UNIVERSITY OF AMSTERDAM

UvA-DARE (Digital Academic Repository)

Before or beyond narrative? Towards a complex systems theory of contemporary films

Poulaki, M.

Publication date
2011
Document Version
Final published version

Link to publication

Citation for published version (APA):
Poulaki, M. (2011). *Before or beyond narrative? Towards a complex systems theory of contemporary films*. Rozenberg.

General rights
It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations
If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: https://uba.uva.nl/en/contact, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

UvA-DARE is a service provided by the library of the University of Amsterdam (https://dare.uva.nl)

Download date:23 Aug 2022

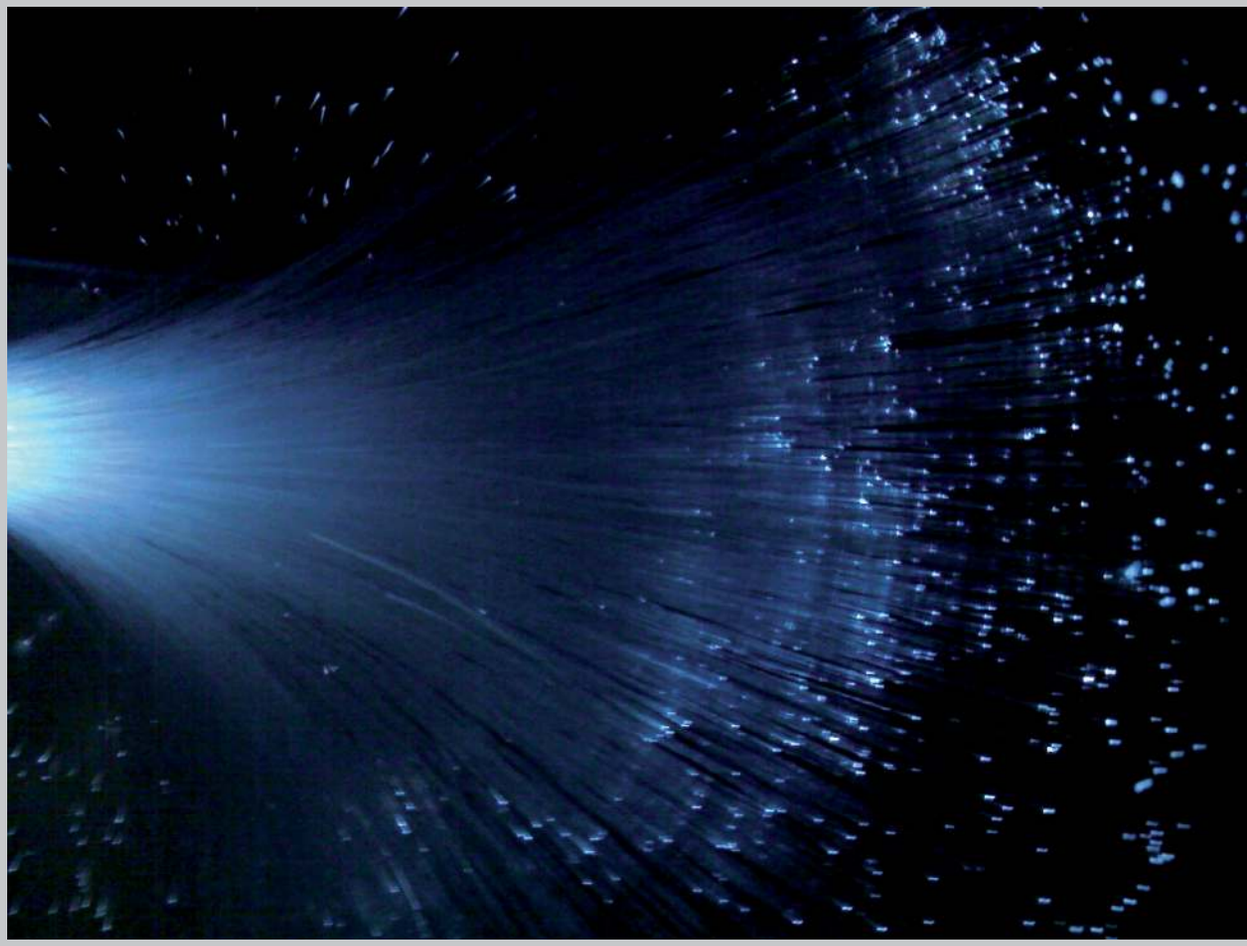
BEFORE OR BEYOND NARRATIVE?

Towards a complex systems theory of contemporary films

This book puts into focus the tendency for increasingly complex forms of narration in post-1990s cinema. The author argues that, because of the fragmentation and nonlinearity that contemporary complex films display—in all three narrative dimensions of time, causality and space—it is not enough to approach them solely as complex narratives. The notion of narrative holds onto an idea of coherency, wholeness and causal-temporal linearity of the story, against the backdrop of which narrative 'complexity' is defined. Instead, this book suggests a radically new framework for the analysis of contemporary narrative films, a framework able to shed light to the processes of organization that nonlinear systems follow. Tools from complexity theory are thus derived in order to address complex films as complex systems, and their dynamic forms of textual and cognitive organization.

BEFORE OR BEYOND NARRATIVE?

Maria Poulaki



Maria Poulaki

BEFORE OR BEYOND NARRATIVE?

Towards a complex systems theory of contemporary films

MARIA POULAKI

ISBN 978 90 361 0268 1

© Maria Poulaki, 2011

All rights reserved. Save exceptions stated by the law, no part of this publication may be reproduced, stored in a retrieval system of any nature, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, included a complete or partial transcription, without the prior written permission of the authors, application for which should be addressed to author.

Dissertation University of Amsterdam
Printed in Amsterdam by Rozenberg Publishers

BEFORE OR BEYOND NARRATIVE?

Towards a complex systems theory of contemporary films

ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad van doctor

aan de Universiteit van Amsterdam

op gezag van de Rector Magnificus

prof. dr. D.C. van den Boom

ten overstaan van een door het college voor promoties ingestelde

commissie, in het openbaar te verdedigen in de Agnietenkapel

op vrijdag 2 december 2011, te 12.00 uur

door

Maria Poulaki
geboren te Athene, Griekenland

Promotiecommissie:

Promotor:	prof. dr. T.P. Elsaesser
Copromotor:	dr. W.B.S. Strauven
Copromotor:	dr. J.A. Teurlings
Overige leden:	dr. W.S. Buckland
	prof. dr. L.A. Leydesdorff
	prof. dr. L. Nagib
	dr. J.A.A. Simons
	prof. dr. J.M. Pier
	prof. dr. P.P.R.W. Pisters

Faculteit der Geesteswetenschappen

The research described in this thesis was made possible by the support of the State Scholarships Foundation of Greece (IKY)

To my parents, Kostas and Loula,
and my sister Anastasia

CONTENTS

Aknowledgements 9

INTRODUCTION 11

PART 1 *REFLEXIVITY* 25

Chapter 1
Implanted time: *The Final Cut* and the reflexive loops of complex narratives* 25

Chapter 2
Framing the revival of (self-)reflexivity in complex films 41

Chapter 3
Reflexivity and organization in systems and in complex films 57

PART 2 *EMERGENCE* 75

Chapter 4
Are networks narratable? The case of *Burn After Reading* 75

Chapter 5
Agents and patterns of causality in traditional and network narratives 93

Chapter 6
Causality and emergence through complex systems and narratives 109

PART 3 *PATTERN* 125

Chapter 7
Systems in crisis: *Gomorrah* as a case of complex cinema 125

Chapter 8
Complex space: Narrating and describing 141

Chapter 9
The pattern of complexity 159

CONCLUDING OBSERVATIONS 177

NOTES 181

ENGLISH SUMMARY 203

NEDERLANDSE SAMENVATTING 205

BIBLIOGRAPHY 207

[*] An altered version of Chapter 1 under the same title is published as an article in *New Review of Film and Television Studies*, Vol. 9, Iss. 4, 2011. The journal is available online at: http://www.tandfonline.com/loi/rfts20

AKNOWLEDGEMENTS

Writing this dissertation has been a personal adventure. I would like to cordially thank various companions along the way.

I am grateful to my first supervisor Wanda Strauven who trusted me and intuitively guided me through the emergent process of writing. Her wise judgement and passion for detail gave the dissertation its form and dynamics. I am equally thankful to my second supervisor Jan Teurlings, who opened up new theoretical directions to me. My dissertation benefitted greatly from his wide knowledge and insistence upon sound argumentation. Last but not least, I thank the promoter of this dissertation Thomas Elsaesser, who provided me with invaluable feedback and helped the organization of my argument *vis à vis* the complex world of cinema.

In the four years that my PhD research lasted I had the chance to be part of the research community of the Imagined Futures project, with all members of which I discussed ideas reflected in various parts of my thesis. Special thanks, not least for their support and friendship, to the core group of 'iFut nanos': Tina Bastajian, Zeynep Gunduz, Pepita Hesselberth, Laura Schuster, Jennifer Steetskamp, and Martine Huvenne.

For helping me in the early and most difficult period of my PhD I thank Susan Stocker, whose love for English language and open spirit helped me to develop my ideas at the initial stage of my thesis, and Josef Fruchtl for reading some convoluted initial drafts and giving me valuable feedback. For doing the final proofreading of the thesis I thank Bronwyn Birdsall.

For making my academic life easier and always being there to solve various bureaucratic issues, I warmly thank the ASCA managing director Eloe Kingma, as well as Ania Dalecki and Jantine van Gogh.

This dissertation would not be possible without the financial support of IKY, the State Scholarships Foundation of Greece, to which I am very grateful.

Most of all, of course, I am grateful to those who do not need thanks, my family and my friends in Athens and Amsterdam, who have always been there for me, before, during and after the PhD adventure.

INTRODUCTION

Tracing unlikely connections, such as those between butterflies and typhoons, stockbrokers in Boston and divinity students in Cambridge, ant colonies and human brains, cells and the universe: this is how complexity has been discovered, or better, revealed by current science. Through an analogous process, of tracing connections that at first seem unlikely, I approached my own object of research, which, in very broad terms, is contemporary cinema. 'Contemporary' here carries particular significance, as cinema is today at a crucial stage of its development, where it needs to choose between two alternatives: on the one hand, homeostatic preservation of what it already is (which is perhaps harder than ever, partly because of the centripetal forces of media convergence) and, on the other hand, contamination with different, sometimes unlikely, disciplines and discourses, and evolution towards an unpredictable but fascinating future.

Description of research object

While alternative forms of narration have made their appearance in mainstream cinema since the 1970s, when 'post-classical' Hollywood made its presence noticeable, in the mid-1990s a bolder tendency of experimentation with the narrative form emerged from the outskirts of popular production. The films of this recent cinematic tendency have often been discussed as "complex narratives",[1] borrowing this already-existing label from literary criticism and narratology.[2] Since the commercial success of Quentin Tarantino's *Pulp Fiction* (1994), "complex" films have widely expanded, to the point that we can now, more than a decade after their spread, talk about a new 'norm' promoted worldwide, both by large Hollywood studio productions and by the so-called world cinema. Complex narrative structure connects films as diverse as *Run Lola Run* (Tom Tykwer, 1998), *The Matrix* (Andy and Lana Wachowski, 1999), *The Sixth Sense* (M. Night Shyamalan 1999), *Memento* (Christopher Nolan, 2000), or *Eternal Sunshine of the Spotless Mind* (Michel Gondry, 2004).[3] It is not so much the novelty of the alternative narrative means that such films use that makes them worth of investigation;[4] what makes them intriguing is rather their quantitative proliferation and popularization, which crosscuts geographical and genre boundaries and manifests an enduring presence—as recent productions indicate, from *Enter the Void* (Gaspar Noé, 2009, France/Germany/Italy/Canada) or *The Sky Above* (Sérgio Borges, 2011, Brazil) to *Inception* (Christopher Nolan, 2010, USA/UK).

Trying to cluster the common characteristics of these complex films, I would say that they tend to contain many protagonists and parallel and interconnected stories, a different, for

some scholars "loose", form of causality, with chance or coincidence becoming a central force in the plot development, and a nonsequential temporal and spatial structure. As Warren Buckland puts it, complex films "embrace nonlinearity, time loops, and fragmented spatio-temporal reality" (2009: 6). This unconventional structuring of complex films is assumed to have a significant impact upon the viewer and his or her interpretative strategies. David Bordwell, who places these films in a third era of Hollywood narrative experimentation (from the mid-1990s until today),[5] refers to many of them as "puzzle films", i.e. films that prompt the viewers "to discuss 'what really happened', to think back over what's has been shown, or to rewatch the film in the search for clues to the key revelations" (2006: 80).

Due to their expansion, contemporary complex films form a significant object of research, and many media and cultural critics have been occupied with their various facets since at least 2002.[6] From then on, the umbrella term "complex" has been used in parallel with different other terms that address more particular aspects of these films: "alternative plots" (Ramirez-Berg 2006), "forking path films" (Bordwell 2002), "multiple draft" films (Bordwell 2002; Branigan 2002), "network narratives" (Bordwell 2006), "psychological puzzle films" (Panek 2006), "twist movies" (Lavik 2006), "possible world films" and "trance films" (Perlmutter 2002 and 2005), "psycho-temporal transport" films (Stewart 2006), "modular narratives" (Cubitt 2004; Cameron 2008), "neo-baroque" films (Ndalianis 2005, Cubitt 2004), "puzzle plots" (Buckland 2009;), "mind-game films" (Elsaesser, 2009), "database narratives" (Kinder 2002), "transmedia narratives" (Jenkins 2007). All these terms try to capture different aspects and functions of the contemporary films that I prefer to continue calling complex, for reasons that I will soon explain.

Why (again) complex narratives now

In this dissertation I am not going to dismiss the adjective "complex" that has been used to describe the narrative structure of many contemporary films, but rather build on it, looking for an adequate theoretical framework to approach this complexity. In literary and narrative theory, complexity has so far been referring to the presence of features that transgress the linear order of the story. This gives complex narratives a somewhat paradoxical nature, also displayed by contemporary complex films, because they rely on 'anti-narrative' means in order to tell their stories. Classical narratology has always been coping with numerous cases of complexity, although its tendency to prioritize the 'linear' causal-logical and temporal succession of events in its definition of narrative, makes it, in my view, no longer a satisfying framework to accommodate the complex and non-linear structure of complex films, particularly at this point in time when the latter seem to become, as I already indicated, the norm rather than the exception.[7] Therefore I see an ever-more demanding need

to address the nonlinearity of contemporary films as such, as well as its particular modes of textual and cognitive organization.

Narrative has been defined either as the object of narration, the story in its particular articulation, or, especially since the 1980s with the influence of cognitive science (see Bruner 1986), as a mode of representation and reasoning as old as humanity itself. Both narratives and the narrative mode of reasoning create links between events prioritizing the whole over the parts. Individual events make sense only as long as they are placed into a meaningful whole, supporting its constitution by being the causes of other events (Polkinghorne 1988). Events only make sense when the whole is completed, and their placement in the chain of causality and temporal continuity is made definite. Even more so, this whole is *presupposed* in the beginning of every narrative, so that following it as readers, viewers or recipients in general, we already know that the events will make sense eventually, as they form parts of a larger system. The above assumptions are interwoven with the notion of narrative, both when the latter is conceived through the (classical) structuralist perspective and when it is conceived through the more recent cognitive perspective.

'Classical' literary narratology, extending from the Russian formalists to the French structuralists (see Herman 2009: 26), does not address only the 'narrative' (story) but also the process of narration and the complex interplay of the two that every literary text incarnates. Even though I also consider narrative anything but a one-dimensional concept, I find the insistence in using the term "narratives" to address contemporary complex films problematic. On the one hand, I find that narratology, especially at its best moments, cannot be confined to what is defined by the term narrative and the presumptions it carries and reproduces. In some of the most influential narratological models, such as the one of Genette, narrative becomes a collective and complex formation, and a struggle of multiple forces (like those of *récit*, *histoire* and *narration*). Narratology can be seen as the study of the complex contact between a text and a recipient, and its insights are of great value in this respect. On the other hand, in my own study it has been necessary to use narratological models in order to show how the definition of narrative is not applicable in the films I studied and why it is at the limits of narrative and beyond them that contemporary complex films find their place.

Contemporary complex narratives contain, from the perspective of narratology, 'non-narrative' or 'anti-narrative' elements. This brings them in contrast not only to a classical type of narrative, represented in cinema by the Hollywood tradition but also, as I see it, to the core element in the definition of narrative, which is to some extent reproduced even in post-classical and cognitive strands of narratology, and which has to do with narrative's beginning-middle-end schema and causal-logical sequence. This sequence is not necessarily supposed to be constituted through the text itself; the *syuzhet* might as well appear disordered and out of

sequence; narrative theory of course acknowledges this, but it still presupposes that the reader/spectator cognitively constitutes (or attempts to constitute) a sequence. In cinema, the beginning-middle-end schema of narrative has started being 'officially' challenged already since the dawn of the post-classical Hollywood era (see Elsaesser 2009b), and is being more decisively transgressed through the subsequent emergence and prevalence of 'complex narratives'. These films, although telling stories and appearing as narratives in this respect, they nonetheless point at the inadequacy, futility, or, using Genette's expression, 'border' and limitation of narrative—as a mode of composing a story, as a cognitive process of intelligibility, and as a theoretical approach to these films.

Using the adjective 'complex' as a starting point, I will argue for the usefulness of applying and prioritizing an alternative theoretical framework in the analysis of complex films, which will not be that of narratology—especially its classical strand but also the existing postclassical approaches,[8] the usefulness of the latter notwithstanding—but the one of complex systems theory. When detached from the narratological framework, the 'complex' can refer to the study of wholes that are created by pieces (which can also be the pieces of the so-called "puzzle" films) and most importantly, *determined* by them. Such piecemeal structures can be called systems, and are currently at the forefront of research conducted within the expanding domain of complex systems science and theory.

The complexity of systems

Complex systems theory is a transdisciplinary field with contributions from very diverse sciences, from physics and biology to sociology. Because of the heterogeneity of these contributions it is difficult to define a unified field of complex systems study, and in this respect it is more accurate to refer to complex systems *theories* in the plural. There are however certain commonalities that bring these theories together, the most fundamental of which is perhaps their interest in the dynamics of organization that pre-exist structures. This is indeed what the study of systems boils down to, namely the complex interactions between elements that create an organization, either biological, social or technological. Ludwig Von Bertalanffy's General Systems Theory (GST, 1937), and cybernetics, in its development through the post-World War II era, have been the most representative strands of systems theory as a transdisciplinary domain, and precursors of contemporary complex systems theory.[9] However, there had been even earlier works in the Russian and German world, such as Alexander Bogdanov's *Tektology* (1912-1917), that anticipated many systemic ideas.[10] In the recent decades, the development of information science and computing has significantly contributed in providing tools for a more unified science of complex systems; tools that

mainly consist in computer modeling and simulation. Such tools have been in use since World War II and have become very popular especially since the 1970s, but the further development of technology (for instance, of sensors that enable data input and creation of feedback circuits) and software design, as well as the increase of computational power, have made complexity simulations all the more sophisticated.[11]

Not only the increasing cross-disciplinary research in complex systems but also the publication of several books addressing the lay reader are indications of the popularization of complexity theory, especially since the 1990s. It is no longer cybernetics that prevails in the area of systems research but new domains have emerged such as chaos theory in the 1980s and network theory in the 1990s, helping to draw towards a general science of complexity that encompasses these already interdisciplinary strands (see Mitchell 2009). In the development of systems theories throughout the 20th and the beginning of the 21st century, "complex" seems to have become an indispensible part of the word "system". This is indicative of a gradual turn, already manifest during the development of cybernetics as Katherine Hayles (1999) shows, from 'top-down' control and maintenance of a systemic organization to a 'bottom-up' constitution of the system, subject to dynamic transformation and unpredictable perturbations. Ian Bogost distinguishes between two different kinds of systems and maintains that this distinction also characterizes systems theory. Classical systems theory privileges top-down instead of bottom-up approaches, while in the new *complex* systems theory, the emphasis is placed on units and their decisive role in structuring the system. Units are agents of complexity as long as they interact and form aggregates that are more than the sum of their parts, and by further becoming themselves subsystems of larger organizations, in an ever-expanding chain of growing complexity.

