INTRODUCTION: BORN TO BE (VISUAL) STORYTELLERS

Usually we think that stories are a separate part of our daily life, but we actually are literally born to produce and consume stories. As Jonathan Gottschall wrote at the end of his book, “[p]eople don’t go to story land because they want something startlingly new; they go because they want the old comforts of the universal story grammar” (2012: 212) and, before of that, “[f]iction, like cocaine, is a drug. People may invent high-minded aesthetic (or evolutionary) justifications for their fiction habits, but story is just a drug we use to escape from the boredom and brutality of real life. Why do we go to see a Shakespeare play, or watch a film, or read a novel? Ultimately, from Kessel’s point of view, it is not to expand our minds, explore the human condition, or do anything else so noble. We do it for kicks” (2012: 47). Stories, and our capacity to produce them, are important to our minds because they help us to organize our experience with the word and with ourselves. Besides, we can consider narrative as a real skill of the human species as, e.g. the opposable thumb is (Cometa, 2017).

Among all the existing kinds of stories that we consume every day, we want to concentrate on visual stories, i.e. those that are transmitted through a pictorial and figurative form. This is a very ancient attitude, well grounded in our biocultural history. We have been making pictures for at least 32,000 years, and the reason we do it is probably connected with our necessity to produce stories by externalizing our inner visions (Malafouris, 2007, 2013). This research repre-
sents a part of a larger research concerning the extending role of pictures for our cognition (Noë, 2011; Belting, 2001): pictures are a very particular kind of sensum datum, they are not just a percept that we see, they are the most effective kind of virtual environment where fictional lives can be represented. The concept of “presence in absence” can easily summarize what we stated. Thanks to their particular conception, pictures empower our vision and give a visual substance to our thoughts, or better, they are able to shape our mental imagery (Fingerhut, 2014).

A real, substantial and ground-breaking step forward in this creative process occurred when pictures became mechanical, 178 years ago, after the invention of photography. Since then, media studies have deeply investigated the way through which visual media—like movies, photographs and recent digital products—have influenced our experience. Visual media have shaped our imaginary, as Francesco Casetti’s work has clearly demonstrated (2005), as well as our ability to engage emotionally with characters on the screen (Smith, 1995, Gallese, Guerra, 2015; Eugeni, D’Aloia, 2014; Carocci, 2014).

TIME IS THE GUILTY PARTY

Because of their simulative ecological characteristics (their capacity in simulating different ecologies?), pictures have a high degree of similarity with reality and what is important for real life is just as valuable for pictorial perception. We would like to focus our analysis on a particular kind of mechanical picture based narrative story: TV series. TV series, as Veronica Innocenti and Guglielmo Pescatore pointed out in their book (2008), are a mish-mash of quite different visual products. But the difference is not confined to seriality only: as stated above, visual narrative stories have been strongly present since the beginning of mankind, so we tried to categorize different forms of storytelling, attempting to do a sort of archaeology. The result is synthesized in the following table: rock art/painting; novels; comics; cartoons/ anime; visual fanworks; movies; movie sagas; TV series; videogames, politics (as a case of mediated event). Criteria we have adopted in order to create this list are simple: we collected different types of visual products characterized by both “subject persistence”—i.e. the persistence of the fictional character in the narrative development—and “visual feature”—or the fact that the stories are told visually. Moreover, in this table we have detected seven different variables that characterize the experience of serial narrative fruition.

Table 1 also shows how visual media are composed and how much the time variability affects them. We highlighted what kind of changes we can appreciate in an image, still or moving, after a long-lasting exposition. We think in fact that it is not possible to follow the psychological growth of a character in a single painting, while this is one of the things that matter the most in a TV series. We also noticed how images can be influenced from what happens in real world, even when they just want to tell a fictional story (i.e. fanart creation is strongly influenced by the existence of a reference fictional world). We also introduced “news” as a specific case of naturally counterfactual dependent story: these kind of visual products are stories in a certain way, but they show natural counterfactual dependency, i.e. if something happens in real world, then they change correspondingly (Walton, 1984; Currie, 1995). The summary shows that TV series satisfy more than any other visual story criteria for a deep and cognitively interfering engagement. In the next paragraphs, we will try to offer a distinction of the kinds of time involved during TV series fruition, and therefore the mnemonic consequences of such an engagement.

