be simple, to facilitate a quick understanding. The traveller will have less of an incentive to look around to identify the landscape's remarkable elements that could guide him to his or her destination (*fig. 52*).

We could say that the GPS tends to disenchant the user. However, if we look at it on an indexical perspective, we can see the use of magical thinking. By studying the unit in this way, we will highlight notions of wonder. First, the GPS seems to contain the world. Although it first needs to download a collection of maps, when we are heading to an unknown place, the system can still



Fig. 52

172 PAVIA Will, « Heritage wiped off the map as sat-nav puts motorists on road to ignorance. », *The Times*, 29 août 2008, [en ligne], <http://www.thetimes.co.uk/tto/news/uk/article1927000.ece>

guide us. Moreover, as the *TomTom* shows what the eye does not see and what we can not predict, it changes the human body's perception abilities by making us omniscient. The object itself, also, becomes omniscient.

Some GPS systems have automatic updates included. Thus, when new roads are built or new danger zones installed (radars), the *TomTom* knows. This could make us think of many magic items that are larger inside than out, such as Mary Poppins's bag (fig. 53), Doctor Who's police box *Tardis* (fig. 54) or the Chronicles of Narnia's wardrobe (fig. 55).

In this larger in than out box, you can also hear a voice. We are no longer solely guided by the map's graphics, but also by audio instructions. The actors' voices are usually recorded to simulate a normal conversation. Hence we have the impression of having a small omniscient being sitting on the car's dashboard. When it is not automatically updated and the roads are changed, or the user decides to take a different route than the one suggested, he or she may get lost. The excuse usually given is: "There was a problem with the GPS." Just as our response to conversations that displease us on the phone, we tend to incriminate the object first, then the person who has not used it properly.

The *TomTom*'s function is to indicate the traveller's route. It analyses only one aspect of the human environment. There are, however technological objects that include other aspects. An example is the *Mother* (fig. 56) by Sen.se, created by Franck Biehler and Rafi Haladjian, who also invented the *Nabaztag*¹⁷³.



Fig. 53



Fig. 54



Fig. 55



Fig. 56

At a first glance, *Mother* is a system composed of a white plastic figurine and small coloured capped plates. After reading the instructions, we learn that we need, in addition, an external device to view information that *Mother* will produce. To use *Mother*, choose the object you want to analyse, assign it a coloured plate and attach it to the object. Thus, again according to its manual, the *Mother* system can help the user control his or her coffee consumption (fig. 57), teeth brushing or even door passage.



Fig. 57

Like the previously analysed *Cue*, *Mother* uses data-vision, allowing us to quickly interpret a set of data which can be complex to study. The colour plates are sensors that send information to the central figure, the *Mother*. The information is then sent to an application. These sensors, called *Cookies* by Sen.se are described by the site as multi-functional. We can hypothesise that each *Cookie* contains a collection of different sensors such as thermal or an accelerometer. The site explains that every *Cookie* analyses all that is going on in the house. Only when the user has assigned a function to *Cookie* through the application, the information will be sorted through.



Fig. 58

Using of *Mother* seems very simple. It is a bridge between the household's objects' movements and their users. *Mother* turns the house into connected home. More than any other objects studied, it seems to use many codes of magical thinking.

This figure seems to refer to the prehistoric statuettes of women such as the Venus of Hohle Fels (fig. 58 and 59). Like these antiquities, *Mother* has a simple but distended shape. Thanks to the drawn



Fig. 59

two points and line, one recognises a face, and a head is suggested on a well rounded body.

In addition, this statue is at the centre of the system, without it the user will not receive any information. It seems to have the same magical abilities as the Venus: a family protection amulet. This hypothesis is supported by the system's name: "mother", the member of the family that usually represents care and protection in the household.

It therefore seems to have an animistic propensity, another little soul who has knowledge of what is happening throughout the house, which protects and improves the quality of life. This is reinforced by the fact that the face of the figure lights up when it receives data or wants to inform the user that new data is available. *Mother* communicates with us through light and sound signals (fig. 60). Its eyes and smile light up, while issuing a chime, and, thanks to a paid service, can trigger a phone-call. Furthermore, the system creates new rituals, we regularly read the data sent by the *Cookies*.



Fig. 60

However, this "mother" cannot work alone. It is surrounded by other small creatures that informs her what happens in the home. All these *Cookies* function identically, they seem to be able to determine their own use. Communication protocols between *Mother* and *Cookies* are not visible.

Mother appears to satisfy Roses quoted desire:

- Omniscience, it generates the user's, and knows what is going on around the house.
- Telepathy, it informs the household members' position with the locator *Cookie*.

- Immortality, helping to improve their surroundings.
- Conservation by warning of unusual opening and closing of doors.

The objects studied are examples, amongst others, of systems incorporating digital components. Most closely follow magical thinking codes on an indexical reading level. They allow us to realize that we are in fact much more enchanted by their use than we thought.