From the aspect of the sciences of complexity, complex systems are considered aggregates and constellations: they are compositions of many individual elements into "constitutive" (and not "summative") complexes.[12] Many different systems, biological, technological, social or psychological can be considered as complex: from the human immune system to the brain's neural network, from cities to commercial firms (see Holland 1995; Johnson 2002; Mitchell 2009), and from the World Wide Web to the Internet Movie Database (IMDb).[13] Even though complex systems always form 'wholes' larger than the sum of their parts, these wholes produce their self-organization only through the aggregation of heterogeneous units.

It has been suggested that the interest in systems complexity that crisscrosses different cultural fields is the expression of a 'paradigm shift' in the way we analyze media texts, but also ourselves and the world we inhabit. As Peter Coveney puts it:

> over the past 30 years or so, an alternative conceptual picture has emerged for the study of large areas of science which have been found to share many common conceptual features, regardless of the discipline, be it physics, chemistry or biology. Self-organization and complexity are the watchwords for this new way of thinking about the collective behavior of many basic but interacting units. In colloquial terms, we are talking about systems in which "the whole is greater than the sum of parts". (Coveney 2003: 1057)

In my study I highlight the fact that the complexity discourse has already affected film theory and practice, and therefore I suggest that we can also analyze media texts, such as films, through this lens. Such a complex systemic thinking and analysis of cinema and its individual filmic formations, as I will argue, is not only made possible, but actually necessitated by the highly interconnected and complex function of contemporary societies, where it is impossible for any type of discourse or cultural institution, such as the one of cinema, to stay unaffected by its placement in a network of institutions that overall functions as a complex organism. Being an agent in this network, cinema organizes itself in ways that allow it at once to cope with the complexity of its environment and to further develop its own complexity. By struggling to incorporate practices coming from different media in the production and distribution of films (from 'cell phone cinema' to online file sharing) but also in the conditions of spectatorship, which have become more mobile and fragmented and demand more interactivity, cinema achieves higher internal differentiation. Complex films as expressions of *this* complex cinema are more than just complex narratives; they are the units through which cinema re-invents itself and adopts to the highly volatile conditions of network society.

The framework offered by complex systems theory helps us see the transdisciplinarity of certain phenomena, not only across media but also across other fields of knowledge. As the complex systems framework places the phenomenon of complex films in a wider cultural paradigm shift towards complexity, films themselves can be seen as nodes in larger cultural networks, and expressions of wider changes in knowledge and experience of the world. Complex systemic approaches to contemporary cinema reveal that complexity not only challenges our presumptions about cinematic texts and their reception, but also paves the way to study how films themselves form aggregates out of which new modes of story world production and reception, new practices of filmmaking and new 'spectatorship contracts', as Elsaesser would have it, emerge within the media sphere. Complexity science not only offers us a different framework and a different vocabulary to analyze complex films, but also proposes a different epistemological (in terms of 'how' we approach our object of study) and ontological (in terms of 'what' is this object) approach to cinema altogether.

Pieces and aggregates

As with complex systems theory, which flourished partly because of the advances in computing (the "butterfly effect" which marked chaos theory was after all discovered during the process of computer modeling of weather systems), the appearance of "complex" narratives also has informational and technological causes. The possibility to take into account (and compute) the most minimal components of a system (such as the flapping of a butterfly's wings, in the metaphor of the butterfly effect) revealed how their impact might be tremendous for the shape that a system might take over time. As it happened in chaotic systems research, in the media field too, information technologies now create the possibility to distinguish the individual units/components of the image (e.g. the pixel). There are certain scholars who have argued that contemporary complex films somehow incorporate digitization, introducing a "database aesthetics" in their narrative form (Cameron 2008: 42; see also Cubitt 2004, Kinder 2002, Manovich 2001), and thus, treating their narratives as composed by pieces (of data) that can be individually accessed and reordered. Allan Cameron has stressed that complex films thus display modularity, which is a form of aggregation, and also a characteristic feature of new media (Manovich 2001). These films also highlight and remix their individual components, somehow reproducing at the plot level their ontological transformation.

Modularity also characterizes complex systems approaches—which consider systems dynamic and tentative organizations subject to the different interrelations between the components/subsystems (Varela 1990: 20). A crucial difference between the modularity of systems and that of databases is that in complex systems the components self-organize, and therefore display an agency of their own, instead of that of an external user. By contrast, the components of a database do not have any inherent systemic qualities; they show such qualities only if there is an external agency that enables the aggregation of the components. Yet, as I will maintain throughout this study, the theoretical approach of complex systems is adequate for the analysis of complex films, as it releases the degrees of freedom in the interactions of the components that they contain, and furthermore, their self-organizing potential in creating meaningful wholes. Self-organization is here suggested to take place at the interface between the text's form and the cognitive activity of the recipient, the area which narratology, especially in its cognitive strands, addresses using the term "narrative"—with the defining characteristics that I have already problematized.

The insertion of the theoretical tools of complex systems theory serves the need to address the dynamic filmic and cognitive formations that emerge through the connection of heterogeneous and spatially distributed elements. These new tools can therefore significantly contribute, conceptually as well as methodologically, to the analysis of complex narrative

films. A complex systems theory for complex films would translate between the two mutually unintelligible levels of the strictly computational properties of the digital, which lends its form to contemporary films, and the human consciousness that still needs to incorporate it into a meaningful system. This process of translation would however not subordinate the one to the other. In current media theory, the dilemma between narrative and database and their different media forms and types of data organization is one of the most controversial topics (see Manovich 2001). This dissertation will move towards transcendence of this dilemma, which is incarnated in the paradoxical form of complex films, as Marsha Kinder among others has indicated in her theorization of database narratives. In my view, the solution is not to use complex films (or "database narratives") as agents of reconciliation between narrative and database, but to study in what ways these films fail to fully accommodate either of these two different cultural forms. Responsible for this 'failure' is that complex films are neither databases nor narratives; they are complex systems. On the one hand, databases are not easily compatible with the idea of a system, because their elements do not form a coherent whole. On the other hand, narrative has always been compatible with the idea of a meaningful and 'closed' system. In its theorization, through the interplay between *syuzhet* and *fabula* (Russian formalism) or *récit*, *histoire* and *narration* (Genette), narrative is a textual and cognitive organization that tests its elements (events in the text) against a backdrop of a certain order (the one implied by the *fabula* or *histoire*), which follows the rules of causality and temporal and spatial continuity. In the light of the recent expansion of the ideas of complexity, many theorists argued that narrative has always been complex, mostly referring to the cognitive processes of the authors and the viewers in their mental structuring of a storyline.[14] However, what the contemporary (and highly self-reflexive) movies of the complex film tendency make possible is to trace how they build their complexity through processes of aggregation of individual components. These processes can be described in complex systemic terms, and yet differ from the modes of systemic organization associated with narrative. What I suggest is thus not a simple inversion of the causal sequence, one that, instead of imposing the order of a preexisting narrative structure on the dispersed textual components of films, would start from the latter in order to prove narrative as an 'emergent' order. This is, after all, what narratology has always been doing in an often fascinating way. Rather, my approach points at a departure from narrative and a set up towards unpredictable and new directions beyond it.

Remarks on my theoretical approach, structure and methodology

Cinema offers a fertile ground for my research, not only because it is from this medium that the theories of complex narratives have resurfaced, but also because in cinema "narrative

integration" has been playing such a restrictive role in film production. Because of this standardization of the narrative model in cinema, the contemporary play with the narrative form creates more significant perturbations than in other media that have a fragmentary nature, such as television. Moreover, that proportion of cinema theory that is based on narrative cinema, such as Bordwell's, often tends to over-emphasize the forces that are centripetal in the "experimentations" of contemporary cinema (pointing back to narrative and its modes of organizing meaning),[15] rather than centrifugal (pointing beyond narrative).

In the history of film theory there have been significant systemic approaches to film, like the structuralist approach of Christian Metz, influenced by Saussurian semiotics. Bordwell's and Thompson's approach to films is also systemic in principle, since they define a film's *form* as a system: "film form is a system—that is, a unified set of related, interdependent elements" (2008: 65). In the present work I do not follow a semiotic framework for systems, but one that, as already broached, was gradually shaped through the development of systems theories, especially in the second half of the 20th and the beginning of the 21st century, and the rising interest in systems' complexity. Moreover, I stress the complex and not just the systemic properties of films. It is only through the former, as I will argue, that the connection between films, cinema and other systems can be highlighted.

When it comes to the discussion of contemporary "complex narratives", and especially "forking-path", "puzzle" and "network" narratives, Bordwell reaches to the science of complex systems, but stays mostly at the surface of 'thematic influence' that these films have received from it. For instance, he sees *Run Lola Run* as indicative of the popularization of chaos theory (in the form of "the butterfly effect") and various "network" narratives to be influenced by the popularization of network theory, in the form of "six degrees of separation" (Bordwell 2006: 93, 100). Although my own approach, like Bordwell's, is also influenced by these theories, my goal is to show that complex films do not reflect complex systems, but function themselves as such, in the context of their complex environment, that of the institution cinema and its own embeddedness to more extended systems. Thus, films do not fulfill their purpose when they become coherent wholes of interdependent elements in the mind of the spectator. These wholes rather stay open and function as nodes in the networks that connect films with other films, cinema with other media systems, and media systems with the complex system of global economy and cultural production. Establishing a link between complex films and complex systems and highlighting their structural similarities, is to show that individual films—as textual systems—participate in complex networks of systems that function in a homologous way.[16] Therefore a change of theoretical and potentially of methodological framework is necessitated to address individual films as constituent units of complex cinema.

A comprehensive study of the complex workings of complex films would move beyond the textual level, taking into account the ways that the 'senders' and 'receivers' of these film-texts participate in their complexity. The inclusion of qualitative and quantitative data about film production and distribution conditions, audience reception, or individual film perception (which now flourishes in neuropsychology with the help of sensorimotor data-mining and fMRI representations) would make the study of the complexity of individual films or of groups of films more comprehensive. My theoretical study could be used not to draw definite conclusions but to construct hypotheses about how complex processes found in specific film texts might also be the case at larger scales of cinematic organization. In this study, I take the individual films as units of analysis. Thus, I consider film texts the small units that compose the institution cinema. Since complex systemic approaches favor bottom-up methods and "unit operations", I believe that the study of these small cinematic units as complex systems in their own right might provide insight into how they influence and determine the current development of cinema.

In the course of my research, I observed how in contemporary complex films the diegesis is internally 'multiplied' into several temporal loops, frames, agencies, perspectives and story-threads. It is this textual multiplicity that makes the theoretical and methodological approach of these films as complex systems plausible. The 'non-linear' arrangement and composition of heterogeneous units in complex film texts arguably affects and transforms the way their diegetic worlds are organized. In my methodological approach, the organizing principles of time, causality and space are not taken as starting points and pre-existing axes that configure the films' diegetic organization. Rather, these principles cede their place to processes that emerge from the complex interrelations and aggregations of units into emergent structures that engage the viewer in a different way than narrative does.

The dissertation is divided into three parts and each part opens with a chapter about an individual film. The complexity of the films I analyze is revealed by a method of following the gradual articulation of their elements—the aggregates that their diegetic pieces form. In this way the films function as heterogeneous and expanded surfaces on which complexity builds up. The complex systems framework also informs the structure of the dissertation, in terms of chapter arrangement: within each part, the films are put forth as units of analysis, while bridges to other films of the "complex narrative" tendency and to the relevant theories (narratological and systemic) are gradually built in the chapters that follow.

The second chapter of each part deals with the problem of the paradoxical nature of complex films, highlighting their 'anti-narrative' features. Thus, after analysing each film, I problematize the fact that characteristics that have traditionally been considered as antithetical to narrative, such as self-reference, loose causality and description, proliferate in them, as well

as in other contemporary complex films. This paradox calls for a deeper investigation into narrative's own internally subversive dynamics, and therefore, its limitations.

In the third chapter of each part, the anti-narrative features proliferating in complex films are reinterpreted as organizing forces through the framework of complex systems theory. Thus I derive from selected parts of the theory and philosophy of systems, three fundamental processes of complexity, namely reflexivity, emergence and pattern formation, and show how time, causality and space —traditionally considered the organizing principles of narrative— can now be thought as the products of these complex processes. Reflexivity, emergence and pattern are arguably modes of—distributed and dynamic—organization characterizing both the textual/filmic arrangement of story worlds and their cognitive processing by the viewers. Thus, the complex systems framework provides me with lenses to reflect upon complex processes involved in contemporary films that cannot be confined to the label 'narrative', and to suggest a new, alternative model for the analysis of these films.

Chapter outline

Part 1: Reflexivity

Part 1 opens with an analysis of the film *The Final Cut* (Omar Naim 2004). Transforming the fictional device found in the film's diegesis, namely the 'implant', into a theoretical device, I treat the temporal loops of the film as implants of self-reference that gradually compose the film's organization in a modular, but also non-linear and increasingly complex way.

In Chapter 2 I examine the function of self-reflexivity in contemporary complex films against the backdrop of the traditional theorization of self-reflexivity (or self-reference) in narratology and film theory. These traditions have considered self-reflexivity to be an anti-narrative device. Particularly since the 1970s, self-reflexive means in cinema have been considered to counteract the 'illusion' that every fictional story is supposed to create. However, a significant part of the recent literature on complex films seems to be suggesting that their feature of self-reflexivity creates curiosity and care for the story world instead of—or even along with—critical distance. Distinguishing between metanarrational and metafictional reflexivity I suggest that the self-reflexivity found in contemporary complex films is primarily metanarrational, and establishes feedback between the film and the viewer, inviting the latter to participate in the constitution of the diegesis. This function implies that, even when it does not serve the construction of a coherent narrative, self-reflexivity still is an important factor of organization.

Chapter 3 draws on the systems theory of Niklas Luhmann, where "reflexivity" is the process of temporal organization of systems. This organization is effectuated through continuous self-observation (or self-reference) of a system. Connecting this self-observation with metanarration in contemporary complex films, I argue that these films, through multiple instances of self-reference, make events "re-enter" the filmic process (for example, through flashbacks and flash-forwards), and thus constitute their temporality in a non-sequential way.

Part 2: Emergence

Chapter 4 is an analysis of the film *Burn After Reading* (Ethan and Joel Coen 2008), testing it against the backdrop of the films theorized as complex, and especially those characterized by Bordwell as "network narratives". Looking at the different types of causality involved in the diegesis of *Burn After Reading*, I differentiate between an anthropomorphic micro-level of causality and a nonhuman macro-level. I argue that the film requires from its viewer to combine these different causal levels in a nonlinear way in order to construct a 'network' of action between multiple characters-nodes, and to follow their heterogeneous trajectories that never form a comprehensive whole.

Chapter 5 is an examination of the workings of causality in the contemporary complex films that contain multiple characters, and which have been characterized as "ensemble", "hub and spoke" or "network" films. The defining characteristic of classical narrative films, i.e. their cause and effect chains of events, appear in these "complex" films loosened, giving their place to contingency. Criticizing the way Bordwell discusses this "loose causality" of network narratives as ultimately returning to the "customary path" of classic narration, I argue that causal processes taking place in complex networks may also be at work in network films. In the latter, traditional causality (in the form of cause and effect chains) is suspended, while a synergetic causality emerging from the interactions between characters becomes prominent. These interactions are not only narrative but systemic, as long as they increase the informational flow of the diegesis, and create dynamics that connect the micro-level of anthropomorphic agency and the macro-(structural) level of formal transformation, in a nonlinear—and not customary— way.

In Chapter 6 I draw on the science of complex networks in order to explain how the model of causality suggested in Chapter 5 is one conceived in terms of emergence, i.e. the self-organization that spontaneously results from the complex interactions between the various units of a system. Emergence in complex networks is not independent from the micro-agents; it is rather the result of their aggregation, which channels their agency to a different structural level. Such "pattern-based" causality (Goldstein 1996) arguably gives more precision to the

"loose causality" observed in complex films. Moreover, it casts doubt as to whether narrative, as a concept associated—in cognitive terms—with the construction of a causal-logical sequence between events, may be the end-result of the transformative dynamics that complex films release.

Part 3: Pattern

Chapter 7 approaches the film *Gomorrah* (*Gomorra*, Matteo Garrone 2008) as a complex film. I suggest that in terms of cinematography and montage, but also in its narrative construction, *Gomorrah* demands from the viewer effort in order to orient themself in the filmic environment, by shifting between different spatial registers and creating connections between disparate perspectives. These connections gradually produce, textually but also cognitively, a complex space, which seems to extend beyond the closed diegetic universe of the film.

In Chapter 8 I examine the way that space and its 'complexity' has been theorized in narratives and films. I argue that the films of the complex narrative tendency tend to have a discontinuous spatial composition, which becomes apparent with regard to multiple units of analysis (frame, shot, scene, episode). To show how this discontinuity produces space, I revisit the narratological concept of description, which has always stayed at the margins of narrative, but now seems to become a form that encompasses the latter. I argue that description responds to the spatial heterogeneity of complex films, and at the same time triggers the viewer's activity of constituting a diegetic world by making connections between the distributed pieces, and weaving patterns out of them.

The concluding Chapter 9 attempts to clarify some contradicting notions of pattern that have been used in theoretical approaches of complex films. Combining a spatial definition of pattern (drawing on the literary theory of the "spatial form" by Joseph Frank) and an emergent one from complex systems theory, I argue that complex films create patterns both intra-diegetically (through their bottom-up organization by the aggregation of heterogeneous units) and extra-diegetically, by aggregating heterogeneous cinematic traditions of narrative order and contingency. Complex films thus build for cinema an organization that is coherent enough to navigate, orient itself and evolve in a complex environment.

PART 1: REFLEXIVITY

An individual film, *The Final Cut* (Omar Naim, 2004, US/Canada/Germany), will be used as starting point for the study of particular processes of complexity in films of the "complex narrative" tendency. This film, although it has attracted scant attention from theorists of complex narrative films, shares common characteristics with other films of this tendency, and particularly stands out due to its intense self-reflexivity. While the issue of self-reflexivity in the context of complex films will be extensively discussed in Chapter 2, *The Final Cut* will be a useful point of reference throughout Part 1. In my plot-oriented analysis of the film in this first chapter, I will illustrate particular motivations, techniques and functions of self-reflexivity, so as to prepare the reader for the discussion of this concept in the next two chapters of Part 1. The self-reflexivity of *The Final Cut* is intertwined with the non-sequential temporal structure of the plot, and raises question about the fundamental characteristics of narrative cinema, related to issues of time and the 'cut' of editing. The fact that *The Final Cut* does so from the perspective of mainstream Hollywood cinema is symptomatic, as I see it, of a shift in cinematic institutional practices, which strive to accommodate more and more complex forms of narration.

1. Implanted time: *The Final Cut* and the reflexive loops of complex narratives

"Your life wasn't what you thought it was… Would you live it differently?" The taglines of *The Final Cut* prepare the viewer that the future and the past are mutually dependent in this film.[17] The story of *The Final Cut* is set in the near future of a developed Western city,[18] where nanotechnologies and their applications in biomedicine have made it possible to record all human audiovisual perception with the surgical installment of a biochip, called the "zoe-implant", in the brain of unborn foetuses. As the person is born and grows up, this biochip, entirely organic, becomes fully integrated in the brain tissue to the point that it becomes a functional part of it, "virtually undetectable". According to the plot, most of the time the bearers of the implant are unaware of this "miraculous gift" that their parents gave them before birth until they reach adulthood. But by the time they turn 21, EYE-tech, the company that produces and distributes the zoe-implants, advises parents to reveal to their children that all their memories so far have been, and will continue being recorded, until the end of their lives. The implant cannot be extracted while the carrier is alive without risking severe brain damage. After death though, this biochip can be surgically extracted and used as a peculiar memory stick. As soon as the chip is inserted into a specifically designed computer, it

makes possible to retrieve footage from all recorded memories and to make movies out of them.

These exclusively biographical movies, called "rememories", are publicly projected in special ceremonies dedicated to deceased implant carriers. The projection takes place in church chambers that have been turned into cinema theatres for this purpose, while friends and relatives of the deceased constitute the audience. Made out of personal perceptional archives, the rememories not only produce a flattering postmortem portrait of the deceased, gracing them with an honored memory, but they also promise to keep their memory literally 'alive', as the rememories will remain available for projection and viewing. However, we soon realize that it is EYE-tech that owns the footage and controls the rememories. Through them, it is not really the memory of the deceased that stays alive; rememories are rather constructed from personal memories re-experienced by a stranger: a "cutter".