FRUITION AND ELABORATION TIME

Memory is a reconstructive process (Perfect, Lindsay, 2013). We don’t have a store of informa-
tion that can be accessed, consulted and left unaltered; if anything, memory is like a consciousness re-lived and the degree of selective attention that usually characterizes conscious experience characterizes memory recall as well: “Recollection is a conscious process which involves reinstatement of an event from memory along with contextual details and an accompanying sense of self” (Sadeh et al., 2014). Due to an inevitable estrangement from the lived event, during this process we might slightly change our memories; the more we remember, the more we risk inventing. So time is a crucial component for the insurgence of memory/reality misattributions.

The main, and perhaps most obvious, difference between a movie and a TV series is their screening time. We believe that this difference has to be considered when we discuss how fictional media can have a weak or a strong impact on our cognitive system. In fact, the more we are exposed to a medium, the more we get influenced. A movie has a beginning and (most of time) a clear ending, and requires the spectator an established amount of time to be watched. Instead, TV series have of course a beginning, but their endings are postponed episode after episode and season after season. TV series authors play with our nature of curious human beings that need to know how a story ends.

When we talk about audiovisual content, we distinguish *fruition time*, that is the duration of the episodes, from *elaboration time*, the time that, consciously or unconsciously, we use to interpret and file what we have watched in our memory. This kind of time can be the interval between one episode and the other (generally a week) or between

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Tabla 1. Características de los medios visuales. Leyenda: 0 – ausente; 0.5 – presente de forma parcial; 1 – presente.
a season and the other, and sometimes it can last even for a long time after the end of the TV series.

Fruition time is simply the time spent watching the visual product. It is thus pretty clear that TV series need a lot of time, especially if compared with movies. It is cognitively meaningful that a visual product may last 50 hours or even more. Besides, and this is a crucial clarification, not only do we watch long-lasting visual products, but such an amount of viewing is distributed throughout the years, so we start viewing a show and we watch it many times during our personal and biological development. We are obviously aware that recent technologies have changed our viewing experiences, giving us the possibility to choose how many episodes to watch and when to do it, but in this paper we have decided to take into consideration just the traditional TV series watching experience, made by single episodes weekly released by broadcasters. By watching something that goes on for years and years, we assist the physical and psychological growth of both characters and actors, and, in the end, we know them and their story in the same way that we know those of our friends or relative. This contributes to our empathizing with their vicissitudes and feeling affection for them. At this point, it does not really matter that they are not real characters, because we are involved in their stories and we want to know how they are going to solve their problems. It may happen that we find similarity between those fictional story and our memories and we automatically look for a strong identification with them. This may help the embodiment of the fictional media, since it is easier to categorize and understand it if we can confront it with other experiences we had.

Movie sagas may be the only kind of audiovisual product that could be considered similar to a TV series, but their distribution is not as cyclical as that of TV series. Most of the modern sagas also belong to narrative universes that are composed of different media (e.g. the Marvel world is composed by comics, cartoons, videogames, movies and TV series). It could be said that the experience of a movie can be repeated and then becomes cyclical but, in this case, the product will always be the same, as it is for Cecilia in The purple rose of Cairo (Woody Allen, 1985), and it has no new elements or character development. In fact, rewatching a movie can only help us to catch elements that at the first viewing were lost or to give us a better understanding of the story. At the end, however, we add nothing new to characters’ psychology or to their development, while this process in TV series is always ongoing, like pieces of a puzzle that the viewer is called to construct.