Fig. 51 - GPS by TomTom



Fig. 52 - Using a GPS may stop you from seeing Stonehenge.



Fig. 53 - Mary Poppins' bag.

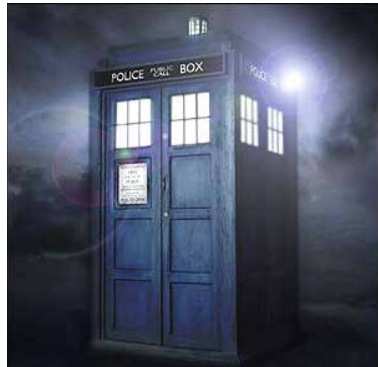


Fig. 54 - The Doctor Who Tardis



Fig. 55 - The Chronicle's Of Narnia's wardrobe



Fig. 56 - Mother by Sen.se



Fig. 57 - Showing coffee consumption



Fig. 58 - The Mother figurine



Fig. 59 - The Hôhle Fels Venus



Fig. 60 - Mother lit-up.

Conclusion



After the analysis of different technical objects, we can see that magical thinking is based heavily on the misunderstanding of the latter by the user. If we really wanted a full explanation of how they work, we need to remember the quote by the astrophysicist Carl Sagan: "If you wish to make an apple pie from scratch, you must first invent the universe."¹⁷⁴ We would need to start from the Big Bang to have a complete explanation of technical objects, but no one has all the necessary knowledge to understand everything. It is for this reason that systems used have their uses and features explained.

We have found that the digital objects that have interested us are composed of multiple components, which have been designed by different people. These designers will not have all the scientific knowledge to explain everything in a device. Science itself is yet able to answer all the questions we ask. Indeed, research, although very advanced, has not yet discovered everything about our world. Some discoveries refute the assumptions that we thought already demonstrated.

An example is the popular belief that Viking helmets were horned. It was recently discovered that this belief comes from a mistake during an archaeological analysis which then spread to Western culture, for example through the *Tarnhelm* in *Der Ring des Nibelungen* by Wagner. Today, archaeologists have found evidence to indicate that Viking helmets were destitute of horns¹⁷⁵. We cannot be certain of our

174 SAGAN Carl, *Cosmos* [1980], Random House, 2013, p. 485

175 J. P. P., « Did Vikings wear horned helmets? », *The Economist*, 15 février 2013, [en ligne], <http://www.economist.com/blogs/newsbook/2013/02/economist-explains-did-vikings-wear-horned-helmets>

knowledge, we must rely on other types of analysis to understand the world.

Faced with certain types of technical objects, we choose to stay in a state of ignorance and naiveté. As Peter Parker, also known as Spiderman, was taught: "With great power comes great responsibility."¹⁷⁶ However, as many dogmas, laws, quotes tell us, knowledge is power. We do not seem ready to take on such a responsibility. This would allow us to remain in a state of wonder, a much more comfortable feeling.

These states are grouped together in a form of understanding the world that Susca called magical thinking. As we have found out, that thought seems to be in all of us and manifests itself in different forms at different times during the use of technical objects.

According to Rose, wonder, and thus magical thinking is one of the basic human desires. The rationality of science, sociology, anthropology, and other forms of research using Cartesian methodology is not sufficient enough to satisfy our needs to understand the world. Some people need to be reassured, they like to think we are not the only conscious beings in the universe. Through our technical objects, we try to contact other souls, deceased, aliens, divine, or simply immaterial.

Like religion, wonder gives another dimension to our lives, a feeling of being part of something that transcends us. We might even know what we become after our deaths. Magical thinking enables us to overcome the physical limitations of our bodies.

176 LEE Stan, « Spiderman », *Amazing Fantasy*, n°15, 5 juin 1962

With our technical objects, we discover new powers such as omniscience, telepathy or even regeneration. These objects transform the human body, or at least the relationship we have with them, and become the «extensions» noticed by McLuhan. Like the sword extends the arm, connected digital objects extend not only our bodies but also our feelings and emotions. With these objects, we have moved from the Information Age, created by the Internet, to one of sensations. This, according to Susca, is already being felt in the way we talk about when we say, “Je ne le sens pas ce type.¹⁷⁷” As with Audrey Breuer and her connection to objects, we also seem, in a less emphatic way, to look for a human relationship with our objects.

In order to get our desired relationships, the object must have a soul, a constancy in conscious beings. We have discovered that we have a strong relation to animism. The latter seems to exist throughout our History, with more or less intensity. Indeed, this thinking was one of the first to explain natural and human phenomena. Until the Industrial Revolution, many objects and appliances used were of paramount importance in people’s lives as they were expensive to make, difficult to replace, and often necessary for survival.