According to the plot, professional cutters edit the footage retrieved from the extracted implants and decide whether something is worth being included in the rememory or not. The main character of *The Final Cut*, Alan Hakman[19] (played by Robin Williams), is such a cutter, a specialized editor of rememories. Socially alienated, he lives through the lives of others, being totally attached to his editing equipment—the "guillotine", as it is ironically called in the cutters' jargon—with the help of which he cuts and edits the bits and pieces of other fragmentary life-times. A "sin-eater" as he calls himself after an ancient tradition,[20] he has to carry all the ethical burden of his 'cutting decisions' about the traces that a human life leaves behind.

Placed in a science fiction context, *The Final Cut* appears as an Orwellian cinematic tale about the integration of technology and biology. The appropriation of biodigital technologies by sinister corporations is pictured as enabling the omnipresence of surveillance to expand from public spaces to the most intimate space, that of the interior of the human body, and particularly to the center of human agency and self-control: the brain. Human agency thus seems to be in peril—as we are constantly reminded in the course of the film—but strangely, in the near-future society where the story is set, the unprecedented violation of private life that EYE-tech performs is not imposed by some authoritarian regime, as it often happens in dystopian science fiction, and especially in works such as *1984*. Rather, at first it appears as socially acceptable and even desirable, since this miraculous technology is supposed to have the seemingly innocent purpose of making rememories. From this perspective, *The Final Cut*'s futuristic speculation updates the centralized model of control of the Orwellian tradition into the current actual conditions of the contemporary globalized societies, where human lifetimes are recorded, uploaded and distributed (in platforms such as Youtube and Facebook) through what seems to be a 'bottom-up' process, starting from the

users' full complicity and desire. At the same time, *The Final Cut* points at the connections between this tendency towards increased commodification and control of 'self-broadcasting' and the cinematic apparatus. Modernity prescribed the merging of machine-time with human-time as an economic necessity. At the other side of Taylorism's mechanization of the worker in the line of production, cinema also played its crucial role in the commodification of life-times, as it has been the pioneer technology of the modern shift to the capitalization of leisure, to this merging of the machine-time with the human time (Cubitt 2004: 51). From this perspective, the idea behind *The Final Cut*'s story, that of a quasi-cinematic camera being implanted into the human brain and becoming an undetectable part of it, rendering life-time into commodity, seems like the extreme consequence of a development that started more than a century ago.

In *The Final Cut*'s world, human lifetimes are literally turned into commodities, implant footages that can be stored in hard disks and distributed by a corporation, for the time being serving relatively innocent rememories, but with unknown future implications. EYE-tech is pictured as exploiting the apparent people's 'need' to achieve immortality by recording their ephemeral perception in lasting materials. At the same time, a web of omnipresent and distributed surveillance is being created by the implant carriers themselves, who, without intention, record all the people they encounter, along with their own personal thoughts and secrets, into their zoe-implants, which ultimately end up in the archives of EYE-tech. Human life becomes a commodity wrapped into an appealing high-tech package that seems to have already seduced the individuals populating the not-so-futuristic society of *The Final Cut*.

Cyberpunk's rememory

According to *The Final Cut*'s plot, EYE-tech faces resistance by some rebellion groups of neo-punks or "anti-zoe hippies", as they are called in the film, who organize a wide range of reactions, from protests against the corporation to "terrorist" attacks (arsons against EYE-tech's factories). The anti-zoe hippies have also invented an "electrosynth tattoo", made out of a particular kind of ink that interferes with the implants, "blocking them from recording audio or video". Part of the more radical branches of the anti-implant resistance is Alan's antagonist, Fletcher (Jim Caviezel), an ex-cutter who quit his job and decided to fight against the EYE-tech Corporation. Fletcher now exerts his bitter critique on Alan, trying to shake his devotion to his guillotine. But Alan faces his work on implants with cynicism: "I didn't invent the technology", he responds to Fletcher's accusations. "If people didn't want it, they wouldn't buy it, Fletcher. It fulfills a human need".

However, we soon find out that what drives Alan's devotion to the rememory industry is not cynicism but guilt. Alan carries his own sins that he would wish to erase, just as those of his clients. It is revealed that when he was a kid he caused the death of another boy (Louis); and the memory of this old 'sin' determined his life and his choices ever since. Now offering his clients a relief from the burden of their sins, which otherwise would taint their memory forever, Alan provides them with a decent commemoration, making out of their life-footage a coherent and taintless narrative, one which he would obviously desire for himself.

Beyond its sci-fi genre classification, *The Final Cut* seems to partake of a wider cinematic tendency, the one of complex films. The film's connection with the "complex narrative" tendency is multifaceted. One way to approach the film's complexity is through its "puzzle" or "mind-game" character. Mind-game films, according to Elsaesser, often involve a series of 'tricks' or "mind-games" that the films play with their characters but also with the viewer. They carefully prepare a twist that comes to fundamentally alter the story so far, and to make it demanding reinterpretation through a different lens;[21] and IC technologies are often deployed to mediate these reflexive surprises. The narratives usually start with a hero who thinks that he has control over his life, a presupposition that soon turns out to be groundless. The heroes of mind-game films, like Alan, while observing (or manipulating) the lives of others get to realize that their own life is also being observed. They identify with the role of the 'operator of the machine' (in this case, the guillotine), but soon find out that in reverse, someone else operates upon them. They are neither the omnipotent rational agents, nor the masters of the mechanism, but 'automata' themselves. *The Final Cut*'s tagline "your life wasn't what you thought it was", could thus be the motto of puzzle films.

The crucial twist in *The Final Cut* comes when Alan accidentally discovers that he himself carries a zoe-implant in his brain. This finding brings him face to face with his own cyborgization and potential exploitation by EYE-tech. He edits implants while his own implant (and, consequently, his lifetime) is meant to be edited. The revelation that he is an implant carrier—something prohibited to cutters by their professional code, as the film has already informed us since the very beginning—is for Alan a shocking self-reflexive experience. So we see him smashing the mirror in which he first faces his reflection, 'disappearing' into the city's crowd encircled by echoing voices, leaning against a wall and collapsing helplessly on the pavement. He is found confronted with his own limits, as posed by his image, his voice and his body, respectively. Alan realizes that his placement in the system is not one of an autonomous observer of others' life-times: EYE-tech's project of life-commodification includes him in its raw products. After this realization, the definite boundaries that Alan perceived as separating and protecting him from the world get instantly blurred. And the secret of the machine's (as well as of his own) existence is kept in the—

ironically—dusty paper archives of a corporation that renders every single moment of his life-time into footage ready to be 'cut'.

It would be useful to take into account some special genre characteristics of *The Final Cut* that reveal a continuity between the current cultural tendency of complex films and a somewhat older cultural tendency, that of cyberpunk. Such continuity is especially illuminating when the issue of agency is raised in the context of complex narratives. The characterization of *The Final Cut* as "cyberpunk" not only by relevant specialized websites (like the cyberpunkreview.com), but also by commercial sites (like blockbuster.com) comes as no surprise when one takes into account its two core themes. Both themes have also been characteristic of cyberpunk, as a—mainly 1980s—genre and a cultural movement: the merging of technology with the human body (implants and other kinds of prostheses have thrived in cyberpunk science fiction) and the resistance against the appropriation of technologies by powerful corporations, especially with the use of technology by marginal individuals or subcultures in a rather creative way (for example, the "electro-synth tattoos" of *The Final Cut*). The narrative imbalance of *The Final Cut*, between the 'active' pole of the anti-zoe-implant resistance and the 'passive' pole of Alan's own cyborgization, points at the same problem that was central in cyberpunk stories: it seems hard to fight against the EYE-tech's exploitation of the implants when these devices have already been implanted in the brains of those who attempt to resist. Information technologies have been internalized and the traditional locus of resistance (the subject) has been displaced.[22] So, how can one use technologies to fight against their control by corporate and state interests when one is being invaded by technologies? At the dawn of the expansion of information technologies and networks, cyberpunk brought to the fore a tension between technologically mediated self-reflexivity—what has been called cyberpunk's "prosthetic consciousness", "a reflexive awareness of supplementation", according to Robert Rawdon Wilson's formulation (1995: 242)—and agency, at least in the form of oppositional action. Being controlled at the same time one resists, one also has to doubt his or her own motives and means of resistance. Thus, not only in cyberpunk but also in contemporary meta-cyberpunk, complex stories, the twist-moment, which always involves a degree of self-reflexivity, is at the same time a moment of revelation *and* uncertainty about one's own autonomous mind-body potency. Uncertainty and ambivalence, often exacerbated to the point of paranoia, have been characteristic features of both complex/puzzle films and cyberpunk stories.

Hybrid films such as *The Final Cut* appear concerned not just with the technological incarnations of information, but also, and perhaps more, with their own ability to communicate as potentially informational entities. Complex films are self-reflexive regarding their own cyborg nature—which has for long been underlying modern narratives—and "make explicit,

to varying degrees, the technological underpinnings of the narrative mechanism" (Cameron 2008: 25). As Allan Cameron puts it, complex films "reveal both the projection of subjectivity into the domain of technology and the projection of technology into the domain of narrative" (26). Having incorporated in their narrative form and the mode of their production the cyborgization of subjectivity, complex narratives make the play between human and nonhuman, real (actual) and virtual, internal and external, body and mind, even more fleeting than it already was in cyberpunk. Self-reflexivity is not only found inside their stories but also in their way of constructing the diegesis and the means they use to make the viewer's experience similarly uncertain and fleeting.

Like cyberpunk works, *The Final Cut* also deals with the problem of agency and cyborgization at the diegetic level, but beyond that, it becomes, in a sense, an allegorical reflection upon the cyborgization of contemporary complex films. In the rest of this chapter, I will focus on the different levels of self-reflexivity that are involved in *The Final Cut*, both inside and outside the diegesis.[23] I find self-reference in this film being interwoven with a kind of 'cyborg' temporality, a hybrid of the linear narrative temporality and of the spatialized, 'modular' construction of time that the "culture of the database" (see Manovich 2001) privileges.

Self-reference and recomposable memory

The twist of *The Final Cut*, which comes with the revelation that Alan is an implant carrier, gives a push to its main subplot to develop. Before knowing about his own implant (his ignorance is explained by the fact that his parents died before having the chance to inform him about its existence), Alan has just started to doubt how coherent the narrative of his own life is. The conception of himself as a sinner—apart from "sin-eater"—is disrupted, when in the footage of a zoe-implant he is currently working on, he comes across a man who looks familiar. His expressions and gestures remind him of Louis, the boy he always believed dead by his own fault. Alan's memory and self-conception thus asks for reconfiguration, and this only gets possible with the discovery of his own implant, which has been storing all his experiences so far. Thus, unlike what would happen in more traditional cyberpunk stories, *The Final Cut*'s main character has to confront not the implant industry, but instead, himself and his past. The name of the implant suggests that Alan's entire adult life (*zoe* in Greek) might be seen as an implanted prosthesis. As he admits in a moment of self-collapse: "One memory; one single incident has made me who I am". But the validity of this memory now needs to be put under scrutiny.

A similarly self-reflexive contemplation of the validity of memory seems to have been the occasion that gave birth to the idea of *The Final Cut*. The film's sci-fi trope was rather the 'topping' that the director and scriptwriter, Omar Naim, used in order to enrich the concerns that emerged during his first steps in film editing, about the gap between collective and personal memory, official and unofficial (lived) history. Naim was born in 1977 in Lebanon, and *The Final Cut* has been his first feature film, which he managed to develop after submitting his script proposal to the French project "Equinox", right after finishing film school in Boston.[24] Naim explains: "*The Final Cut* is about editing and memory. […] It's the Lebanese notion of mass memory, and people's very subjective memory and view of the world. […] This subsequently dictates how society functions. I extrapolated that into sci-fi theory" (Naim 2004a).

Being still a student in film school and working on his documentary thesis *Grand Theater: A Tale of Beirut* (1999),[25] Naim came up with the idea that gave birth to *The Final Cut* when the confrontation between realism and editing became hard to handle:

> I think the idea came in several different stages. First of all I was editing my documentary film at school. I was the only person in the editing room. The school had just got the first Avid so I spent nine months there and I sort of became the school's editing guy. So I was editing everyone else's movies because I had access to it. While editing my documentary it really became clear that this sort of myth of objectivity in documentaries is just myth. It's all the style and manipulating, it's drama. So that was one part of it. The second part was that I was away from my family who were on the other side of the world and I started thinking that if my life goes on like this, I'm going to start seeing them less and less. So I thought what I should do is shoot these really long interviews with my parents, like twenty-hour interviews that way I could get all their little antidotes [*sic*] and stories out of them and I could always watch that and enjoy their company. But I never did that because that it's [*sic*] not them. That would be replacing my actual memories. Fading as my memories are already. We all take pictures of each other and we all have home movies and there is a need we all have to visually preserve our lives. That combined with this realization about editing is how this idea came about. (Naim 2004b)

The Final Cut's narrative self-consciousness, which Garrett Stewart finds exceptional, characterizing the *The Final Cut* as the "most narratologically self-conscious of films" (Stewart 2006: 184),[26] seems to be springing from its maker's self-reflection as film editor on this unavoidable condition of filmmaking that editing is, and on his own personal relation—

interwoven with his cultural background—to cinema's treatment of time and memory. In *The Final Cut*, this finite character of editing is coupled with an ethical questioning of the 'validity' and truthfulness of the cut. As Fletcher asserts in the film (perhaps playing the role of Naim's mouthpiece), the rememories "distort personal history, therefore all history" and rewrite the past "for the sake of pleasant memories". With the fictional invention of rememories, and because of their claim to 'truth', the distortion of cutting is pushed to the extreme. The life-accounts that these commemorations produce are not only supposed to be 'real', but also final—thus unchangeable.

The nostalgia for the pre-cut acquisition, also evident in Naim's interview, is acted out in *The Final Cut*, both diegetically (by the function of the guillotine) and formally (by the structure of the plot). The latter is enabled by *The Final Cut*'s own carefully implanted fallacy, the false memory presented to the spectator at the beginning of the film. This "one single" memory that made Alan "who he is", the memory of Louis's lethal accident, has already been revealed to us in—what only much later proves to be— a flashback (and a false memory) placed at the beginning of the film, before the opening titles.[27] During a family visit in the countryside a summer long ago, Alan, at the age of ten, meets Louis, who asks him to join him in his play. The two kids soon get involved in an adventurous and playful exploration of the nearby area. They enter an abandoned construction in the middle of a field, and start exploring the unknown territory. Bold and adventurous, Alan is the first who steps on a wooden plank that bridges two floors of the old construction and successfully crosses the gap, without putting much effort. On the opposite, Louis, who appears as a rather passive and hesitant follower, is scared to cross, but Alan insists pushing him to make it. So Louis attempts to cross over, but, half way to the other side, the plank starts shaking and he loses his balance. Grabbing the edge of the opposite floor where Alan already stands, the rest of his body hanging in midair, he calls for help. But Alan stands frozen and does not reach out to catch the boy. So Louis falls down to the cement floor. Alan runs downstairs to find Louis's body lying on the floor, with a red pool of blood spreading under it. Terrified, he steps back and runs to the exit, passing in front of a wall where a few moments earlier, while he was still playing with Louis, he had engraved his name: ALAN. This scene from his childhood, the memory of this lethal accident that he unintentionally caused, haunts Alan for the rest of his life. It is the moment around which the pattern of his life unfolds in a web of guilt.

In this initial scene there is already a loop structure: a moment where the scene folds back upon itself—with the emphasis put on the name of Alan written on the wall of the warehouse, in the beginning and in the end of this interior scene. The closing of this sequence with Alan's name engraved on the wall suggests that this inscription is permanent, and will stay on the wall proving Alan's guilt. However, at this point the film deceives us—it is the

inscription of the whole scene's memory that will be challenged afterwards. This is not the only case of such implanted circularity.[28] *The Final Cut* is a film that constitutes its organization through a similar loop—and through a layering of 'implants'.

The main loop structure of *The Final Cut* is the one that makes the plot proceed towards the revisiting of this starting sequence. The memory of the lethal event that he accidentally caused is supposed to have made Alan "who he is", and the biochip that he discovers in his brain will give him—at a later point in the story—a unique opportunity to navigate through his own memory archive and revisit the incident that produced this memory. Even though according to the plot Alan attempts to join the resistance of anti-zoe hippies in order to block his implant's recording, his will to 'fight' his implant and resist his life-time's exploitation by EYE-tech has to rival with a personal realization: the one that the implant has the power to help him solve the mystery of his own past. Thus, blocking the implant's function with the electro-synth tattoo is not enough for him; Alan will soon attempt to access his own footage.

Managing to convince some colleagues to help him, Alan gets connected to his implant through electrodes, 'pirating' the data that the implant's camera sends to its microprocessor. Now he can really see through the camera-eye placed inside his brain. As his human eyes watch the camera's live inscription, Alan gets a view of the world through a lower-definition digital eye. The signal is directly transmitted to a guillotine placed in front of him running its editing software, and Alan has to use it in a careful and timesaving mode. He has only five minutes at his disposal, or else he risks dying. He uses the touchpad to navigate back in time, trying to arrive at the age of ten, when the crucial incident happened. He sees himself again as a boy in the mirror, he witnesses his parents' funeral, his first kiss, and, while time is running out, he finally arrives at the scene at the old warehouse, where we already saw him playing with Louis, in the beginning of the film. Here the spectator, primed with a memory of this scene since the opening of *The Final Cut*, participates on equal terms in the recognition of the correct scene. Alan watches again himself and the other boy sword-playing and eventually arriving at the dangerous spot, the wooden plank that bridges the opposite levels of the construction. But this time things seem slightly different: Louis appears now much more dynamic. Playing with the swords, he shouts to Alan: "come and get me!" When Alan crosses the gap on the plank, he asks Louis to meet on the ground floor, but Louis insists to cross too. Alan once more tries to stop him: "No. Wait. Wait. It isn't steady anymore". But Louis does not listen; he has already started walking on the plank, which now begins to shake. Standing in the middle of the plank, Louis screams: "I can't move!" Then Alan tries to give him directions: "Ok Louis, you can make it. Just a few more steps". But Louis loses his balance.

"Grab my hand!" he shouts. Alan reaches out to grab him but it is too late; Louis falls in the void. Alan only manages to grab an amulet that Louis was wearing around his neck.

Only seven seconds are left for Alan to discover what finally happened that day. He watches himself running down the stairs and arriving wheezy at the ground floor. Time is running out and his colleagues shout at him to unplug the electrodes. But Alan does not listen; he has come to the point where he as a boy faces the body of his friend lying on the floor. Then something unexpected happens. Alan accidentally steps over a can full of paint, the can is overturned and the red paint spreads all over the floor around Louis's body. Alan sees himself stepping back, so much absorbed under his shock and watching his shoes leaving traces on the thick red liquid that spreads underneath them, that he does hear the quiet coughing of Louis.

Time has run out and an electric shock throws Alan off his chair. His friends run to help him. When he finds his senses a few minutes later, he is not anymore the sin-carrier that he used to be: "I saw him. I tried to help. I told him to turn around. But he wouldn't listen. He fell but, he was breathing…!", says full of relief. "It wasn't blood. It was paint. Now I remember".

The 'final' cut made by Alan's memory, the scene that he 'chose' to remember, might have been distorting but not definite. Assisted by his zoe-implant, Alan manages to revisit and alter this one single memory that configured his subjectivity. Thus, the huge gap at the core of his life so far gets finally bridged, not with a wooden plank but with electrodes connecting him to a biodigital implant in his brain. Here *The Final Cut* seems to be fulfilling not only the desire of Alan for a taintless past but also, in a way, the fantasy of Naim to recuperate through recordings the living presence of his beloved ones.

