

The movie of emotions: An experimental lab-lit novel

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We present the experimental structure of the book *Il film delle emozioni* ('The movie of emotions', 2007), which makes an attempt at using a narrative structure for communicating the most recent scientific knowledge relative to the functioning of the brain (the amygdala) and, particularly, to emotion management. This book can be defined as an essay on emotions in the form of a novel, or as a laboratory fiction novel (lab-lit). The book is borderline literature that mixes registers and genres: the novel, an autobiography, a scientific paper about emotions, a diary, an emotional trainer, rich of link and bibliographic references, but also a manual on how to live. The book structure is composite: is not divided in chapters, but is a digital miscellany, made up of a variety of materials (i.e., computer files). A feature of the novel is that its structure is not causal, instead it is conceived and realized to convey the novel's themes and some scientific findings and theories, whose some examples will be given.

1 An original story

There is a growing trend of the use of literary techniques for the popularization of scientific findings and theories (e.g., Lloyd, 2003; vedi Eakin, 2003). The book *Il film delle emozioni* ('The movie of emotions'; Calabretta, 2007, second edition) makes an attempt at using a narrative structure for communicating the most recent scientific knowledge relative to the functioning of the brain and, particularly, to emotion management.

But the book is not a scientific essay on emotions in a traditional way. It was defined as “a happily unclassifiable book, therefore, an experimental one”. Since there is both one main character and narrative tension, perhaps the book can be defined as an essay on emotions in the form of a novel. Or it can be defined a laboratory fiction novel (i.e., “fiction set in the world of science”), according the “lab-lit” definition given by Jennifer Rohn (2006) on the journal *Nature*.

“Why can’t I decide to be happy?” - this is the question that encapsulates the meaning behind the story of Gabriele, the main character of the book. A young researcher who has come to Rome from the far south, and also the man behind important discoveries at Yale University regarding the evolution of the brain, Gabriele has huge emotional problems. Gabriele is a very particular researcher: is neurotic, deeply dissatisfied, dominated and full of fears. He wants for nothing, but feels deeply dissatisfied, demotivated and does not know why. He is, above all, obsessed with emotions: he wants to understand how they work and how they come about, what their rules are, what techniques can be used to regulate them, what effect they have on our well-being and on our thought processes. At a particular point in his life, Gabriele decides to learn to regulate his emotions, starting with a scientific study of the workings of the amygdala (an almond shaped, phylogenetically primeval structure, that triggers feelings linked to fear and anger).

The novel describes the several attempts of Gabriele to write the script of a movie for emotional training; in reality, it reveals itself to be the dramatization of interior, interpersonal and social conflicts of a scientist that desperately looks for happiness, and the dramatization of the creative process of writing. At the end of the novel, we know much more about the brain, about how emotions and feelings work, about how we can keep certain destructive impulses at bay, and we develop an almost hypnotic interest in Gabriel’s tormented research.

The book is borderline literature that mixes registers and genres: the novel, an autobiography, a scientific paper about emotions, a diary, an emotional trainer, rich of link and bibliographic references, but also a manual on how to live. The book structure is composite: is not divided in chapters, but is a digital miscellany, made up of a variety of materials (i.e., computer files): diary pages, sketches, e-mail exchanges, summaries of films, bits of the news, parts of film scripts, excerpts from scientific papers, jottings. Using the Enzensberger’s definition, the book is an example of an Alka-Seltzer novel, that as the tablet in water crumbles in thousands of narrative bubbles. Gabriele’s identity is a puzzle that the reader reconstructs by means of the accumulation of details scattered in

the narrative forms over the whole book (also in the appendix). It does not have the true structure of a novel, but can be read as a modern day one, fragmented and hypertextual. The computer files represents the extended memory and therefore an extension of the cognitive abilities of the main character. The book structure is also a metaphor of the way episodic memory works (the kind of memory that allows us to remember our personal experiences). It “is not a literal reproduction of the past, but is instead constructed by pulling together pieces of information from different sources” (Schacter & Addis, 2007).