Today, we tend to discard and replace our objects more easily causing the loss of this relationship. However, digital objects, the most expensive of our consumer goods, retain an animistic aspect, not only through the intimate place they hold in our lives, but also by their autonomous functions. They demand our



177 *Place de la Toile*, op. cit., 2013, «I do not feel this guy.»

attention and we provide the information requested. Animism and autonomy could not be possible without the participation of mystical forces such as electricity or Wifi. They not only animate objects but also allow them to communicate with each other.

This animism comes from magical thinking. As stated by the definition from *Trésor de la Langue Française*, magic includes a notion of ritual. Thanks to actions taken in different ways at different times, one can induce reactions from technical objects, for example. Either through the desire of the designer or the re-appropriation of the object by the user, rituals abound in the objects we use. At times, like Skinner's pigeon, we create rituals when we do not understand the reaction of the object and we wish it to return to the state we consider normal, or the continuation of this reaction. By repeating this ritual on the object, even if it does not work the first time and the device still does not react the right way, one has the feeling of taking control. We seek a sense of control over our objects. It sometimes escapes us, and we find ourselves in its grip instead. At this time, we are no longer amazed by the magic it produces, but bewitched by its features which includes sound and visual orders.

Rituals, animism, wonders, are just some of the words included in the lexicography that describes technical objects discovered during our analysis. All are part of the same mindset, magical thought. However, we do not use the same definition as that proposed by Lucien Lévy-Bruhl¹⁷⁸. Beyond our present research, magical thinking is not just a form of

178 LÉVY-BRUHL Lucien, *La Mentalité Primitive* [1922], Champs Classique, 2010

unbalanced thinking, a residue of primitive times. Having indeed an archaic origin, it has nevertheless evolved with technology, allowing us to explore other forms of explanations of the world. According to Susca, we no longer live in the dark arts of the Middle Ages or the Renaissance, but in everyday magic that we are rediscovering¹⁷⁹. As we have learned from Lyotard and Latour, we have never been modern, and therefore completely rational as desired by Descartes. Furthermore, we have, for most of us, this form of magical thinking ingrained in us.

Due to the historical importance of this mode of thought, we will not be able to escape from it just yet. Some designers have realised this and are trying to create wonderful objects rather than bewitching, in order to remove the stress that some digital objects cause. As a graphic designer, product designer, or culinary designer, we should be looking at our creations asking ourselves how the user, the viewer, or gastronome would feel the sense of wonder, a sensation that will replace incomprehension. According to Susca “The designer expresses out loud what we live everyday without being truly aware.”¹⁸⁰

It is up to us, as designers, to create this new magical world.

179 *Place de la Toile*, op. cit., 2013

180 *Ibid.*, translated from French by the author: «Le designer exprime à voix haute ce que nous vivons sans en avoir véritablement conscience.»

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Annexes



Three questions to Nicholas Nova

J.L. : As for the medium I interviewed: What is your relationship with objects?

N.N. : Like everyone else, I have first a user relationship of objects around me, but it is combined with a strong analytical interest in them. In this regard, it is less their mechanism and operation that interests me but rather the way they convey norms, ideas, aesthetics, a story (evolution over time), or functions diverted by other users that fascinates me. Thus, for some of the objects that particularly interest me, I use a very “documentary” way of thinking about them: taking photographs, accumulating documentation related to their existence, use and development, etc.

J.L. : According to you, are there items that have magical properties? If so, which ones? If not why?

N.N. : I see less magic in its classical definition. For me, objects have a special appeal, which continues to amaze me, in the sense that they cross time and vehicle through them individual elements (potential use, aesthetics, history)... that we can reconstruct through genealogies and circulations. I do not know if that answers your question, if it is magic it's a kind of transcendence that fascinates me. For instance, follow the path of a medieval Europe washboard to the Southern United States and find it today used as an instrument on stage is an interesting case. Here we see a movement and a fascinating diversion.

Moreover, in the digital field (which is the one that concerns me the most), it seems to me that objects become increasingly complex... and suggests a function or behaviour which falls within the areas of magical beliefs and animism. I'm not sure it is a good thing, but it is a curious and prominent phenomenon. That may be the revival of wild thought towards technical objects which have become so complex that they are inexplicable.

J.L. : What is, in your opinion, the influence of electricity and other mystical forces (such as Wifi or even nuclear) on the Designer's imagination?

N.N. : I do not think we should call them "mystical" because it is a polysemic term. However, I see what you mean, there is here the idea that a complex technical operation can exert an attraction, a curiosity (or refusal) among designers ... and suddenly offer curious proposals. In any case, it seems that designers (and artists) seize these objects without necessarily understanding the details of their operation, but in the best case, produce objects, interfaces, services or facilities that can question these techniques ... or make us attentive to their concerns. (And beyond this, create innovative commercial products or services).

There must be a form of fascination with these intangible objects, and the quality of a designer's contribution comes from a creative synthesis between technical issues (not necessarily always 100% understood) and contexts, uses...