Due to their decomposable and recomposable form that mimics the structure of the database, Cameron characterizes complex narratives as "modular". The process of accessing individual units in a synthesis and modifying, removing or using them to make a different construction, gives the overall synthesis a modular character. The recomposability of "modular narratives" extends, according to Cameron, to the ethical plane, especially in films with reverse temporal structure, as it creates the possibility of redemption for their characters (2008: 35).[29] One could argue that such a tendency towards redemption is also apparent in *The Final Cut*'s modularity. The main hero of the film edits others' lives and finally, assisted by his implant, manages to do the same with his own life. Thus, he gets the chance to weave a life-story relieved from guilt, purified like the rememories he makes for other people. But the possibility for this 'new' life does not take place intentionally, or following some kind of plan. It is rather discovered, as if it had always been lying before his eyes, even though a distorting,

subjective gap between the actual world and the mnemonic trace of its imprint, prevented him from seeing it. Rather than consciously driving his destiny, Alan attunes his agency to the one of the plot's "mind-game", which finally offers him the reassurance that this gap can be closed; that his technological prosthesis (the implant) can access and 'correct' his mnemonic imprints, and thus restore the feedback between his existence and the world that embeds it.

Because of its crucial role in the film's modular function, the zoe-implant technology is treated in *The Final Cut* with an underlying but profound ambivalence: despite all the moral critique that the plot communicates against the zoe-implant and its terrifying consequences regarding issues of privacy and truth distortion, in the end the implant proves to be exactly the only way left for Alan to find the truth about his own past and to feel relief in escaping from it. Although the criticism against it intensifies, making the anti-zoe protesters demand their right to "remember for themselves", as we read on their placards, *The Final Cut* does not seem to doubt the value of the implant's "miraculous gift", but only the human—immoral—treatment of it, in other worlds, the plausibility of the cut.

The protagonist of *The Final Cut* sees through the implant that his whole life so far has been founded on a mistake, a trick of his memory. At the same time, the implant provides him with a vision of himself before the moment of his subjectification in guilt.[30] This new vision fundamentally alters his perception of himself, and the pieces of his life's puzzle are finally brought together. The pre-cut footage of the zoe implant's biocamera is not falsified; on the contrary, it may set the carriers free from their own 'human' distortions. The implant provides the ability to store, retrieve, and ultimately circumvent the distortions of the unconscious. It offers Alan an almost transparent experience, mediated by the objectivity of the biodigital eye of the camera, and liberated from the subjective factors of guilt, trauma, or repression.

Stewart regards *The Final Cut* as the culmination but also the "dead end" of a cycle of films of "psychotemporal transport", or "recuperative time travel films", to which he includes films such as *Johnny Mnemonic* (1995),[31] *Minority Report* (2002), *Eternal Sunshine of the Spotless Mind* (2004) and *The Butterfly Effect* (2004). Stewart's analysis of *The Final Cut* illuminates the allegories of the zoe-implant technology, with its ability to violate "the passing present by a perversely redoubled self-presence" (2006: 177), effectuated by the biocamera's recording. But the recuperative function of the film also lies in the potential offered by the zoe-implant's digital 'backup' memory to revisit and 'correct' history, an option that in *The Final Cut* does not appear to be something more than a fulfillment of a mind-game. "In the end, he sees everything", promises another tagline of the film (IMDb); when Alan is finally able to "see everything" by combining his human limited memory with the 'objective' machine-memory of the implant, he comes to his own life's "final cut". The cracking of the film's code, the solution of its mind-game, seems to have a similar totalizing effect: the

solution was part of the game all along.[32] It looks as if *The Final Cut* has fulfilled its plot's purpose; it extracted its own implant.

Between the cut and the 'paste'

Modularity does not only characterize the story of *The Final Cut* (in the sense of the 'recomposable' destiny of the main hero), but also the plot and its structure. The opening scene—the memory of the play with Louis—is the film's own implant; it functions as a memory trace implanted by the film with the single purpose to be extracted later. In *The Final Cut*'s narrative puzzle, a problematic piece creates a distorted picture, and its replacement allows a different picture to appear. Thus, multiple (mind-)games are being played between the film and the viewer: not only Alan has to alter the perception/interpretation of his own life-story, but also the viewers are prompted to reinterpret the film's story. Both the self-identity of the character and the story become modifiable and modular, while the medium of such modularity appears to be digital.

The implant's footage bears the marks of real-time recording, and keeps track of the date, time and seconds of the inscription. It also displays the name of the carrier. The guillotine's software classifies the footage into distinct scenes and tags them with categories (for instance: "childhood", "puberty", "sleep", "career", "fears", "marriage" etc.). The categorization that the guillotine performs—which *The Final Cut* visualizes spatially through an impressive split-screen scene—makes it easy to navigate memory, access isolated scenes and, potentially, replace them. The function of the guillotine is imitated by *The Final Cut*'s plot structure. The film 'implants' an object (the false memory in the beginning), and structures its narrative so that it will retrieve and revisit the implanted clue (like Alan will do with the help of the guillotine) that will falsify not only the character's but also the viewer's mnemonic inscription of the event. Like Alan, the viewer will have to retrieve from his or her own memory the initial scene and compare it with the one presented towards the end of the film. *The Final Cut* thus imitates the modularity associated with digitization and nonlinear editing: informational inscription (as binary code) of sensory input makes it spatially accessible and modifiable, and alters the procedure of cinematic post-production. *The Final Cut*'s "guillotine" seems to be functioning in a similar way with contemporary nonlinear editing systems (NLE), enabling the instantaneous accessing of any frame or part of the film without the need to re-edit the rest (Evans 2005: 14). Although nonlinear editing systems do not delete ('final cut') footage and keep archive of multiple editing versions (EDLs or edit decision lists), the narrative of *The Final Cut* appears as much reluctant to abandon the idea of editing's permanent distortion as it is tempted to challenge the same idea through its diegetic

and formal modularity. This oscillation resonates with *The Final Cut*'s own technical production, as the movie was shot both in film (35 mm) and in digital video (the scenes of the zoe footage) (Naim 2004c). Moreover, *The Final Cut* was an experiment in digital projection for the production company Lions Gate and the theater chain AMC. The announcement on the website of AMC reads as follows: "AMC will present the film digitally, using AMC's proprietary Digital Theatre Distribution System (DTDS). The digital file of the movie will be distributed to AMC theatre locations via satellite".[33] The selection of a film that thematically (but also in terms of production) treats—and blurs—the borders between analogue and digital memory seems ideal for such an experiment.

The Final Cut's oscillation between the 'cut' (permanent distortion) and the 'paste' (modularity) is enhanced by its ambivalent stance towards technology. The trust to the zoe-implant's memory does not necessarily suggest a blind faith to its inscription: the latter can also be falsified, as there are, according to the story, also 'defect' implants, which "cannot distinguish what the mind sees from what the eye sees", and thus record hallucinations and dreams, instead of the input from the external environment. The film's ambivalent stance towards the technology of the implant is more an expression of disbelief towards the human inscription, because of its vulnerability to the 'cut'. *The Final Cut* undermines the trust to both the 'eye' and the 'I'. It thus displays characteristics of a new version of realism in which, as Elsaesser suggests, an "impersonal 'thing' or apparatus taking my picture, or capturing an event, is a better guarantee of my existence […] than the unmediated face-to-face, likely to give rise to misunderstandings" (2009d: 4).

Distortion, according to *The Final Cut*, happens already at the initial point of mnemonic inscription. The film's own implant, the false memory in the beginning, has been distorting too. In this respect, narrative (as a coherent causal-logical whole on which Alan's self-conception was based, starting from the incident in his childhood, as well as the logical sequence of events that the viewers gradually construct after the beginning of the film with the same incident), along with human perception and consciousness, is sensitive to subjective factors such as motives, traumata, purposes, distortions. If narrative always presupposes the intervention of the human factor (Bal 1985: 26), *The Final Cut* equates this intervention with distortion and loss. Where the narrative starts, both for the film (initial scene) and for the character (the memory of himself) there is always already a selection, a cut; and in the plot's 'time travel' finds expression an agency that wants to reach out to what remains unstructured and change the existing inscriptions.

As we might notice in *The Final Cut*, the paint's overturning is not the only revelation of the zoe-implant: when Alan managed to access its footage, the implant showed him that he had lived his life being enslaved not by machines (guillotines or implants) but by his own

persisting fantasy of omnipotence. The implant's footage suggests that he is not the final cause of his own life and misery, that he has no control over the others' death (Louis's) or life (the projects that he undertakes in his job as a cutter, attempting to grace the dead with immortality). Other factors, from the most significant to the most trivial, like that of an overturned can of paint, may change the outcome of situations.

In *The Final Cut*, "what the eye sees"—to use Alan's own words—is highly dependent on "what the mind sees". What Alan 'cut' out of his mnemonic trace has been the powerlessness of his body (which proved unable to help Louis), the time that slipped without him managing to catch up and react, the sounds (that revealed that Louis was still alive), all in all the markers of an affective experience that would shatter his fantasy of omnipotence; a fantasy which later Alan had to retain and base his self-conception on it, in order to justify his (distorted) mnemonic inscription, according to which he had instigated the death of another person. What Alan's memory retained was just the sight of a red liquid spreading under his feet, which he explained as blood, deleting all the other input he had received and adequately modifying his self-conception by weaving a narrative of guilt and victimization to fit into. Alan's going back to 'the scene of the crime' highlights what is no longer recoverable (his life so far) rather than what can be miraculously recuperated. The two modes of temporality at play in *The Final Cut*, the one found in the plot's reversal of time, and the other in the narrative's irreversibility (demonstrated by Alan's determination by the chance events and accidents of his early life, where the 'cut' first took place) do not contrast each other, but are rather interwoven, since the film resists both linear recuperation and permanent distortion.

Self-reflexivity and time

The Final Cut certainly does—though somewhat implicitly—prompt the viewer to become aware of the conditions of the film's making. The narrative is implicitly self-referential about issues such as the reality that films conceal, the selections that they make, the 'cuts' through which they proceed. As already discussed, the film is a product of the conscious attempt of Naim to reflect on the procedure of filmmaking as 'cutting' of recorded footage that used to be live, and making out of it coherent—but inevitably distorted—stories. A text's 'self-reflexivity' has been associated with such a (more or less explicit) self-conscious/self-expository move on behalf of the maker, that has a distancing effect upon the reader/decoder, suspending his or her immersion into the story and adding multiple layers of signification. Self-referential methods in art, literature and film have been considered tools that trigger critical reflection on behalf of the recipient. But this effect is not necessarily created through straightforward means but also through loops and infinite regress within the text (such as the

one of *mise-en-abyme*) that set in motion internal dynamics, which undermine the coherence and wholeness of the work. *The Final Cut* employs self-reflexive techniques that highlight its oscillation between modularity and distortion, recuperation and obsolescence, which at once complete and exceed the self-referential accounts of its maker(s).

As viewers of *The Final Cut*, we do not only realize the reverse temporal movement of the narration when this becomes diegetically enabled by the machine, the guillotine.[34] Rather, the function of the guillotine can be considered a self-referential device of the film, which, through a diegetic *mise-en-abyme*, communicates its own structure: It is not only the implant that within the diegesis navigates through time, but the plot itself is used as a time-juggling but also time-generating machine. So, even if the function of the implant in the narrative with its direct recording of lived experience might be one that leaves no "time of affective deferral within which to maneuver original impression into psychic trace, event into memory, no time for the willful construction of mental temporality per se" (Stewart 2006:189),[35] the recruitment of the implant as a structuring device does not redeem time but observes it, creating a temporalized experience. Thus *The Final Cut* turns the medium of the guillotine into a counterpart of its own complex organization.

But let us have a closer look at the film's nonlinear temporality at the micro-level of scene constitution. Towards the end of *The Final Cut*, a succession of reflexive framings disorients us just before the film's own 'final cut': As Alan runs to save his life from Fletcher who wants to use his implant against EYE-tech, a quick montage crosscuts two different kinds of POV shots: shots representing Alan's visual inscription, stylistically assimilated into the visual style of the rest of the film, and shots reproducing the—visual and auditory—inscription of his implant (the recording not only appears as having the colder colors of video but it has actually been shot by a digital videocamera). A temporal layering is created, culminating at the point of Alan's death (which we see through the footage of his zoe-implant when the recorded image dissolves into pixels), through this kind of juxtaposition of subjective, 'filmic' POVs from the character's present, and 'digital' POVs that have already become past and are being watched by someone else, at a later point in the narrative's temporal progression. Previous scenes of the film using the latter kind of POVs have primed us to consider them as images from zoe-implant footage, when it has already been 'read' by the guillotine. Not only the temporal but also the subjective indexicality of this crosscut scene is dubious, as we cannot be certain about who is looking either: it could be Alan, but then his vision could not have these marking signs (texture of image but also track of time and name), so it is likely that someone else looks through Alan's eyes; and this look could only come from a later point in time. A cut to the next scene makes explicit the temporal layering of the previous chasing sequence. Now, obviously after Alan's death, we see Fletcher watching the footage of Alan's implant. As

Fletcher looks absorbed in editing, the camera moves behind him to include, him too, in a *mise-en-abyme* of gazes. In these two succeeding scenes, *The Final Cut* makes use of traditional cinematic reflexive techniques constituted from "various *mise-en-abyme*-constructions [that] resemble looks into the mirror" (Elsaesser and Hagener 2010: 74). But this technical reflexivity, the creative possibilities of which have perhaps been exhausted by the modernist cinema of the past—and especially the European *avant-garde* filmmaking of the 1960s and 1970s—is here intertwined with a time-juggling that juxtaposes past, present and future. It is not just the reflexive framing of gazes but also the temporal constitution of the scene that produces this vertigo.

The reflexivity of *The Final Cut*, multiplied by the insertion of a third 'observer' (besides the camera and the characters), i.e. the implant, facilitates the creation of backward and forward time-loops, distinguished both at the level of the story/*fabula* and at that of the plot/*syuzhet*. These loops create alternative views on what has already taken or will take place, deceive and play with the viewer and his or her cine-literacy (which has been based on well-established narrative conventions), and present in a tacit way a narration that is self-conscious (as the 'voice' of the author and his self-reflexivity merges with the self-reflexive means of the filmic discourse) and demands an equally alert viewer.

In the last scene of *The Final Cut*, as Fletcher edits the footage of Alan's implant, he watches on the screen of his computer the reflection of Alan in the mirror. Fletcher promises to the reflection of an already dead Alan that the latter's life will finally "mean something" (as Fletcher intends to use Alan's implant to trap a 'big head' of EYE-tech in a moral scandal, and thus harm the company's profile). The film's ending (or 'final cut') comes with an additional mind-game right before the closing credits. To what appears to be a point-of-view shot through Fletcher's eyes on Alan's face in the mirror (and now on the screen of Fletcher's computer), the reflection of Alan leaves the frame, suggesting that it is neither Alan looking at his reflection, nor Fletcher looking through Alan's eyes. At the point that the film ends, the mirror/screen waits for us, the viewers, to fill it, not with our reflection in it but with our own mnemonic records (as we just now remember that we can only see through the eyes of the implant carrier when watching POVs from an implant). However, these records are at once put in doubt: as soon as Alan leaves the frame, then who is looking at the mirror? This 'mind game' is of course not convincing as closure; it has rather been *The Final Cut*'s communicative condition all along, if we consider the false memories of the character. Only now it is the viewer who is more directly invited to this game. Self-reflexivity thus takes us into the loop, where (narrative) closure is no longer possible. As the German DVD title of the film suggests, "*Dein Tod ist erst der Anfang*" (the end is only the beginning).

2. Framing the revival of (self-)reflexivity in complex films

The notion of self-reflexivity, broached in the previous chapter through the analysis of *The Final Cut*, will now be put into focus, as one of the most characteristic features of contemporary complex films. The current return of self-reflexivity in cinema in my view entails important continuities but also breaks with the traditional theorization of the term in film theory and in narratology. In this chapter I will attempt to disentangle the complicated notion of self-reflexivity, and distinguish between different levels, functions and theoretical backgrounds. I find this endeavor necessary in order to understand what is complex in complex films, and how self-reflexivity is one of the fundamental processes in which the complexity of these films resides. But before getting to the particulars of self-reflexivity in complex films, I will first examine its role in the narratological and the film-theoretical traditions.

In grammar, a "reflexive" verb is one whose direct object is identical to its subject (*The American Heritage Dictionary of the English Language*). Reflexive statements are "propositions or texts that in some way take into account their own manufacturing conditions" (Pels 2003: 164). In mathematics and logics, "reflexive" is called the relation between an element and itself. A common denominator of all these different aspects of reflexivity might be the "self-referential or 'iterative' aspects of any kind of thinking" (Sandywell and Beer 2005). Taking into account the long and divergent genealogy of reflexivity—in disciplines such as philosophy,[36] anthropology, sociology,[37] and art theory—confusion might arise when one does not distinguish between two different levels of self-reflexivity: the one of first-degree self-reference, and the other of the iterative and dynamic process that self-reference of a second degree, or reflexivity, triggers.[38] In this chapter it is mainly the first level of reflexivity that will be addressed, through the theorization of the concept in the traditions of narratology and film theory. However, reflexive paradoxes or 'loops' have also emerged therein, and the workings of this 'systemic' kind of reflexivity will be particularly addressed in Chapter 3.

Self-reflexive discourse and the borders of narrative

Within the context of a multi-disciplinary interest in reflexivity, especially in the second half of the 20th century, narrative theory has primarily addressed the textual modes of self-reference. In Gérard Genette's tripartite model of narrative,[39] self-reflexivity would correspond to the analytical category of "narrating instance", the manifestation of which, in the form of "discourse", disrupts the "récit" (narrative). In his article "Frontières du récit" (1966) Genette refers to discourse (*discours*), in other words, to the voice of the author and his

or her self-referential accounts, as 'intruding' the text and suggesting a threat to the purity of narrative.[40]

The distinction between narrative and discourse was initiated by Aristotle, who considered separately certain types of poetry, "lyric, satiric and didactic poetry" (Genette 1976), that were not representational, that is, they did not reflect external actions (real or fictional), but rather expressed the poet's own thoughts. In the 1960s the French linguist and semiotician Emile Benveniste reintroduced the distinction between narrative as story (what he called *histoire*) and discourse. Benveniste defined the pure form of narrative as one that remains uncontaminated by the subjectivity of discourse:

> […] the objectivity of narrative is defined by the absence of all reference to the narrator. "Truly there is no longer a 'narrator.' The events are chronologically recorded as they appear on the horizon of the story. Here no one speaks. The events seem to tell themselves". (Genette 1976: 9, quoting Benveniste 1966, *Problèmes de linguistique générale*, pp. 237-250)

Chronological sequentiality here also appears as a feature of "pure narrative". Genette stresses that such instances of "pure" narrative,[41] such as the ones that Benveniste finds in some passages of Balzac, are isolated, and that almost every text comprises of both narrative and discursive passages (1976: 10). This hybridization notwithstanding, a tension still lies within the discursive, and in this sense, self-referential passages of stories: "any intrusion of discursive elements into the interior of a narrative is perceived as a disruption of the discipline of the narrative portion" (10). This is not the case when narrative is embedded in discursive modes of expression. "Narrative inserted into discourse transforms itself into an element of discourse, but discourse inserted into narrative remains discourse and forms a sort of cyst, easily recognized and localized. One might say that the purity of narrative is more obvious than that of discourse." (10-11) Continues Genette:

> […] discourse has no purity to preserve since it is the natural mode of language, the broadest and most universal mode, by definition open to all forms. On the contrary, narrative is a particular mode, marked and defined by a certain number of exclusions and restrictive conditions (no present tense, no first person, etc.) Discourse can "narrate" without ceasing to be discourse. Narrative can't "discourse" without betraying itself. (11)

In the literary 'experiments' of the 20th century, from Hemingway to Robbe-Grillet, Genette sees the need of writers to deal with these incompatible modes of utterance (discourse and narrative), either eliminating the one or the other; and in the novels of his contemporaries Philippe Sollers or Jean Thibaudeau, where narrative seems getting absorbed in the act of

writing, Genette finds indications of narrative's prospective obsolescence:

> Perhaps the novel, after poetry, will definitively leave the age of representation. Perhaps narrative, in the negative singularity that we have attributed to it, is, like art for Hegel, already for us a thing of the past which we must hasten to consider as it passes away, before it has completely deserted our horizon. (12)

The ideal, pure and isolated narrative, narrative by definition, is, already in the 1960s, considered—by one of the most prominent narratologists—dead. And one of the factors that contributed to the realization that this ideal form is no longer possible has been the self-referential mode of utterance that discourse stands for. In the narrative model that Genette later developed, he analyzed the complex forms of "narrative discourse" (here, narrative is meant as a particular form of discourse in the sense of speech and ekphrasis, and not in that of self-reflexive discourse) in the dynamic interplay between narrated text (*récit* or narrative), story and narration.