This particular novel’s structure mixes the classical dramaturgical division in three acts with the chaotic features of our times. The book is a fragmented and modular combination of files. This original structure made up of text pieces pasted together without an apparent order represents a metaphor of the nature of modern man’s work activity plunged into technologies, that prevent him from concentrate and work on the same task more than 4 minutes, before being interrupted by emails or cellular phone sms. Moreover, the rapid succession of files that form the book recalls the work and free time activity of modern man when he jumps from different file of his computer.

2 An experimental structure

A feature of the novel is that its structure is not causal, instead it is conceived and realized to convey the novel’s themes and some scientific findings and theories, whose in this paper some examples will be given.

First example: the novel is structured with many conclusions that, through small adjustments, prepare and approximate the real conclusion. This slow approach to the conclusion is a metaphor of the book’s final message: the happiness consists in enjoying the small progress, improvements that we make towards the satisfaction of our desires.

Second example: the plot of the novel owns some properties of complex systems. In the book some principles of the theory of complex systems are implicitly considered:

- **emergence:** how do different levels (genetic endowment, environment, conspecifics) interact in determining the social and interpersonal behaviors of Gabriele?
- **adaptive behavior:** the main character changes behavior in order to overcome life obstacles; he reads and studies book and papers, tries new behaviors and tries to modify the features of the environment that are hostile to him.

- **creativity**: combinatory creation of new concepts in art and science.
- **(un)predictability**: Gabriele asks continually himself about his future and makes always wrong prediction.

The story does not present big events. Does nothing happen at all? In reality, as in complex systems, small perturbations (in the Gabriele's way of thinking) can cause big changes (in Gabriele's life satisfaction). In other words, Gabriele recovers from his emotional problems only when he becomes able to change the cognitive style of his thinking, from a way of thinking focused on future success to a way focused on enjoying the small results achieved during last year of his life.

During all the book, Gabriele tries to control the complexity of his world and he does it by writing and saving all what he lives and thinks in computer files: the result is a book structure that is branched, iper-detailed and fractalic. This complex structure converges in a linear end of the story in which it seems that Gabriele has reduced the complexity of his life to the simplicity and linearity of the ending message of the book. But this ending message is the awareness of the impossibility to control reality! From here, the book structure explodes again in the iper-detailed appendix.

Third example: the novel's modular structure reproduces the scientific results of a specific research on the evolution of brain modularity. In 1997 Calabretta and collaborators started an interdisciplinary research project on the evolution of modularity. Their evolutionary connectionist project was the first example where the origin of modularity was simulated in a computational model (Calabretta et al. 1997, 2000) and led to the discovery of a new mechanism for the origin of modularity: modularity as a side-effect of genetic duplication. The novel's structure is composite and recall this research findings: the book is a digital miscellany, made up of a variety of materials, which are *duplicated* and *specialized* with new meanings.

Fourth example: the flashback of the book structure refers to the functioning of amygdala on the genesis and impact of emotions. The reader of the book thinks that the structure of the novel is linear from a temporal point of view. At the end of the book, he understands that the whole story unfolds while on an hour long run in Aniene Park in Rome on the last day of the year, during which Gabriele has a flash back of the whole of the year that has gone by (2003). The same happens with emotions in our brain. For example, when you observe a person that you like, you think that you are projecting yourself in a future life together to that person. In reality, the amygdala compares the face of the person you like

with other faces of your past, stored in the emotional memory bank, then makes a split-second decision about the potential threat. As the book's structure, this is a sort of a flashback.

Fifth example: according to Daniel Wegner of Harvard University, fast thinking increases individuals' mood, self-esteem, feelings of creativity, feelings of power, and energy level (Pronin & Wegner, 2006). At the same way, the book structure with its continuous alternate of main character's thought and of styles of writing could create in the readers an increased positive mood, as confirmed by several readers of the book.

Sixth example: the novel was defined a hypertextual one. Why? The book tells the story of Gabriele. In the book there are not other main characters. In reality, the story of Gabriele is enriched by the characters of the movies cited in the book, with a multiplicative effect.

It was very hard to find a publisher interested in publishing this very experimental book, it took about two years of search: in fact, for scientific publisher it was little orthodox, while for narrative publishers was little narrative. Incredibly, after being published, the book was very well received by critics and readers and it was featured in numerous magazines, newspapers, national television shows, and reviewing sources. In spite of thousands of persons that downloaded the book for free, the first edition was sold out and very recently the second edition was published.

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