The assimilation of a TV series is a process that is renewed from episode to episode, adding details to our knowledge about the plot and the characters and that influences our experiences. We also suppose that the difference of time effects on memory between other visual media and TV series depends not only on the fruition time (short term story vs long term story), but also on the fact that it is cyclical and assumes the characteristics of a ritual to which we are not capable of giving up. In the empty time left, we don’t get detached by the product, because of the elaboration time. After the vision, in fact, comes the time in which everything we have watched is assimilated by our memory. We talk of elaboration time when we examine the time that we spend after (and sometimes before, thanks to paratexts such as promotional photos, trailers, videos, etc.) we have watched an audiovisual product. In psychological studies this phenomenon is known and discussed as Post-Event Information (PEI) and is
considered highly responsible of the insurgence of false memories and source misattributions (Ferree, Cahill, 2009). As Bruun Vaage (2014) argues, long TV series allow spectators to create strong bonds with the story and, of course, the characters. Because of this bond, we can experience fictional worlds as if they were real. Horton and Wohl (1956) defined this bond as a “parasocial relationship” and, of course, it is possible that an individual establishes it even with a movie character. It happens in Woody Allen’s movie The purple Rose of Cairo where this psychological bond becomes real and the main character, Cecilia, falls in love with her favorite movie character who, breaking the fourth wall, emerges from the black-and-white screen into the real world.

Elaboration is not always just an individual process. It might happen that people get involved together in the interest for a cultural object: the most passionate form of this aggregation is called fandom (Jenkins, 1992; Hills, 2002; Scaglioni, 2006). It works as a construction of a virtual world where it is possible to share and elaborate emotions that come from any cult object. In the case of a TV series that goes on for years, fandom is particularly stimulated to stay alive because of the subject persistence, that, as we saw in the scheme, is not present in every kind of media that we examined.

Collective elaboration of audiovisual products helps media engagement on two sides. The first one is strictly connected to the commercial survival of the product: if people share it, talk about it and get attached to it, it is probable that it will go on for more than a single season. On the other side, the fact that people share paratextual or fan-made information, especially in a fandom context, has the effect of stirring memories of what we have watched, further increasing the persistence value. Besides, the creation of fan-made works based on a fictional product helps to let it be alive and to become an important part of the viewer’s life that, with this cognitive play, can extend the pleasure they felt while they were enjoying it. It is obvious that the subject persistence of a TV series allows longer time of elaboration and, for that reason, we can suppose that our memories and knowledges are more easily influenced by them. There is definitely a connection between a viewer and its favourite TV series and, as time goes on, it becomes stronger and harder to cut (when a TV series ends or is no longer produced, is sometimes very hard to detach from it). The next step is to try to establish how our memory can be influenced or even mislead by fiction facts.

THAT WAS TRUE... I GUESS! SOURCE MONITORING FRAMEWORK AND FALSE MEMORIES

Today we know, as we will try to demonstrate, that reality and fiction are conceivable to our consciousness as two sides of the same coin. Source Monitoring (Johnson, Hashtroudi, Lindsay, 1993) is a model explaining how human beings manage—more or less consciously—the origin (the source) of either a given perceptual datum or an imagined thought. More precisely, according to the source monitoring framework, there are at least three important types of source monitoring: internal-external reality monitoring, external source monitoring, and internal source monitoring. We might say that Internal-External reality monitoring is the general ability to distinguish reality from fiction, or personal thoughts from perceived events; External Source Monitoring refers to the ability to distinguish if a specific fact was told by A or B; Internal Source Monitoring, on the contrary, allows the discrimination of what one thought from what one said.

Source monitoring is strictly connected with other mnemonic states, such as false memories. Generally these mechanisms work well and are very important for our daily lives, but sometimes they fail and lead us to make mistakes, which are
not pathological or uncommon, but absolutely normal. Today, as one can easily imagine, the growth of media exposure has hugely complicated the work that our cognitive source monitoring has to do, and has consequently increased the occasions of source misattribution (Sparrow et al., 2011).

We have selected three failure cases that we consider appropriate for our discussion: cryptomnesia; incorporating fictions in facts; false memories and visual media. “Cryptomnesia is inadvertent plagiarism that occurs when a person produces something and believes that it is original, self-generated product of the moment when, in fact, it was perceived (or generated) earlier” (Johnson, Hashtroudi, Lindsay, 1993: 13). This case is phenomenologically clear to all of us, especially for scholars who believe they have had a very brilliant and original idea just to discover that it was not so original.

Incorporating fictions in facts goes directly to the core of our issue. As it is reported in the article by Johnson et al., incorporation effects happen when any fictional account becomes general knowledge; more precisely, a fiction becomes a fact when its source is not “compartmentalized,” i.e. when the subject is not able to recognize, remember, or detect the source where the information comes from.