Metanarrational and metafictional reflexivity

Recent writings in narratology treat self-reflexivity through the categories of "metafiction" and "metanarration". Metanarration takes place at the level of discourse (both diegetic and extra-diegetic) and involves "comments […] concerned with the act and/or process of narration".[42] While metafiction concerns instances of self-reflexivity particularly in narrative *fictions*, and has an anti-mimetic character, metanarration just "thematizes" the act of narration, and, when used in non-fictional narratives, can also serve the credibility of the narrated events (Neumann and Nünning 2010). Forms of metafiction can be self-reflexive without involving self-reflexive discourse. For example, according to Werner Wolf, *mise-en-abyme* is a type of "implicit metafiction", because it is a non-narrational instance of self-reflexivity (see Fludernik 2003). Although here metafiction does not occur with the intervention of the narrator's or author's comments upon the act of narration (by discourse), it still is self-reflexive, because, through the unreal effect that it creates, fiction demonstrates itself as such. The reflexivity of metafiction is thus, according to Peter Stoicheff,

> […] the product of its desire to expose the covert structures that allow fiction to masquerade as reality; it is always involved in the simultaneous process of manufacturing illusion and revealing its artifice. It thus becomes an eternal system of creating and deconstructing, whose self-interpreting pattern is realized in the *mise-en-abyme* that eternally defers the revelation of truth or knowledge […]. (Stoicheff 1991: 89-90)

Both metafiction and metanarration have an anti-mimetic and in this sense anti-narrative character, as long as the criterion of subjectivity is used. According to Genette, the anti-narrative function of discourse lies in the insertion of subjectivity to the otherwise seemingly 'objective' sequence of events (*récit*). The subjective factor intervenes through everything that undermines objectivity, either at the level of fiction (metafiction) or at that of the act of narration (metanarration).

When it comes to film, the boundaries between the two types of self-reflexivity that contemporary narratology distinguishes (metanarrational and metafictional), become blurred. The absence of direct instances of (extra-diegetic) discourse in film, makes it hard to distinguish self-reflexivity in the first place, let alone the difference between fictional and narrational self-reflexivity.[43] Yet, there are ways in which film theory (and film narratology) has identified the particularities of filmic self-reference, and these will be later discussed in the context of contemporary complex films. The recent proliferation of these traditionally anti-narrative instances in films points at modes of textual and cognitive organization that thrive on self-reference, and perhaps transcend narrative in the strict, 'pure' definition of the term, against which narratology has always been struggling, without however, in my view, having achieved a radical emancipation from it.

Self-reflexivity in cinema

In cinema, the interruptions of the 'purity' of narrative by the narrating voice is not as common as it is in literature, because the cinematic narrator has less means available to address the viewer directly. Voice-over is of course one of these means. Despite the long presence of this technique throughout cinema history, voice-over has been faced with suspicion and occasionally with scorn by film critics because of its "hybrid" nature that brings film close to literature (Kozloff 1988). But, when speech, taking the form of self-referential comments of the narrator (who can be a protagonist at the diegetic level or the creator/author at the extra-diegetic level), and/or of direct address to the audience, is not employed, then by what means is self-reflexivity expressed in cinema?

Taking a step away from the self-reference of the author, and in this sense, following the art-theoretical tradition more than the literary one, film theory still had to account for the self-reflexivity of films themselves. This suggests an ontological rather than an epistemological stance, and in this respect Stanley Cavell offers a good starting point to approach cinematic self-reflexivity. Thus, for him self-referential are the ways that "movies question and acknowledge themselves" (Cavell 1979: 123). Cavell traces in Hollywood films of the interwar period the forerunners of the reflexive practices that later flourished in cinema

(124). Especially in comedies such as those of Buster Keaton and Groucho Marx, he detects the early self-referential capacities of films, usually taking two forms: "alluding to other movies" and/or "calling attention to the camera at hand" (124). Cavell sees continuity between these early Hollywood techniques and the subsequent flourishing of self-reflexivity via the modernist filmmakers of the *Nouvelle Vague*. Thus, the "sudden storms of flash insets and freeze frames and slow-motions and telescopic-lens shots and fast cuts and negative printing and blurred focusing" (122), proliferating in modernist films of the 1960s, are expressions of self-reference. Everything that calls attention to the technique and process of filmmaking, and thus to the agency behind it—if not necessarily to the particular 'auteur' handling this technique—is a form of cinematic self-reference. The mediation of speech is not necessary for films to be self-reflexive, and that is why film theorists often derive their examples from early silent films, belonging to the so-called "cinema of attractions".[44]

David Bordwell in *Narration in the Fiction Film* has used the term "self-conscious" narration, instead of that of "self-referential" or "self-reflexive" narration. Borrowing the term from Meir Sternberg, he states that the self-consciousness of a film's narration (which may appear in different degrees) depends "on how much it acknowledges the fact that it is presenting information to an audience." A film's hetero-reference (its reference to the audience) is intertwined with self-reference, as long as the acknowledgement of the audience also implies the acknowledgement of the film itself as a medium of communication. Bordwell finds that every typical fiction film shows a higher degree of self-consciousness in the opening and closing sequences than in its main part where the narrative unfolds (1985: 25). Here a tension between narrative and self-conscious narration is also being drawn, this time in the medium of film.

Although the way in which a film communicates is different from that of a printed text, it was especially literary and semiotic models of self-reference, which became influential in the decades of 1960s and 1970s, that determined the conceptualization of self-reflexivity in film theory. Moreover, the (post-)Marxist and structuralist tradition of film theory stepped on self-reflexivity's anti-mimetic character, to associate the term with an ideologically loaded 'break with the illusionism of the spectacle'.

Roland Barthes had a significant contribution, as narratologist David Herman notes, in making reflexivity a "structuralist desideratum" (Herman 2000). According to Barthes, the narrational level implies a degree of self-reflexivity because its role is not to transmit narrative but "to make it conspicuous" (1975: 264). Barthes pointed at the dangers inherent in the tendency of bourgeois society to "naturalize narratives" by de-emphasizing the codes of the narrative situation, its self-reflexive markers, as I would add. In his *S/Z* (1970) Barthes introduced a qualitative distinction between "readerly" (*lisibles*) texts, which create a sense of

transparency and prime passive reception, and "writerly" (*scriptibles*) texts, which, through self-reflexive methods, call for the viewer's self-conscious participation in the production of meaning (1974: 4).[45] Seen through an anti-illusionistic perspective, self-reflexivity became a rather popular notion in film criticism of the 1970s, which was significantly influenced by structuralism. Apparatus theory, drawing not only on Barthes but also on Althusser and Lacan, considered cinema a medium intrinsically ideological, and pointed at the necessity to find ways to resist the imposition of the apparatus over the spectator's consciousness. One of these ways has been found in self-reflexivity.

Self-reflexivity seems to have been a "desideratum" not only of structuralist film theorists but also of filmmakers during and after the 1960s. As Robert Stam points out, every work of art contains some degree of self-reflexivity, since there is no such thing as complete illusionism even during the reign of mimetic culture and the models of perception that it favored. Yet, there are certain periods in which self-reflexivity acquires significant dimensions or visibility and becomes embodied "in novels, plays, and films which break with art as enchantment and point to their own factitiousness as textual constructs" (1985: xi). In the case of film, one of these "peaks" of self-reflexivity was, according to Stam, the period from the late 1950s until the 1970s. It was then that the textual and intertextual nature of self-reflexivity, as discourse and *écriture*, came to the fore, under the influence of the French "textuality turn". *Nouvelle Vague* is a characteristic example of the proliferation of self-reflexivity in films of that period and geocultural area. This peak of self-reflexivity in cinema has not been triggered only by the influence of structuralist thought, though. Rather, Stam points out the influence of artists and specifically that of Bertolt Brecht, who had already been a pioneer of self-reflexive techniques in theatre. Through the work of Brecht, self-reflexivity, which for Stam does not have an *a priori* politically progressive value, may be seen as a "politicized esthetic" (1985: 7). Brecht's use of self-reflexive techniques aimed at a realism beyond mimetic representation, one that would "lay bare society's causal network" (Stam 1985: 17, quoting Brecht from "The popular and the realistic", 1938, p. 109). By transforming the audience's expectations, Brecht sought to prepare a new audience able to adjust to "new modes of social life" (Stam: *ibid*). Hence, Brecht's use of self-reflexivity had a significant impact on "cinematic theory and practice, and especially on the films of Godard, [Alain] Tanner, and others" (10). In the self-reflexive turn of cinema in the 1960s and 1970s Stam sees the influence of a politicized and 'activist' conception of self-reflexivity, one which "breaks the charm of spectacle in order to awaken the spectator's critical intelligence" (9).

The accounts in art and film criticism show that there has been a growing tendency after the 1960s to consider (self-)reflexivity as "a crack in the mirror", according to anthropologist's Jay Ruby's expression. "To be reflexive is to reveal that films—all films,

whether they are labeled fiction, documentary, or art—are created, structured articulations of the film-maker and not authentic, truthful, objective records" (Ruby 1988: 44). Ruby also points at the need to distinguish between self-reflexivity and the self-referential accounts of the author. Traces of the makers' self-reference can be found in almost every film, according to Ruby, but self-reflexivity goes beyond the self-referential, self-conscious or autobiographic accounts: it instructs the viewer about the process of world production, which is involved in every artistic or scientific creation (1988: 45).[46] In my discussion of *The Final Cut* in Chapter 1 I emphasized the continuity but also the distinction between the self-referential accounts of the filmmaker and the self-reflexivity of the film itself, through its complex structure.

As Monika Fludernik notes (2003), until recently the metafictional and metanarrational aspects of self-reflexivity have been used interchangeably, and as it becomes apparent, this has not only been the case in literary theory and narratology but also in semiotics and film theory. The metanarrational capacity of self-reflexivity, pointing at the way a narrative or a film is constructed, has evoked an allure of anti-illusionism that addresses every cultural text as a factitious, even when fictional, construction. Particularly in film, self-reflexivity, even when detached from the actual narrating 'voice' and Genette's literary discourse, it is also found in tension with the supposed objectivity of 'pure' narrative, as well as with that of the filmic mode of representation, which has been considered inherently mimetic. Indicative of this view is the comment of Scott Lash, who notes that cinema is closer to mimesis than to semiosis, which is more tied to language: "If nineteenth-century realist narrative as cultural object is reflexive through highly mediated semiosis, then ideal-typically organized capitalist cinema—in its diachronic, tonal visuality—is a cultural object which is reflexive through less mediated iconic representation" (1994: 138).[47]

The theoretical background of self-reflexivity sketched above determined the way it is until today conceived in film theory, and also in the cognitive strands of film narratology. As representative of the latter, Edward Branigan places (self-)reflexivity among other "anti-narrative devices", as he calls them, such as "irony, paradox, contradiction, novelty, or alienation" (1992: 84). The reflexive device is for him "prescribed to provide a critical and intellectual distance ('opacity') that frees the viewer from delusion."

Film complexity and self-reflexivity

In the 1970s film theoretical discussions about self-reflexivity, the latter was quite normatively expected to be 'authentic', that is, to go beyond the borders of the medium's formalism. This is because many theorists have argued that self-reflexivity might indeed attract the attention to the process of mediation, but does not always suggest an (ideologically

progressive) exit from the factitious world of fiction or spectacle; on the contrary, it often creates a closed loop that blocks rather than enables the distanced critique of this world. As Dana Polan contends (1974), even when an artwork becomes highly self-reflexive, it is not necessarily politically progressive. Rather, its effect lies in the heightening of "interplay between credulity and skepticism" or "confirmation and contradiction", which is an inherent quality of art. But every skepticism and contradiction can very well serve the intrinsic need of art for self-innovation rather than for social innovation. In this respect, self-reflexivity—and its role in modernist avant-garde techniques—is for Polan a form of "emphasized formal complexity" with no specific political nuances.

Contributing to the same *Jump Cut* issue with Polan (1974, no. 4), Chuck Kleinhans defines a film's complexity based on the notion of self-reflexivity. Complexity for him stands for the "sophistication" of a film, defined against the simplicity of form and content. Kleinhans distinguishes between two types of self-reflexivity and consequently two types of "complex" films: those that are merely "self-reflective", perhaps formalistically experimental but still within the confinements of bourgeois ideology (as an example of which he mentions Jean-Marie Straub's *Othon,* 1969), and the others that are (also) self-critical and "didactic" (as exemplary of which he regards the films made by Godard and Gorin). Thus a complex film for Kleinhans may have two possible functions: it "either forces self-reflection on itself as film […], or in a more Brechtian vein the film can be not merely self-reflective but self-critical in a larger context…making explicit its ideological basis to the audience". Through its complexity, a film demands equally complex responses from its viewers. However, the self-reflexivity (or self-reflectivity, as Kleinhans calls it) of films is seen merely as a play with the genre codes and the conventions of form, to which the viewers get easily accustomed—as it happened for instance with the popularization of self-reflective techniques in television commercials after the mid-1960s—so that, after a certain point, as Kleinhans maintains, the same reflexive techniques can no longer evoke complex audience responses. Moreover, even when complex responses are produced, they do not necessarily have a political—or socially critical—character.

Except for the Brechtian techniques of self-reflexivity, some of the more 'implicit' self-reflexive expressions and techniques have been considered to be postmodern tropes (or better, tropes compatible with postmodernism) of emphasized formal complexity. Thus, with the passage of time self-reflexivity got associated with postmodernism, and not only with modernism and its *avant-garde* movements. An inevitable consequence has been that self-reflexivity, especially since the 1980s, received criticism similar to the one that postmodernism itself received. As Stam notes, "the reflexivity of a certain avant-garde is eminently co-optable and easily reappropriated by the hegemonic culture. Even the

deconstructed texts defended by *Tel Quel* or *Cinétique* end up, at times, by playing innocuously with purely formal categories such as representation, closure, or the illusion of presence" (16).[48] From an anti-postmodern stance, self-reflexivity and its more implicit techniques is not considered a counterpart for thought's emancipation but an agent of affirmation, less critical and more cynical, even a mode of participation in the flows of late capitalism (Elsaesser and Hagener 2010: 74-75). As literary critic Patrick O'Donnell notes (1996), "reflexivity, parody, mimicry, […] are the last encrypted refuges of an imperialism that converts everything into simulacra, images constructed upon images".

Following this thread of criticism towards self-reflexivity, a second contrast is being formed: from the one between self-reflexivity and illusionism, to that between self-reflexivity and critical thought. These seem to be diametrically opposite conceptions of the term, however, they are both based on the assumption that there is an inherent mimeticism both in fiction and film (and their combination). Self-reflexivity might correct this 'flaw'—and at times it has been used for this purpose—either explicitly and normatively or implicitly, by making the filmic or narrative text more complex than it is supposed to be.

There have also been narratological and film-theoretical approaches that value the formal complexity that self-reflexivity—even in its textually implicit expressions—effectuates and the more complicated relationship it establishes with the beholder. The blurring of boundaries between fiction and reality that reflexivity effectuates may be *meta*-fictional/narrational but not necessarily *anti*-fictional/narrational. The creation of illusions and the exposition of factitiousness make the texts richer and inherently dynamic. Here self-reflexivity also tends to transgress the reality-illusion dilemma, and with it, the normative mission it undertook through the apparatus theory tradition. According to what Jeffrey Williams, referring to post-modernist (literary) fictions, calls the "reflexive paradigm of narrativity" (1999: 145), self-reflexivity—both metafictional and metanarrational—expressed through features "such as narrator's comments, so-called narrative intrusions, frames, embedded stories, etc." (50), dissolves the distinction between interior and exterior, and "complicates the layering of the narrative text" (46). It also goes beyond "the simple exposure of the 'illusion' of fiction" (90). Reflexivity does not have an anti-illusionistic mission, neither leads to a 'truth' outside the text. A story's origins are always deferred by reflexivity, thus it is not adequate to describe the latter "in illusionist terms, […] as self-consciously exposing fictionality" (102-103).

But also in film theory and *avant-garde* filmmaking tradition, the implicit workings of self-reflexivity have been emphasized. Elsaesser and Hagener connect the notion of reflexivity with a metaphor of cinema as "mirror", which was also popular in the 1960s and 1970s film theory. The mirror-metaphor expressed the self-reflexive aesthetics of "doubling and

mirroring" that characterized auteur cinema in the 1960s (for example, in films such as *Le Mépris, Blow Up, 8½*). Here the reference is not only to the French new wave but to a broader range of *avant-garde* filmmaking. Thus, according to Elsaesser and Hagener, through techniques such as "nested narration (a film within a film), […] pictorial framing which highlighted the constructedness of the *mise-en-scène*, or through an accentuated paraphrasing of traditional plot stereotypes, genre patterns and pastiche citations" (75), cinema developed its own "language of crisis" in order to express a self-critical stance towards itself as an illusion-generating technology (74-77); this language proved to be productive for cinema instead of dismantling. Similar to the "reflexive paradigm" of Williams described above, according to Elsaesser and Hagener "the metaphor of the cinema as mirror blocks this passage to any world clearly labeled either 'outside' or 'inside', rendering the relationship of spectator and screen considerably more complicated" (2010: 56). The reflexive *mise-en-abyme* constructions, doublings and layers that made filmic texts more complex, are here considered to increase the complexity of the "encounter" between the film and the viewer. The contemporary use of self-reflexivity by 'complex' films might be indicative of the development of another language of crisis, which however has very different sources from those that influenced the filmmaking of previous decades. Contemporary expressions of self-reflexivity thus need to be contextualized and analyzed with an eye to the past as well as to the current developments in the media sphere, and this might need a shift from the narratological to a different analytical perspective.

An anti-narrative device that 'frees the viewer from delusion', a formalistic experimentation that stays more or less indifferent towards its critical impact upon the viewers, or a *mise-en-abyme* that makes the border between inside and outside indistinguishable: against the backdrop of this broadly sketched genealogy of the theory of self-reflexivity, its function as a counterpart of complexity will be put under scrutiny in the following part of this chapter, in the context of contemporary complex films.

Self-reflexivity in contemporary complex films

There have been analogies drawn between the modes of narration that have characterized post-classical Hollywood after the 1970s and those of recent complex films, with self-reflexivity (or self-reference) being an important axon of this analogy. Self-reference is, according to Elsaesser, the characteristic that most evidently differentiates between classical and postclassical narration. Here self-reference and self-reflexivity is coupled with "knowingness" or "self-consciousness" of the narration, categories that have already been mentioned earlier in this chapter. Thus, post-classical films show an intensified self-

consciousness, which is combined with "a willingness to display this knowingness and make the audience share it, by letting it in on the game" (2002: 78). As Elsaesser points out: "It is this knowingness […] that gives, with its several reflexive turns, the label 'post-classical' its most defensible validity and, perhaps more problematically, its only stable application" (79).

Eleftheria Thanouli has extended the post-classical paradigm outside Hollywood, to the modes of contemporary world cinema narration, using examples of films that have also been discussed as cases of complex storytelling, such as *Chunking Express* (1994), *Run Lola Run* (*Lola Rennt,* 1998), *Fight Club* (1999) and *Magnolia* (1999). Thanouli finds in these films too, the characteristic self-reflexive 'trademark' of the post-classical paradigm. Post-classical self-reflexivity disrupts the continuous and linear style of classical narration, and Thanouli considers it a proliferation and intensification of past *avant-garde* techniques, through "disruptive visual effects" such as "fractured compositions, jump-cuts, different color schemes and jerky camera movements" (Thanouli 2008: 11). But also the techniques of "back projections, collages and optical tricks", neglected in the past as "too artificial or self-reflexive", in contemporary world cinema make an impressive comeback, as Thanouli maintains (2006: 189). The self-reflexivity at the level of cinematography and montage (the level of the film's 'craft', which also determines the textual form of its narratives), is accompanied by self-reflexivity at the level of narration: post-classical films appear to be highly self-conscious, in the sense that, as Thanouli maintains, "the narrating act comes forward" throughout the whole film, acknowledging the audience, providing them with clues to comprehend the story and showing its knowledgeability and spatiotemporal omnipresence (2006: 192).

Bordwell notices a high degree of self-consciousness in the films that he calls "network narratives", in which he includes, among others, *Pulp Fiction*, *Chunking Express*, *Magnolia* and *Babel*. He considers marks of this self-conscious stance, techniques such as direct glances to the camera (e.g. *Les Passagers*) and devices such as crosscutting, intertitles, montage according to a motif, time-juggling, and openly suppressive narration (Bordwell 2007: 210, 211). As it also happens in *The Final Cut*, the suppression of information by the film might become more overt at a later point, usually that of the plot's twist: "a film might pretend that nothing is amiss and lead us to think that we have full information. Later, when we recognize that the narration has pulled a fast one, it becomes more overt" (210). But also the non-sequential ordering of events in a film is a form of overt, self-conscious—and self-referential—narration; a narration that also makes the viewer conscious of the presence of a narrative principle that manipulates the telling. The 'knowingness' of the narration is self-referential at the discursive, metanarrational level.

Genette was perhaps the first who indicated the self-reflexive function of time-juggling (cases of "anachrony") in (literary) texts. Referring specifically to "prolepses"—the premature reference to future events, the equivalent of which in cinema would be the device of "flashforwards" (Chatman 1980: 64)—Genette states that the latter are "not only data of narrative temporality but also data of voice", which "bring the narrating instance itself directly into play" (Genette 1986: 70). This type of self-reflexivity is strongly communicated by contemporary complex, or "modular", films too.[49]

Their unwillingness to 'suspend disbelief'—considered to be a precondition for narrative immersion—gives contemporary complex films an intensely self-reflexive character. In parallel, there is a constant attempt to orientate the viewers' attention towards mediation (as opposed to transparency) that characterizes not only the film's world but also the world that the viewers live in, permeated by informational networks (Bisonnette 2009). In this context of "hypermediated realism" (Bolter and Grusin 1999), self-reflexivity not only points at how reality is being transformed and 'augmented' through various media, but also, and especially, how only through these we can access reality (just like the protagonists often attempt). The same holds for our 'enjoyment' of the films. Pleasure and connection to the story world comes through an awareness of the medium and its manipulation.

Even though it has perhaps exhausted the 'radical' potential it once contained, self-reflexivity is all but absent from the stage of contemporary complex films, and many analysts broach this issue, with some of them emphasizing its 'metanarrational' and others its 'metafictional' aspects, without however using these categories. Some also point at the articulation of self-reflexivity with complexity in these films, even though what does this complexity stand for is not precisely defined. As Erlend Lavik notes, the way that recent complex narratives in film and television attract the attention not only to their diegesis but also to the way their narratives are constructed, develops hand-in-hand with their complex structure: "those films that are cited in pretty much every account – *21 Grams*, *Adaptation*, *Fight Club*, *Memento*, and *Pulp Fiction*, for example – are both unmistakably complex and reflexive; moreover, their complexity and their reflexivity are intertwined" (2007: 37). It has also been suggested that in complex films such as *Pulp Fiction* reflexivity becomes a game in which the viewer finds pleasure, and goes hand in hand with the films' complex structure: "the way one's understanding of the story develops along with one's understanding of the structure of the film" (Plantinga 1994).

Such entwinement of self-reflexivity with film complexity raises questions regarding its traditional theorization as an 'anti-narrative' device. In the 2006 special issue of *The Velvet Light Trap* on narrative and storytelling, Jason Mittell considers the kind of "operational reflexivity", as he calls it, that complex narratives show as a "narrative special effect" (35) that

differentiates contemporary complex narratives from modernist reflexivity whose effect was the distance from the spectacle. Mittell notes:

> This is not the reflexive self-awareness of Tex Avery cartoons acknowledging their own construction or the technique of some modernist art films asking us to view their constructedness from an emotional distance; operational reflexivity invites us to care about the storyworld while simultaneously appreciating its construction. (2006: 35)

Mittell's "functional" self-reflexivity stands closer to metanarration than metafiction. In his view, complex narratives are not so much criticizing the factitiousness of fiction but demonstrating the power of discourse and of narration itself.

> This operational aesthetic is on display within online fan forum dissections of the techniques that complex comedies and dramas use to guide, manipulate, deceive, and misdirect viewers, suggesting the key pleasure of unraveling the operations of narrative mechanics. We watch these shows not just to get swept away in a *realistic narrative world* (although that certainly can happen) but also to watch the gears at work, marveling at the craft required to pull off such narrative pyrotechnics. (35; emphasis mine)

At this point a paradox is raised. Taking into account that, as Genette has demonstrated, discourse and its markers have an anti-narrative role, then the paradox can be put like this: How can narration be empowered by the same means that narrative (the *récit*) is dismantled? In this line of thinking, the proliferation of *discours* in contemporary films could be seen as indicative of the end of narrative, as Genette had already predicted in his commenting upon the (post)modernist experimentations of *nouveau roman*. The problem for me lies, as I have already pointed out, in the definition of the word narrative itself, and its connotations of a certain objective and 'realistic', in the sense of mimetic realism, representation, which would imitate the causal-logical and spatio-temporal sequence of events in an idealized version of the real world. By adding many layers and dimensions of analysis, Genette and other prominent narratologists demonstrated that narrative involves a complex textual and cognitive weaving.[50] However, it is the laws of causality and spatiotemporal sequentiality, presupposed or expected in narrative, that introduce an internal tension with all the 'anti-narrative' characteristics of texts, such as the one of self-reflexivity.

One possible solution to the problem of how an anti-narrative device makes narration more interesting and engaging would be to omit the word narrative and replace it with the notion of diegesis, which indeed, may well be enforced by the discursive, anti-narrative techniques. Particularly the notion of the cinematic diegesis that Elsaesser has suggested

proves useful: according to him, the diegesis, traditionally conceived as the world that a story/narrative creates, has to include, in the case of cinema, not only the space inside the screen (the depicted world and its temporal, spatial and agential markers) but also the subject and body of the viewer, in the actual (theatrical) situation, and the way s/he relates to the screen (2006). In this model of diegesis, the deictic markers that establish this relation, i.e. the film's discourse, become also part of the diegesis, of the constitution of a filmic world. Therefore, according to this view, the anti-narrative self-reflexive devices, part of a film's discourse, are actually enforcing the diegesis. In contemporary complex films self-reflexivity involves the viewer more actively into the construction of the diegesis, which includes the story world (another term that has been used by Herman as an analytical category that combines story and discourse—see Herman 2002—and is, according to my opinion, more functional than that of narrative) and the spectator's world. Reflexivity triggers the complex constitution of this expanded diegetic world, rather than its decomposition; it becomes an organizing principle, as soon as it engages the viewer in the construction of the diegesis.

From here the metanarrational and the metafictional aspects of self-reflexivity can be placed in a continuum, as metafiction is also present in contemporary complex films, especially those characterized as "puzzle" or "mind-game". In the contemporary 'mirrors' of complex films, self-reflexivity's effects of "distancing and estranging" are duplicated inside the story worlds, where, as if our avatars, the protagonists also experience the effect of an agency that manipulates their experience—in the same way that the narration manipulates our own as viewers. Thus reflexivity creates self-similar fractal architectures through which the story world constitutes itself by reproducing the self-reflexive character of the viewer's own experience of the film. Thus, every self-reflexive turn of the plot at once refers to the inside and the outside of the screen, and connects them in a loop of mutual constitution, which, in the last analysis, is diegetic, even though "anti-narrative".

Reflexivity as the textual form of self-reference

The paradox of the anti-narrative nature of complex films also lies in their ability to achieve coherency, both as textual and as cognitive 'wholes', despite the multiple disruptions of discourse. Self-reflexivity plays an important, constructive role, in the constitution of these wholes. As I would argue, using structuralist vocabulary, even though self-reflexivity has mainly been approached through a film's enunciation (the context of the narrative act, including the speaker, the listener and their relation), in contemporary complex films it is also a feature of the utterance, which, in this case, is the *syuzhet*/plot, or indeed, the narrative (*récit*).

The function of self-reflexivity in the textual organization has been missing from both its metanarrational and metafictional theorizations, but as I felt through the analysis of *The Final Cut*, it plays an important role. This function has to do with (self-)reflexivity's serving what Williams calls (in the context of literature) an internal "self-circulating tropological economy", which exists "for its own sake and its own reproduction" (Williams 145). But here I do not speak about first-degree self-reference anymore (the first level of self-reflexivity that I indicated in the beginning of this chapter), but about reflexivity as an operation that internally shapes the text's form, when itself seems to be constituted, like *The Final Cut*, through loops, resonances and folds that create connections between different segments of the film, units through which the film's organization is recomposed. Generating the textual form, these loops make also possible the feedback between film and viewer, by means of "a 'lowering' of self-consciousness and a different form of recursiveness", as Elsaesser describes in the context of complex, "mind-game" films (2009c: 24). It is textual reflexivity that makes this different form of recursiveness possible.

As already broached, a conception of self-reflexivity compatible with a film's 'closing' onto itself has been faced with suspicion by a certain critical tradition in film theory, and considered as an expression of elitist formalism. It is more in poetry and its spatial textual organization, and not in literary texts, that such a conception of reflexivity can be traced. In the 1940s the literary theorist Joseph Frank drew the attention to the "spatial form" of literary narration, referring to the novels and poetry of modernism (Frank 1945; 1978). Referring to modern poetry and its spatial form Frank stressed its "principle of reflexive reference": "The primary reference of any word-group [in a modernist poem], is to something inside the poem itself" (1945: 229). Drawing on Saussure's theory of language, which maintains that the text is constituted by "a system of self-reflexive signs", Frank refers to reflexive reference as formal organization rather than signification: "[external] referentiality is relegated to a secondary position, or disregarded entirely, and the internal relations of words to each other play a predominant role" (1978: 280). Objecting the traditional distinction—drawn by Lessing in Laocoon—between spatial and temporal arts (painting and poetry), Frank argues that modernist poetry as well as literature (especially through works such as Joyce's *Ulysses* and Proust's *À la recherche du temps perdu,* but also to Djuna Barnes' *Nightwood* and Robbe-Grillet's novels) are primarily spatial, because of their reflexive self-reference.[51]

Reflexive self-reference in films also points at their spatial attributes. Frank refers to the early 20th century Russian formalists as pioneers in the study of the spatial aspects of literature, which are to some extent inherent in every literary text. The Russian formalists emphasized the (often non-sequential) form of the *syuzhet* (plot) as opposed to that of the *fabula* (story). This emphasis upon the *syuzhet* and its spatial form returns in the discussions of

complex films. A model of reflexivity such as that of the text's "spatial form" is suggestive of how complex plots achieve a level of organization and coherence despite being fractured and disordered.

In my view, the model of reflexivity that Frank suggested before the Second World War is a systemic model. In the next chapter I will develop a systemic framework for the spatial workings of reflexivity in contemporary complex films, drawing on systems theory, which flourished in the years after the World War II. According to this framework, reflexivity, although internally operating, makes possible the viewer's engagement into the self-referential movement of the textual form, and thus points at an emergent constitution of the diegesis.

3. Reflexivity and organization in systems and in complex films

In this chapter I will pursue a revision of the concept of reflexivity through the systems theoretical framework, which illuminates reflexivity's particular 'complex' function. Thinking complex films as systems will allow me to revise the previous accounts of self-reflexivity in narratives and films and place the term in a context that departs from objectivist epistemology, which determines the 'anti-narrative' as 'anti-illusionistic'. The argument I make through this chapter is that (self-)reflexivity leads beyond narrative, not only because it is anti-mimetic, but mainly because it suggests a nonlinear and continuously renewed form of textual organization. The shift of analytic framework to systems theory will also provide me with a useful distinction between the different levels of self-reference and reflexivity. A systemic approach to complex films allows for further insight to be gained in both their "mind-game" aspect, which I associate with systemic *self-reference*, and their nonlinear temporal structure, which I associate with systemic *reflexivity*. The way these two aspects are interwoven is what makes the films under question functioning as complex systems.

The systemic genealogy of reflexivity

The genealogy of the concept of reflexivity extends beyond the discourse of art and film theory. Before proceeding to the theorization of reflexivity in the theory of Niklas Luhmann, I will first sketch the background of the concept in systems theory, and particularly in its cybernetic strand.[52] This framework will make it easier to understand how Luhmann conceived reflexivity as an agent of self-organization and complexity.

Cybernetics, one of the most important strands of systems theory, developed as a research field in the years after World War II. Cybernetics is the science of regulatory systems, that can be organic (living) or not. This discipline's objects are profoundly reflexive, as psychologist and epistemologist Steven Bartlett notes; they are "self-correcting systems, self-regulating systems, systems capable of self-initiated learning, self-organizing systems, self-reproducing systems" (Bartlett 1987: 24).[53] But also according to the definition of Louis Kauffman, mathematician and president of the American Society for Cybernetics between 2005 and 2008, "cybernetics is the study of systems and processes that interact with themselves and produce themselves from themselves" (Kauffman, as cited in Andrew 2008).

Cybernetics considers humans, animals and machines as information processing systems; therefore, in this context, reflexivity is not associated with self-reference in the sense of self-awareness—the latter implies a human consciousness. According to Bartlett, the 'recruitment' of reflexivity in cybernetic models of control was anticipated by earlier

developments in different fields. Semantic theory, argumentation, and theory of knowledge used reflexivity to build a "metatheory" in order to elaborate on the previous intuitive and not fully self-conscious reflexive results of mathematics (the "semantical and set-theoretical paradoxes" and the "intellectual misgivings and confusion" that followed their discovery—Bartlett 1992: 17).[54] In analytical philosophy and argumentation, self-reference has been used as a method that controls and prevents inconsistency and helps the construction of 'strong' arguments, by taking into account and 'calculating' the influence of the observer's, thinker's or speaker's subjectivity upon the observation, thought or utterance s/he makes. Thus, reflexivity gradually turned, from a power corrosive to the foundations of reason—as in the case of logical, mathematical, or later, post-structuralist paradoxes—into one that may bring positive results for epistemology. It was combined with the human ability for successful problem solving, adaptability to the environment, and control of logical inconsistency (Bartlett 1987: 6). As cybernetics has primarily been the study of control systems, reflexivity in this field has been integrated into the workings of all cybernetic and self-controlling organisms. Cybernetic systems are self-referential; they calculate information about their status in relation to their environment at every 'step' they take, and thus regulate, plan and anticipate the future outcomes of their actions.

Through the notion of "feedback" between organism and environment, cybernetics attempted to systematize the workings of reflexivity (Bartlett 1992: 17), which is now conceived more in terms of "circularity" and mutual causality between system and environment, rather than in terms of first-degree self-reference (Suber 1987: 259). Because of the inseparability of system and environment and the mutual causality between them, every action an organism performs is already determined by previous feedback from the environment and further continues the feedback chain. In cybernetics reflexivity presupposes that every action or observation is not done in a vacuum; at the moment it takes place it also constitutes a 'self' (as system) *vis à vis* an environment.

In her account of the history of cybernetics through the minutes of the Macy Conferences (1946-1953),[55] Katherine Hayles highlights reflexivity as a turning point for cybernetic (and systems) theory, and names the phase in which cybernetics entered in the 1960s as "the phase of reflexivity". Hayles mentions that the Austrian physicist Heinz von Foerster suggested the application of the self-reflexive principles to cybernetics as a scientific field. Presenting his essay collection *Observing Systems* at the Macy conferences in the beginning of the 1950s, von Foerster expressed the need, as Hayles notes, to take the scientist-observer into account, as well as the context (or "environment"—in this case the field of cybernetics in which they are positioned) in which s/he operates. Thus, von Foerster attempted to "extend the cybernetic principles to the cyberneticians themselves" (Hayles 1994: 442),

opening the "black box" of the observer and triggering discussion on whether the scientists as observers determine the cybernetic systems they observe. Indeed, von Foerster argued for a "second-order" cybernetics—a "cybernetics of cybernetics" (von Foerster 2003: 289)—which would follow the same recursive principles that guide the conduct of cybernetic organisms. Operating through recursive self-reference, a cybernetic organism "refers each incoming signal to its own self […] to establish self-reference with respect to the outside world" (von Foerster 2003: 110). Thus, von Foerster's account of self-reflexivity associated the concept with contextual meta-information.[56]

Hayles sees this call for a second-order cybernetics that von Foerster made losing ground with the subsequent development of the theory of *autopoiesis* by the Chilean biologist Humberto Maturana and his student at the time Francisco Varela. Autopoiesis, which penetrated the field of cybernetics after 1969, when von Foerster invited Maturana to contribute to the Macy Conferences, transported reflexivity to a different level, from the interplay between a system and its environment to that "between a system and its components" (Hayles 1994: 462). Thus, the epistemology of autopoiesis "displaced the focus of attention from the boundary between a system and the environment, to the feedback loops within the organism" (463).[57] This idea of the boundary between an organism and the environment being reproduced within the organism itself, is fundamental in the social systems theory of Luhmann, which is based on the theory of autopoiesis.[58] I will parallel this 'internalization' of reflexivity in cybernetics and systems theory with the textual form of self-reflexivity such as the one suggested by Frank—as broached at the end of the previous chapter. The systemic framework allows me to think of the two levels of filmic self-reflexivity, the one of self-reference in relation to the viewer (metanarration) and the other of 'internal' reflexivity (as loops and resonances within the film), as continuous, the one being generated from the other.

Luhmann's theory of social systems—which he developed in the 1970s—has been influenced by Maturana's (and Varela's) theory of autopoiesis. However, the degree to which the circular process of reflexivity is dependent upon the existence of an observer differentiates the use of the concept between Maturana and Luhmann. While autopoiesis still retained a place for an external observer,[59] Luhmann took a step further, maintaining that the observer *is* the system.[60] In contrast to Maturana's autopoiesis, Luhmann's social systems theory does not require "an observer as another system in order to produce system/environment relations" (Luhmann 1995a: 37). The environment is part of the system and produced by its inner processes of self-reference. However, the system is only operationally and not structurally closed; its self-reference produces an organization that becomes more complex by trying to render its environment meaningful, and to select from it the necessary resources (in information or energy) that will allow it to survive and evolve. As Luhmann notes:

> The concept of the self-referentially closed system does not contradict the system's openness to the environment. Instead, in the self-referential mode of operation, closure is a form of broadening possible environmental contacts; closure increases, by constituting elements more capable of being determined, the complexity of the environment that is possible for the system. (Luhmann 1995a: 37)

After briefly sketching the theoretical and scientific background in which Luhmann's contribution to systems theory entered, in the rest of this chapter I will argue for the applicability of Luhmann's theory, and especially his description of systemic self-referential processes, to films of the complex narrative tendency. As already discussed in the previous chapter, self-reference plays an important role in these films and their modes of narration. In general, self-reference in films is expressive of an agency that belongs to the act of narration and manifests itself through various expressive modes, as discussed in Chapter 2. This act does not necessarily point at an (anthropomorphic) subject of narration, that is, the 'author' or 'director', but at a 'unity' that the text gradually forms. Narrative theory presupposes that this unity is a causal-logical one, pertaining to universal schemata of understanding. My suggestion is instead that this unity is one of emergent complex organization, which creates its coherency from the bottom-up (being internally reflexive and self-referential) and not based on some kind of external 'common sense'. The presupposition of a causal-logical system implies a whole that pre-exists its elements, and determines the way that the disparate or out-of-order parts will finally fall into place. However, moving *before* the constitution of such whole, and looking at the process through which a film organizes from its elements, puts the validity of this presupposition into question.

Films and narratives are not social systems in the same way that law, economy, politics or religion are, but they could be considered as products of the social system of art, as Luhmann considered narrative, and also of that of mass media—in which cinema as an institution can be classified.[61] At the same time, cinema, despite its structural similarities with other mass media, is also very different from them, and the specifics of its systemic function are yet to be clarified by research. In the same vein, individual films cannot be reduced to their narrative or 'artwork' aspects. Only when this distinction between cinema and other systems is effectuated it becomes possible to study how films contribute to the constitution of the system cinema—which currently, as I pointed out in the Introduction, works as a complex system. The specifics of the workings of films, and, by extension, of cinema, as complex systems, is what I attempt with this dissertation to begin clarifying.

With the analogy that I draw in this chapter between social systems theory and contemporary complex narrative films, I do not aspire to address or evaluate Luhmann's vast,

multifaceted and controversial work in its entirety. Rather, I derive from it his description of the internal processes that constitute a system's self-reference, which I find illuminating when it comes to how (self-)reflexivity, a key-feature of contemporary complex films, as already discussed, functions as an organizing process.