But the closest experimental repertoire to our matter is probably the one concerning the insurgence of false memories, especially those coming from picture related experimental tasks. What are false memories exactly and how do they work? There are a lot of researches focusing on false memory effect (for a review see Newmann, Garry, 2013) that show how frequently and easily we generate false memories relative to an event perceived directly or via contemporary media.

Since the early 2000s many research groups have been working on the effect that photographs have on the insurgence of false memories. The pioneer article by Wade et al. (2002) suggested—and successive research articles seem to confirm this point—that photographs can alter autobiographical memories, not only by modifying pre-existing memories, but by provoking completely new ones, perceived by the subject as real events they never actually lived. The experimental procedure was simple: pictures of their own childhood were administered to the subjects, and altered in such a way that the original picture was mounted into a fictional scenario (in this case, a hot air balloon ride). After exposure, the subjects were asked three times in a timespan of three weeks if they remembered the event: a false autobiographical memory occurred when subjects declared not only that they remembered the event, but also when they added further information not portrayed in the picture (for a review see Parisi, 2015).

The insurgence of a false memory is strictly connected with the personal experience, meaning that the distortion process of a given remembered fact depends on one’s own general knowledge of the world. We would like to understand to what extent the inverse process is also valid: is it possible for fictional events to alter our general knowledge of the world? What kind of sources are more suitable for this effect and why?

**PICTURES IN THE BRAIN**

A possible answer to the last question stems from the studies on mental imagery. Mental imagery is the ability of human beings to visualize “with the mind’s eye” (Kosslyn, 1994) previously lived experiences. We are obliged to superficial-
ly treat the issue, that was much debated during the 90s in cognitive science literature, especially with respect to a point: the representational format of mental images is linguistic or picture-like? (Tye, 1991; Kosslyn, 1994; Pylyshyn, 2002). After more than 20 years of vigorous debate, the picture-like hypothesis seems to be the correct one, and the argument adopted to justify this choice is relative to the fact that brain visual areas (areas computationally involved in visual perception) are also active during mental imagery tasks: if a subject sees an object or the subject mentally visualizes that object, we assist to a partial overlapped activation of brain areas responsible for perception (Ganis et al., 2004; Pearson, Kosslyn, 2015, Naselaris et al., 2015).

But this is not the whole story: what’s the relationship between mental imagery and picture perception? What we have just said is relative to natural perception, but the discussion should take into account the role of pictures for mental imagery. A possible answer, briefly presented here, might be the one given by the philosopher Evan Thompson (2008). The author tries to sketch a phenomenological account of mental imagery for picture perception by distinguishing four different cognitive functions: on one side we have perception; on the other, there are side picture-viewing, remembering and imagining. He argues that while perception is the only one among these cognitive functions which is presentational, picture-viewing, remembering and imagining are re-presentation (Thompson, 2008: 405), even though only picture-viewing is both presentational and re-presentation: when we look at a picture, in fact, we see both the physical vehicle where the picture is impressed and the absent pictorial subject. When we remember or imagine something we don’t experience, something like a picture with our mind’s eye, but “we could say that to visualize X is to mentally re-present X by subjectively simulating or emulating a neutralized perceptual experience of X” (Thompson, 2008: 408). With “neutralized perceptual experience” he means an experience whose factuality is not necessary: it can be real, fictional or imagined.

In other words, imagining and remembering are quite similar cognitive abilities, with respect to the simulation/emulation of the visualized object, but they differ with respect to their phenomenological and doxastic implications. However, we have argued that the phenomenological distinction between remembering and imagining may be seriously compromised by source misattribution, so we can be phenomenologically convinced that we are experiencing something by remembering it when instead we are actually imagining it. Or, at a different level, we may be convinced that we are remembering a real fact while we are remembering a fictional one.

**IS IT POSSIBLE FOR FICTIONAL EVENTS TO ALTER OUR GENERAL KNOWLEDGE OF THE WORLD?**

Mental imagery and picture-perception are strictly connected, because experiencing mental imagery and experiencing pictures are both representational experiences. The decisive consideration about this point comes from psychological literature, where many articles highlight that both pictures and mental imagery have an important role in deflecting our phenomenological capacity to attribute its own correct arrangement to a source (Nash et al., 2009).