In the following part of this chapter, I will first explain what is self-reference in Luhmann's systems theory, and then single out the systemic process of "reflexivity". I will proceed by explaining what particular function reflexivity has in the context of systemic self-reference, and how it is related to the temporal organization of systems.

Self-reference: From complex systems to complex films

Luhmann distinguishes three kinds of systems: biological, "psychic" and social systems. Self-reference is for him the defining characteristic of all systems. It is an "operational closure" that constitutes the system by drawing a boundary between its internal organization and the environment, and by permitting self-observation (and self-reference) from this boundary. But the boundary is produced by the system's own operation; by observing itself as a distinct entity the system also constitutes its own environment. Thus, the closure that the boundary suggests is operational (serving the system's operation of self-organization) rather than 'real', suggesting a disconnection of the inside from the outside.

Systemic self-reference produces complexity in a seemingly paradoxical way, by reducing the complexity of the environment. The reduction of external complexity produces, at the level of the system, further complexity. This is effectuated by what Maturana called "structural coupling". Every "distinction", or self-observation, is a selection of information from the environment. The system, according to Luhmann, selects only what is useful and relevant to its own internal organization; what produces "meaning".[62] He distinguishes between organized and unorganized complexity: the environment is characterized by unorganized complexity, but the system, through the self-referential distinctions or "selections" it makes, organizes complexity. The reduction of external (unorganized) complexity increases the system's internal, organized complexity, and makes it capable to evolve (Luhmann 1995a: xxxv).[63] Every selection constitutes a system *vis-à-vis* an environment but also it establishes a relation between elements within the system, *vis-à-vis* the sum of the possible relations—the "surplus of possibilities"—that the system contains (39).

Internal complexity is produced when, with every self-observation and distinction from an environment, the system achieves higher internal differentiation, and, by extension, more ways to "couple" further with the environment. This is because every time the system has to select from its environment what is relevant to its own organization, it makes this organization

more complex in order to accommodate further complexity with each new distinction. But it is not the environment that determines the system's structure. What happens, according to autopoietic systems theory, is the reverse. Structural coupling implies that the system, through its own organization, shapes its environment: "environments do not determine internal changes of the system. The environment merely selects states from among those determined by the internal structure" (Bailey 1994: 304). This is the way communication is established between system and environment. Every self-referential distinction is an act of communication, increasing the ways a system can couple with the environment, and making them more refined. In Luhmann's words: "closure increases, by constituting elements more capable of being determined, the complexity of the environment that is possible for the system" (1995a: 37). The structure of a system at any instant of time is a prerequisite for communication, as it gives leeway for coupling with its environment to be achieved.

In this context, complex films can be seen as products of the internal differentiation of cinema *vis-à-vis* its environment of audiences as well as of other media and social agents. Cinema self-organizes by increasing its internal complexity, which can be observed in (popular) films and filmmaking practices that become more complex. If we think of film viewing in complex systemic terms, then the "psychic system" of the viewer (according to Luhmann's triad of social, biological and psychic systems) and his or her cognitive organization would be placed in the 'environment' of individual films. The structural coupling of these two systems (the viewer and the film, the one being the environment of the other) is their communication, which is different from the communication created by narrative. The latter, as long as it attempts to construct a causal-logical sequence, seems to be standing closer to the common sense of meaning and communication, and not the systemic one.

A first point of contact between self-reference in systems theory and the self-referential processes involved in complex films can be made through Luhmann's discussion of self-referential modes in art (2000a: 142). He suggests that through self-reference, artworks, among which he classifies novels, create "doublings of reality copied in the imaginary reality of the world of art". Thus artworks re-introduce into their own form the basic distinction upon which art operates, namely a distinction of perception between the ordinary and the imaginary, or even, reality and illusion. Such doublings created within the artworks can be those between "reality and dream […], reality and play, reality and illusion, even reality and art" (*ibid*, 143). But, as all distinctions, they only point at the unity of the difference they introduce, namely, in the case of art, the absence of a dichotomy between reality and imagination. It is the system of art itself (here considered in its function in society and not through qualitative criteria) that represents this unity: in the realm of art, reality and illusion can coexist, since artworks are real objects that construct imaginary worlds.

Self-reference in narratives has recently been approached from the aspect of systems theory, by scholars Joseph Tabbi and Bruce Clarke. More specifically, Tabbi (2002) refers to self-reference as an act of narration. Especially when self-reference is placed at the end of a "complex" novel, it demonstrates the ability of narrative to overcome the chaotic forces of high complexity. Tabbi especially refers to novels such as Thomas Pynchon's *The Cry of Lot 49*, Richard Powers's *Galatea 2.2*, Paul Auster's *City of Glass* and Kate Marksons's *Wittgenstein's Mistress*. In these novels, when a high level of complexity is achieved, the author's self-reference (expressed through phrases that can be characterized as metanarrational comments) enables an exit from narrative's paradoxical self-closure and its transfer to a meta-level, where it can observe itself. Therefore self-reference re-enters the distinction between system and environment (story and a 'non-story' of random information) inside the stories, producing an observer—the narrator—who now intervenes in the story in order to observe it from a different meta-position: "the moment a narrator recognizes the possibility of 'keeping a journal of the journal', or of turning one's isolated inconsequential notations into an 'absolutely autobiographical novel', the narrator re-enters the system at another level (and at a later time), and thus keeps things going" (2002: xxii). These self-referential instances are for Tabbi instances in which "the system becomes conscious of itself", and then uses this self-consciousness as information, re-entering the distinction between itself and its environment into the system, and thus being able to develop (65).

In *Posthuman Metamorphosis: Narratives and Systems* (2008), Bruce Clarke, attempting a convergence of Mieke Bal's rereading of Genette and Luhmann's systems theory,[64] argues that the systemic framework is applicable to the narratological study of cultural texts involving "posthuman transformations". Such texts vary from Stanislaw Lem's *The Cyberiad* (1965) to Octavia Butler's *Xenogenesis* trilogy (1987-1989), and from H. G. Wells' *The Island of Doctor Moreau* (1896) to David Cronenberg's *The Fly* (1986). Clarke analyses the self-reflexive structures of these texts such as paradoxes, embedded frames, "stories within stories and plays within plays" (9), and their multiple diegetic levels, and he comments on the way the observations of transformation that these novels diegetically perform can be seen as shifts from first to second order observation (not just observing something, but observing oneself observing something). Such second-order observations are, according to Clarke, characteristic not only of stories about metamorphosis but of narrative itself, as they are at the core of narrative's function as "a form of communication through processes of observation" (78).[65]

Despite these few but significant attempts in literary theory to use systems theory and especially Luhmann's model and the notion of self-reference to analyze narratives as systems, my own approach of complex films as complex systems differs from them in some substantial

points. Firstly, these attempts do not particularly address the self-referentiality of film, with its own particular modes of expression, let alone the expressions and transformations of cinematic self-reflexivity in contemporary complex films. On the one hand, Tabbi's approach refers to cases of literary self-reference, expressed by the intervention of the narrator's self-reflection (in the form of metanarrational comments), that are fundamentally different from the filmic self-referential (and metanarrational) devices. On the other hand, although Clarke makes extensive reference to a film (Cronenberg's *The Fly*), he does not discuss the devices of cinematic self-referential discourse as instances of systemic observation, when metamorphosis as such is not thematized by the plot, as it happens in the stories of the novels he analyzes. Secondly, as already implied, these attempts insist on seeing the systemic function of texts as "narrative", without addressing the paradox of the anti-narrative elements—and here particularly self-reference—that these texts show in the first place. As discussed in Chapter 2, according to Genette self-reference (through *discours*) introduces an inner tension with narrative (particularly with *récit*), but this tension has not sufficiently been addressed by scholars in texts that show high degrees of self-reference, not so much thematically, such as the stories of metamorphosis Clarke discusses, but also structurally, as in contemporary complex films. Are these texts narratives of a second-degree or, by showing more commonalities with systems than with stories, do they suggest a departure from narrative?

Through the various 'twists' that many of them contain, complex films seem to be inviting the viewer to observe their narrative worlds, in a process similar to the one Clarke describes, and to make distinctions between reality and illusion, producing through these distinctions a unity that is the system of narrative, as Luhmann would have it. This level of self-reference would address the metafictional aspect of complex films, which has to do more with the way they undermine the truthfulness of their own narratives. However, as pointed out in the previous chapter, complex films also display a strong metanarrational reflexivity. The play between reality and illusion that can be observed in them is combined with a self-conscious narration that directly invites the viewer to participate in the construction of the diegesis, independently of the unreal impression that their story worlds create.

The moments when the viewer, in the process of watching the film and not *a posteriori*, 'realizes' that the narration deceives them—as it often happens in complex films (especially those characterized as "puzzle" films)—can be seen as instances that increase the communication between film-system and viewer-system and make the cognitive organization of the latter, as an effect of the structural coupling with the film, more complex. Along with the twist or "mind-game" moments that happen within the diegesis of complex films, we also have the self-reflexive practices that guide their plots' structuring, such as the openly restrictive narration or the time-juggling. These practices have been considered anti-narrative,

as already discussed, because they point at the film itself (and not just the narrative) being in some sense the construction of an agency, and therefore having a somewhat factitious or 'illusory' status. The function of these self-reflexive devices can be reinterpreted when seen as levers of systemic self-organization. Thus, instead of alienating the viewers, or making them 'reflect' upon the film (by means of a subject-object relationship and positivist epistemology), self-reflexive techniques engage them in an increasingly complex communication. Thus, contrary to what has been characterized as a "low level of communicativeness" in puzzle films (based on Meir Sternberg's taxonomy—see Panek 2006, Bordwell 1985), their unwillingness to "tell everything" that they know and their "openly restrictive narration" that flauntingly omits information from the spectator (at least until a twist moment comes), might suggest a different form of communication, which engages the spectator more deeply and in fundamentally different ways; not those of cognitive reflection but of systemic self-reference. The "id" of the narration, which "flaunts its uncommunicativeness" (Panek 2006: 85), might then be exactly the film's call for a different, systemic communication.

The "operational reflexivity" of which critics like Mittell talk about in relation to contemporary complex narratives, creates care for the story world instead of critical distance. I would add that self-reference in contemporary complex films achieves not only 'care' for the characters and the story, but also for the film as such, the particularity of its experience and its way of constructing a diegesis (in the expanded sense used in Chapter 2). In systems theoretical terms this may be explained as follows: every time there is a self-referential distinction in complex films, this distinction does not have as a consequence the detachment of the film from its environment-viewer, neither a cognitive distancing of the latter, but the further development of internal complexity, which ultimately engages the viewer in more complex ways as well, because of the new possibilities for coupling that emerge (since every system by increasing its internal complexity lends itself to further coupling with its environment). Thus self-referentiality becomes a communicating principle in complex films, as long as it enables the emergence of meaning in each system, the one of the viewer and the other of the film.

Reflexivity and temporality: A separate plane of self-reference

Apart from systemic self-reference, what I believe becomes of particular relevance when it comes to complex films is the inner process of self-reference that Luhmann calls "reflexivity", which needs to be given separate attention. It is thus of interest to the purpose of this study to somehow isolate the workings of reflexivity from that of systemic self-reference, and see how the latter is produced through the former.

In Luhmann's systems theory, reflexivity has been linked to the complexity of systems. According to my hypothesis that complex films can be approached as complex systems, I will suggest that Luhmann's theory provides insight into the role of reflexivity in them. In his systems theory, reflexivity is the temporal organization of a system through self-reference, and can therefore serve as a useful theoretical tool for the analysis of the complex interplay of self-reference and the (out of sequence) time in complex films. Using Luhmann's conception of reflexivity and self-reference, I will argue that the textual and cognitive organization of complex films is produced primarily through self-reference. Time is also a product of this self-referential organization.

Luhmann distinguishes between different processes of systemic self-reference, which takes place on multiple levels, such as that of the system as a whole *vis-à-vis* its environment, and that of the 'elemental' (at the level of elements) constitution of the system. "Reflexivity" and "reflection" are two types of the self-reference that produces the system's organization—the third is "basal self-reference". All three kinds of self-reference, namely reflection, reflexivity and basal self-reference,[66] and all types of relations corresponding to them, namely "system-environment", "before-after", "element-relation", constitute a system's self-organization. Observation is itself dispersed in this systemic nexus; it happens at many levels—and across the different levels of self-reference—and constitutes the system's complexity. The type of self-reference that specifically operates at the level of the system-environment distinction is "reflection". While reflection refers more directly to the system as a whole, and controls its relation to the environment, reflexivity refers to the relations between the elements of the system, and thus the "interplay between a system and its components". In particular, reflexivity operates at the intra-systemic level of the temporal organization of the system's elements.[67] According to Luhmann, every system that can display self-reference (such as a social, conscious or biological entity), is composed by the triad: elements (events and actions) – processes – systems (1995a: 10, 447). Reflexivity is the type of self-reference that refers to the "process" part of this triad.

Reflexivity is a mode of self-reference, but it does not refer to an 'outside' of the system (its relationship with an environment and the borders that define it), neither to the system itself from an external perspective, but to the process that constitutes the system through the arrangement of its elements.[68] Reflexivity is the way an element of a system "refers" to other elements of the same kind, and not directly to the system they constitute (see Luhmann 1995: 39). I find the function of reflexivity particularly relevant in the context of the systemic organization of contemporary complex films and the "modular" temporality that they display. Thus, I am going to argue that, by "re-entering" events/distinctions into the temporal

sequence of these films, reflexivity at once spatializes *and* produces time, making the films' structure more complex.

Luhmann describes reflexivity as a process that observes the temporal constitution of a system through its selections-events (the elements that compose it). Through reflexivity, a system makes selections from its environment (thus produces new events for itself) based on earlier and later events (previous selections and future expectations). Thus, reflexivity is the process that makes events (elements, singular occurrences) "re-enter" into the process acquiring "predictive value" and forwarding the events that are about to come.[69] Through this procedure, "the unity of the process acquires causal significance for itself", and also "guides and controls" itself (Luhmann 1995: 450-451). Reflexivity thus becomes a basic process of self-organization; selecting events and composing the system in time, it generates the system's causality and makes its communication with other systems (such as the one of the viewer, in the case of films) possible: "Therefore an observer can detect movements, follow melodies, and figure out what is going to be said" (Luhmann 1995: 451).

This means that a self-referential observation affects the structure of the system's elements, selecting also at the level of elements certain relations and not others. Meaning emerges in temporalized systems that are able, through reflexivity, to indicate something as having preceded and something else as about to follow. In the particular case of the art system, Luhmann notes:

> Temporal positions in art […] are determined by their own vanishing, and the artwork must define what remains significant and what can follow—a momentarily fixated and vanishing where and whence. It is always the difference, the boundary, that makes a difference and is turned into information by the work of art. (2000a: 115)

It is this difference between before and after that reflexivity observes in systems and thus retains and, more precisely, *remakes*, the system's unity in time. Turning it into information, it organizes itself and also, at another level, differentiates itself from the environment.

Since self-reflexive observations continue over time and new selections take place, these selections are treated by the system as events, that is, as singular moments in time; they are thus being "temporalized". This 'elemenal constitution' makes structure (as the constitution of links between elements) and organization possible. Yet these structures need to be flexible and constantly reformulated, because each new event creates new relations between the system's elements, new 'befores' and 'afters'. Structures have to "glue back" events in the right place and "treat them as if they were expected" (Luhmann 1995: 287). As Luhmann contends, "events present the irreversibility of time within systems. In order to achieve

reversibility, one must form structures" (*ibid*: 449). By self-organizing, systems not only cope with the complexity of their environment, but also with the irreversibility of time. Their organization exists in time and is irreversible, but their structure enables them to temporarily withhold selectivity, to 'fake' a momentary 'freeze' of time, so that they can select from its flow those elements that serve their internal organization. Thus, as Michael Schlitz notes, time in Luhmann's systems theory appears in the shape of a "torus" rather than in that of an arrow (2007).

Looking back – going forward

Through the example of *The Final Cut* (Chapter 1) but also through the overview of filmic self-reflexivity and its particular function in complex films (Chapter 2), two conclusions can be drawn: self-reference is an important (though traditionally 'anti-narrative' or in tension with narrative) feature of contemporary complex films. A way through which self-reference is expressed is the one of non-sequential temporal structure (or 'time-juggling'), which, is a fundamental form of narrative discourse and at the same time "data of voice", according to Genette, that is, a narrational marker. Far from a random ordering of events in time, the non-sequentiality of contemporary complex films often consists in revisiting and 'replaying' past events through a different perspective, for instance through that of a digital inscriptive device (the zoe-implant) in *The Final Cut*. Less in *The Final Cut* and more in other films like *The Jacket* (John Maybury 2005), it is also flash-forwards that are inserted into the present to—again—offer a different perspective, albeit with not always known subject or source, and that introduce doubt to the now lived experience—of the character, but also of the viewer. The changes of perspective that these analeptic and proleptic moments suggest, and the different glances upon self-experience through another that they introduce (another moment in time but also another agency), seem to me more relevant to self-reference than to time itself. This proliferation of self-reference 'copes' with time as a pre-existing force, and re-introduces it as a side-effect of the system's gradual organization. It also manages to capture the viewer into the text's own complex organization.

This coupling of self-reference with time in contemporary complex films offers an important connection with complex systems. The organization of complex systems, like the one of complex films, takes place in time as all organizing processes do. But internally, systems create time in the form of relations (based on the before-after difference) between events-selections out of the complexity of their environment. Thus systems refer to (and observe) their own process of self-organization. Reflexivity goes hand in hand with a reproduction of the system's structure: through it, every event "re-enters" the system's

existing organization, constituting an observation upon what has preceded (before) and what will follow (after). As Luhmann explains,

> Systems based on events need a more complex pattern of time. For them, time cannot be given as an irreversibility alone. Events [the systems' composite elements] are happenings which make a difference between a "before" and a "thereafter". They can be identified and observed, anticipated and remembered, only as such a difference. Their presence is a co-presence of the before and the thereafter. They have, therefore, to present time within time and to reconstruct temporality in terms of a shifting presence which has its quality as presence only owing to the double horizons of past and future which accompany the presence on its way into the future. On this basis conscious time-binding can develop. (Luhmann 1986: 181-182)

Time in complex systems emerges as a construction created by the event of a difference, which 'generates' a before and an after (through links to prior and expected events). The system accommodates this difference by assimilating it into its structure, and acting 'as if this difference was expected'. The notion of "re-entry", fundamental in Luhmann's systems theory, here becomes particularly relevant.[70] Luhmann 'borrowed' this notion from the mathematician George Spencer Brown (who in his work *Laws of Form* developed a calculus of first distinctions) and adopted it to his social systems theory, in order to explain the way self-referential systems introduce (or "replicate") in themselves the difference between system and environment. The paradox or contradiction that re-entry suggests in logics, was solved by Spencer-Brown through the insertion of time: two contradictory states of a form are not incompatible as long as they refer to different moments of the same form in time (Schlitz 2007:17). Reflexivity in Luhmann's theory, differentiating between before and after, creates time in the same way, as a solution to the paradox of self-reference. Reflexivity guides this process of re-entry, as singular events constitute instances of differentiation between past and future, and thus "force" distinctions at the level of the system's elements. These distinctions are "internal boundaries" of self-reference.

Re-entry makes a system capable of evolving by inserting its output (system-environment difference) back into the system as input (reproduction of the system-environment difference inside the system itself). Luhmann describes this feedback process: "the system nevertheless has to start every operation from a historical state that is its own product (the input of its own output) and needs *a memory function to distinguish forgetting from remembering*, and it has to face its future as a succession of marked and unmarked states or self-referential and hetero-referential indications" (1995b: 42; emphasis mine). Through

reflexivity, systems create a history for themselves by observing the relation between their input and their internal structure, and they proceed with continuous distinctions between forgetting and remembering, as certain 'past' elements are linked to the present event, and some others are 'forgotten'. A system's self-observation always implies time as difference: it is only retrospectively that a system is capable of making the cut—the prerequisite for any kind of observation.[71] As long as reflexivity operates at the before-after distinction of every system, regulating its autopoiesis, then I would argue that reflexivity in Luhmann's systems theory becomes a sort of systemic memory; it is the mnemonic function that the system needs in order to organize itself. Moreover, this memory is *implanted*, as long as it is an inserted self-observation (inserted because it always comes from something different than the system—when the systems observes itself it is always from a later point in time). And the system constitutes itself through a series of such implants. The creation of the system thus becomes a spatial construction, unfolding in continuous loops.