The role played by imagery is crucial for misattribution: “A typical study investigating this phenomenon requires participants to indicate in a questionnaire whether they remember experiencing various events as a child (e.g., were you ever bitten by a dog? Did you ever find $20 on the street?). They are later asked to imagine experiencing some of these events that they initial-
ly said they did not experience. Some events are imagined once, some several times and some not at all. After the imagery task, when probed about what events really happened in their childhood, they reported greater confidence in having experienced the events that they were asked to imagine, with confidence increasing the more times the event had been imagined” (Henkel, Carbuto, 2008, emphasis added).

However, even though research suggests that something like a “picture-superiority effect” and “sound-superiority effect” occur in recall tasks, probably because of their similarity with natural and ecological percepts experienced in real life situations, narratives also play a crucial role in reinventing source information (Mulligan, 2013; Garry, Wade, 2005). In all cases, indeed, time seems to be the most important variable for the process of misattribution. Not only does temporal estrangement from the perceived event increase the risks of confusion considerably—this is quite obvious and biologically plausible—but Post-Event Information (PEI) also produces the same effect. Experimental and philosophical data do not give us a definitive answer for the effects of visual enduring exposure. Studies on mental imagery and false memories strongly suggest that visual products play a very important role in source monitoring failures, but this is not enough to state a superiority effect.

What seems clear from the recollection of the experiments is that a false memory emerges when we forget something, so that we are paradoxically influenced by what we don’t remember. Therefore a freed, intense aesthetic experience could facilitate a better memorization of narrative facts, more than a distracted and low-engaging news consumption. However, the implicit knowledge that news represents actual stories (counterfactual dependency) might push us to consider it as trustworthy and more related to actual events, and as a consequence, as a better candidate to be transformed by our mnestic recall in general knowledge.

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IDENTIFICATION, MEMORY, ELABORATION.
THE IMPORTANCE OF TIME IN THE CONTEXT
OF THE TV SERIES FRUITION

Abstract
Starting with the assumption that mechanical pictures have had the biggest impact on pictorial narration Homo sapiens has ever engaged with, in this paper we will try to collect some evidence in order to summarize what we nowadays know about the effects of a long-lasting mechanical picture exposure. The main hypothesis is that TV series are powerful storytelling products that alter the cognitive mechanism—known in literature as “source monitoring”—that allows the distinction between reality and fiction.

As perceivers, we engage in a perceptual relationship with pictures surrounding us. They employ a visual retroactive effect on our cognition, namely memory alteration effects that may be elicited by both ethic and aesthetic judgments of perceivers: what would I have done in her shoes (ethical judgement)? What would I have felt in her shoes (aesthetic judgment)? We will argue that the time needed for TV series fruition is the most important variable for this psychological phenomenon. More precisely, we distinguish between fruition time and elaboration time. By proposing a comparison between different visual media products, we will show both experimental data and philosophical arguments emphasizing the role of long-lasting picture exposure and visual feature of tales for the insurgence of source misattribution. More importantly, we will furthermore try to address the role of mental imagery in this scenario, showing how the phenomenological correspondence between mental imagery and picture perception, along with the normal process of mnemonic retrieval, are crucial for the occurrence of source misattribution.

Key words
Fruition time; Elaboration time; Source misattribution; Mental imagery; Memory; Post event information.

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principal areas of interest concern media theory with particular attention to visual culture, investigated by adopting a cognitive approach. In this scenario, media impact on human life can be better understood departing from the comprehension of the cognitive possibilities of an embodied and extended agent.

**Article reference**

Francesco Parisi es investigador en Cine, Fotografía y Televisión en el departamento de Ciencias Cognitivas de la Università degli Studi di Messina. Sus principales líneas de investigación se basan en la teoría de los medios, con particular interés en la cultura visual, adoptando una perspectiva cognitivista. En este supuesto, el impacto de los medios en la vida humana puede ser mejor entendido partiendo de la comprensión de las posibilidades cognitivistas de un agente encarnado y extendido.

**Referencia de este artículo**