On the one hand, (self-)reflexivity spatializes time—by giving it the shape of a torus—the space that folds upon itself—but also by juxtaposing past, present and future at the moment of re-entry. On the other hand, reflexivity also produces time. This 'juggling' is the way time and meaning are gradually constituted in a complex self-referential process:

> The duality of horizons doubles as soon as we think of a future present or a past present, both of which have their own future and their own past. The temporal structure of time repeats itself within itself, and only this reflexivity makes it possible to renounce a stable and enduring presence. (Luhmann 1986, 182)[72]

The process of reflexivity seems to be the missing link in the function of complex films as complex systems. The way re-entry works in them, at the moments when the past is observed from the present (flashback), or the future is observed from the present and vice versa (flash-forward), is reflexive. On the one hand unexpected and twisting, coming from 'outside', on the other hand demanding an internal modification of the system and creating links between its elements, such reflexivity is textual in a way reminiscent of Frank's "reflexive reference", the way that textual elements relate to other elements in a text, giving it a spatialized form.[73] At the same time, through the re-structuring effectuated by time-juggling, whole segments of complex films, such as scenes, also become temporalized. The present becomes a temporal chunk, a moment or "event" (a point in "a spatiotemporal model", according to Floyd Allport—as cited by Luhmann 1995: 287), and this is necessary in order for it to be linked to other prior or later events, and be assimilated into the structure of the story.

Here it seems that we have two contradicting tendencies; one that juggles time and one that structures it, one that could be characterized as 'anti-narrative' and one as narrative. Luhmann's systems theory has a counter-intuitive force, in that it shows how time-juggling is the 'norm' and not the exceptional state of a system. A system spatializes time and then temporalizes space, so that it can keep its own structure and remain open to the contingency of its environment. Films of the contemporary complex narrative tendency show exactly how this is possible. By withholding temporalization, i.e. the succession of events from other events, they at once demonstrate that contingency always comes before narrative (see Simons 2008), and display the endurance of their organization, which is able to self-reflexively cope with the massive complexity of their environment.

Film theorist Edward Branigan has referred to the process of reordering events that narrative films sometimes demand as one of "presentation of time". He notes that in cases of complicated temporal ordering of shots, "the shots require the spectator to refigure the temporal scheme" or "to reorder story events" (1992: 42), letting, through this association of data, an "experience of time" to emerge: "an experience of time emerges as data is processed and associated, that is, as the spectator reorders fragments on the screen, creating such story relationships as temporal continuity, ellipsis, overlap, etc." (1992: 116, 169). In the systemic model, it is reflexivity that makes time possible. Time as a sequence of past, present and future does not exist but through self-reference. So it is not a presentation of time, as an overarching principle that lies beyond the grasp of representation, that systems theory suggests, but a creation of time (here, a time meaningful to the system and not the cosmological time), through a principally spatial distinction.

Luhmann saw modern narratives and artworks as systems that secure temporal and spatial continuity in order to achieve variety through redundancy (2000a: 115). Here Luhmann does not refer to a continuity that is presupposed but one that emerges in order to achieve functional closure, self-organization and evolution of inner complexity. The spatial and temporal continuity of narratives that Luhmann refers to, if conceived as a kind of organization, remains a tentative and dynamic configuration. Only after adopting this systemic framework and placing it before the constitution of narrative, narrative could be re-interpreted as a reciprocal and complex constitution of two systems, the one of the text and the other of the cognitive response of the viewer. But at the very moment that it achieves operational closure, narrative transforms into something other than itself. This is because everything that is observed, and closes on itself, is observed by an observer, therefore, there is never an 'end' in the beginning-middle-end schema.

> Self-reference produces recursive, circular closure, but closure does not serve as an end in itself, not even as the sole mechanism of preservation or as a principle of

> security. Instead, it is the condition of possibility for openness. All openness is based on closure, and this is possible because self-referential operations do not absorb the full meaning, do not totalize but merely accompany; because they do not conclude, do not lead to an end, do not fulfil a telos, but rather open out. (Luhmann 1995a: 447)

In complex systems this loop-like process is never-ending, while narratives are traditionally defined in narratology with regard to a beginning-middle-end schema, which always evokes a sense of closure. In the systems theoretical framework I develop here, this schema becomes itself a moment in time, and being observed it helps the constitution of a larger organization that goes on in and with time. And contemporary complex narratives in my view, more than the endurance of narrative, express the need to open up to what lies beyond it. In contemporary complex films uncertainty becomes their principal communicative condition, like it has been in *The Final Cut*, and films often end with the introduction of one more uncertainty, thus negating closure. I find that Luhmann's description of processual reflexivity in systems, on the one hand adequately addresses the self-referential processes involved in complex films, and on the other hand points beyond narrative.

The temporal reflexivity of systems also has a social-communicative dimension. Reflexivity has been described as an "expectational structure" that "implies a mode of self-observation which uses contingent events only as an occasion or stimulus to move from one operation to the next" (Pottage 1998: 13). This expectational self-reproduction makes possible, Alain Pottage notes, a system's "relating to others" (*ibid*), since, in each and every decision, a system engulfs an anticipation (expectation) of the environment's (or other systems') response. This expectation is fulfilled, in the case of complex films, by the response of the psychic (cognitive) system of the viewer, who is engaged more actively, through metanarrational self-reflexivity, as already stated, in the filmic process, and becomes part of its complex organization.

Luhmann's theory is a complex systems theory because it shows how complexity is created through singular events-units—since every event causes a restructuring of the system. However, every event and every input is determined by the pre-existing structure, and the re-structuring it causes is to some extent predictable. Luhmann's theory introduces an interplay between contingency and structure, which however seems to be partially enabled and controlled by structure. This is something that changes in more recent developments in complex systems theory. Although Luhmann stressed the complexity of systems, he insisted on the organization of this complexity in a top-down direction:

> Whether the unity of an element should be explained as emergence "from below" or as constitution "from above" seems to be a matter of theoretical dispute. We opt decisively for the latter. Elements are elements only for the system that employs them as units, and they are such only through this system. (1995a: 22)

In the perpetual re-organization of systems through difference, through the unexpected and contingent, as Luhmann himself described them,[74] I see the seeds of the opposite movement: one that has systems being configured and emerging in a nonlinear way through the constellations of elements. It is this direction I will pursue in the following part of this thesis.

PART 2: EMERGENCE

The second part of this dissertation, like Part 1, will begin with a plot-oriented analysis of an individual film, *Burn After Reading* (Joel and Ethan Coen, 2008, US/UK/France). Although individual characters and their trajectories will be separately introduced, what will gradually become apparent is that three levels of agency—the individuals, their aggregates and relations (the 'network' that their interactions create), and the film narration itself—are in this film constituted through a mutual causal mechanism, characteristic of complex systems. In Chapter 5, I will discuss the characteristics of the diegetic causality of complex films that contain multiple characters, like *Burn After Reading*, and show how it deviates from the causality of classical narrative films. Chapter 6 will suggest that, when films of the complex narrative tendency are analyzed as complex systems, their loose diegetic causality can be considered at the same time an effect and a prerequisite for their emergent self-organization.

4. Are networks narratable? The case of *Burn After Reading*

Joel and Ethan Coen mention in an interview that *Burn After Reading* brings together two worlds, the one of the State employees in Washington DC and the other of a fitness center situated in the same city.[75] In the beginning of the film, along with the opening credits, we see the US state of Virginia from a satellite camera, which gradually zooms in to 'land' on the headquarters of the CIA. There, an analyst responsible for the Balkan desk, Osborne Cox (John Malkovich), is called to the office of his senior, who will announce to Cox that he is being demoted. The reason for his demotion is his "drinking problem", which seems to be known among his colleagues, although Osborne furiously denies it, blaming instead political reasons and calling the demotion "a crucifixion". Disappointed and insulted, he decides to quit his job altogether and goes home to make himself (another) drink. This is the first in a series of many small ironic twists that *Burn After Reading* contains. In a game of continuous deception that the film prepares for the viewer, the latter learns to anticipate twists and turns, infiltrated both by paranoia and by the farcical and black comedic elements characteristic of Coens' work.

Paranoia and farce

Burn After Reading is a mix of paranoia and farce that gradually feels more and more 'real'. Towards the ending, the film accelerates its tempo and culminates into a crescendo of

brutal physical violence. While in the first half of the film we are continuously reminded, often in a comic way, that "appearances can be deceptive", as one of the characters says, and we get prepared for surprises and twists, in the second half we are nonetheless caught by surprise as we watch the farce leading to a real "storm of consequences".

Ozzie Cox seems to live a delusion regarding his work status, his self-conception and his personal life. He appears unaware of what all his colleagues seem to know (his drinking problem), and on top of that, he does not seem to realize that he is "no biggie" in the CIA, according to a senior agent's expression. Indicative of his arrogance is his belief that writing a "pretty explosive memoir" about his experiences in the intelligence service can be a possible way to make his living after quitting his job. Ozzie's marriage is not excluded from his delusions. His wife, Katie (Tilda Swinton), who has been cheating on him with a US Marshal officer, Harry Pfarrer (George Clooney), secretly prepares to take divorce action. When she hears from Ozzie that he quit his post, she decides to move faster, as the last thing she wants is to become the sponsor of her husband's nascent career as an unsuccessful writer, as she rushes to predict. But, as her lawyer advises her, she should not forewarn Ozzie about her intention to divorce him, since he is a man professionally trained in deceit. Instead, she "can be a spy too" and steal from him information about his finances, in order to leave him the least possible space for maneuvering.

After the scene of Katie at the office of the divorce lawyer, a cut makes the transfer to the Coxes' house, where a high-angle shot shows Ozzie lying on the couch with his eyes wide open and an empty expression on his face. But, contrary to what we might assume, Ozzie is not dead. He is actually in the process of recording his memoir, but he falls short in inspiration. He tries out many phrases about the "glorious past" of the service, all of which sound ridiculous, until he jumps up and runs down the stairs when he hears the phone at the basement ringing. It is a phone call for Dr. Cox, his wife. The phone call perhaps raises Ozzie's suspicions that his wife might have a lover. This hypothesis that the viewer might make is enforced in the next scene, where Ozzie watches a game show on TV, hearing the audience cheering "she's married!; has a boyfriend!; she's pregnant!", and later on, when Ozzie, after apparently waiting for Katie for hours, leaves her a note which appears threatening—mostly because of the bombastic music score that accompanies the shot.[76] The note that Ozzie leaves to Katie is encircled by slices of lemon from the drinks he has consumed. In it, Ozzie mentions that he will be at Princeton's reunion dinner, but the film postpones giving us a chance to verify his statement, as we only see him at this dinner later on. So, in the meantime the viewer might infer that Ozzie is the one surveilling his wife and her lover, whom we see out together and probably being watched by a mysterious gaze, whose POV we share. In the course of the film, not only the husband of Mrs. Cox but also her lover,

Harry, appears secretive, occupied with some mysterious construction at the basement of the house where he lives with his wife Sandy. His secretiveness is accompanied by a paranoid feeling that he is being followed and that a mysterious car tails him everywhere he goes. *Burn After Reading* plays with the viewer using many "surface POVs", through which the viewer can only speculate by external indications what the characters might be thinking.[77] At the same time, the viewer often shares POVs that are not focalized (their source remains unknown, although they seem to be subjective) and have an ambiguous status, as I will further discuss later in this chapter.

The second world that *Burn After Reading* encloses and is left to 'clash' with the one of the state officials such as Ozzie and Harry, is the one of a fitness center called Hardbodies. Intelligence, if not exactly the strong point of intelligence agents such as Osborne Cox, is certainly the weakest link in Hardbodies. However, a piece of "raw intelligence" is found "lying on the floor" of the gym. It is the CD that Katie managed to 'burn' from the hard drive of Ozzie's computer, stealing his files, which included not only his finances, but also, without her knowing, the memoir that he had been writing. Chad (Brad Pitt), a personal trainer working at Hardbodies, is the first and perhaps the only person who appreciates Ozzie's memoir, not because of its content but due to its author's affiliation to the CIA. Chad actually has no idea what the "numbers and dates and numbers and shit" that the CD contains stand for, but with his obviously limited cognitive capacities he assumes that they must be very important. His colleague Linda (Frances McDormand) seems distrustful at first, but when Chad refers to the reward that they might get by delivering the CD to its owner, she immediately gets hooked in. From that point on, her mind does not cease plotting and arranging the strategic details that will help them make profit out of this "once in a lifetime" coincidence. But also Linda is not clever enough to be evil. Her actions are guided by her desire to "reinvent herself" by correcting her bodily flaws with the help of cosmetic surgery, and the strategy she follows seems to be derived from the spy movies she had probably watched as a kid.

However, Chad's and Linda's ambitions are not so easily fulfilled. A midnight call by Chad to Ozzie from Linda's house does not bring the desired outcome (the reward that they hope to get as "good Samaritans") because Ozzie perceives the call as blackmail and gets furious. Of course, the mere idea of blackmailing someone for an unprotected CD sounds groundless, since copies of the original can so easily be made, but this does not seem to have crossed the minds of Chad and Linda. They arrange a meeting with Ozzie to exchange his memoir for money, and when he does not give anything to them, Linda decides to proceed to "plan B". Thus she and Chad end up at the Russian embassy, where they attempt to sell the 'classified' information that fell into their hands to the surprised diplomatic officials, who

nonetheless, perhaps due to lingering Cold War-reflexes, agree to have a look at the memoir before asserting that, if that is all, then it is worthless. But Linda is determined to find the money for her surgeries at any cost, so she continues playing the spook, this time sending Chad to break into the Coxes' house to try and get more information.

Productive surveillance

Burn After Reading, just like its music score, proliferates in bombastic deception and paranoia. Some critics attribute this paranoia to the genre conventions of the spy film. Thus, in this "goofy spy comedy" (Doom 2009: 174), or "absurdist spy spoof" (Rowell 2009: 74), as critics have characterized *Burn After Reading,* the Coens intentionally use elements of the spy genre in a plot that nonetheless does not include "actual espionage", as Ryan Doom observes (2009: 164). Many of the spy movie conventions are certainly present in *Burn After Reading*: film critic Erica Rowell points at the suspense-building soundtrack and the tailing of Harry's moves by the mysterious car, and also at the choice of Linda to go to the Russians, which is "what characters in Cold War spy movies do". However, even if the Coens set up to do a contemporary spy film, or to 'revisit' the spy genre, the outcome, as they themselves realize, is something more than this: "I guess we sort of wanted to do a spy movie. It didn't exactly turn out that way. I don't really think it is a spy movie. That's how the original idea was structured" (J. Coen 2008).

Doom sees deception as an intrinsic part of the Coens' oeuvre. In the chapter devoted to *Burn After Reading* (entitled "Burning Paranoia") in his book *The Brothers Coen*, he draws attention to Chad's line "appearances can be deceptive" to make a link between *Burn After Reading* and other Coen films: "Throughout Joel and Ethan Coen's twelve feature films, the brothers continually toy with deceiving audiences by altering stereotypes, clichéd plots, stock characters, and genres." From the point of view of their characters, as it happens in *Burn After Reading*, paranoia is "a reaction to the unknown, to the fear of possibility" (2009: 163). This paranoid feeling is also transmitted to the viewer, who, throughout the movie, is left to oscillate between many lingering possibilities of what is real and what only appears to be so, before some of these possibilities are finally picked up. As already discussed, we are forewarned very early about the play of deception that *Burn After Reading* sets up, so we tend to make inferences that are not always verified; for example, when we expect that Ozzie might be following the whereabouts of his wife while this proves to be wrong. Moreover, traditional film-noir techniques of building suspense proliferate: strange camera angles, looks that seem to come from hidden corners, "discovered" POVs (shots of objects before being matched to a specific character's POV, according to Branigan), etc. For example, we see shots of the rear-view mirrors of cars before knowing who is looking: in one occasion, it is Ozzie waiting for

Chad, in another it is Harry realizing that he is being followed. A zoom on the smashed trunk of Ozzie's car takes us by surprise before realizing that it comes from the point of view of Mrs. Cox, who now finds out about the damage that her husband caused.

In another characteristic scene, Ozzie talks to his father on his yacht as they sail somewhere not far from the city (as Washington DC is built on the bank of Potomac River). We see their profiles in a medium close up placed in parallel to each other, both staring at the water in front of them. The elder man listens to Ozzie with a straight face, as the latter discloses his inner thoughts about his forced resignation from his job at the CIA. From Ozzie's words we learn that his father served the State too, in the Cold War period. But now the work at the intelligence service is "all bureaucracy and no mission", as Ozzie says full of disappointment. His father remains silent and expressionless during Ozzie's monologue, and the irony of the scene becomes apparent in the following scene, after the two have returned to the dock. There we see (sharing the POV of someone spying on the two men) Ozzie's father being pushed in a wheelchair by his son, having the same empty expression as before. This makes us think that the father's expressionless face may be the symptom of a deteriorated mental condition, which probably prevented him from hearing or understanding anything from what Ozzie had been earlier confessing. In this respect, the previous scene on the boat was again farcical and deceptive, as it did not reveal the father's health condition.

In *Burn After Reading*, the viewer gets the impression—as well as shares the impressions—of a ubiquitous eye watching the action, although there are no transcendental nuances in such ubiquity. This eye is always a camera that can penetrate every level, from the macro level of the planetary village implied in the opening and closing sequences, to the micro level of the characters' lives unfolding in different corners of Washington. All of the characters seem to be surveilled by a camera lens that hides everywhere: it watches Ozzie pushing the wheelchair of his disabled father, zooms in on Harry as he jogs being tailed by a car, but also observes the characters spying on each other.

A surveillance camera also seems to be following Mrs. Cox and her lover. Outside the yacht of the Coxes, which Mrs. Cox visits with Harry, a surveilling gaze waits for her, placed at the same spot of the dock from which it was earlier spying on Ozzie and his father. However, this and other similar shots in *Burn After Reading* do not ever allow us to be sure about whether the shot comes from a diegetic surveillance camera, as we do not see the camera or the person behind it. The shots themselves are dubious. In some of them the presence of diegetic surveillance becomes clear, for example, when as Harry jogs across a bridge by the highway, he stops when he suspects that he is being tailed by a car. In this scene, the car passes by and takes a right turn. This shot is succeeded by another one from the opposite side of the bridge, which explicitly offers a view through a (diegetic) camera, as we

see and hear the zoom of its lens focusing on Harry. However, this shot cannot be coming from the car that was tailing him, because it has just disappeared in the opposite direction.

Burn After Reading invites its viewer to a game of surveillance defined by the continuous interplay of different narratological levels, between which the transition is almost seamless. The movement of the—perhaps CIA—camera that follows Harry as he runs across a bridge smoothly dissolves into the movement of the film's camera now approaching from behind Mrs. Cox as she sneaks into the computer files of her husband. A camera eye also hides behind some shelves in Harry's basement, 'spying' on him at the time he is absorbed in the manufacturing of his mysterious machine. We are never sure who is spying on whom and who is each time the subject of surveillance. Later, when Harry kisses goodbye his wife Sandy, who leaves on a tour across the States advertising her latest children's book, he notices again the car that has been tailing him outside their house. The next shot shows us the figure of Harry (who's turning us his back) from a longer distance and from a direction opposite to the one of the car. Then Harry turns to look behind his shoulders, as if he sensed a (or our) gaze on him. The threat is not only the visible car but an invisible and seemingly 'omnipresent' eye that we are not sure if it is a product of Harry's imagination or not. Therefore we imply that the diegetic surveillance is at least double, and when combined with the surveillant style of the shooting, triple. A 'paranoid feeling' is thus transmitted to the viewer too, who can never be sure whether the gaze that holds the image is part of the story, or part of its telling; if it is part of the narrative or the discourse. This way *Burn After Reading* creates an atmosphere of omnipresent surveillance, which becomes the way to approach the characters both from the extra-diegetic/narrational point of view and the intra-diegetic/narrative one.

According to Elsaesser, paranoia is "the appropriate—or even 'productive'—pathology of our contemporary network society", and he points at its proliferation in the movies that he calls "mind-game" (2009c: 26). *Burn After Reading* is a network film that stands closer to the communicative conditions of mind-game films than to the transcendental connectivity promoted by the "network narratives" of Bordwell's theorization. And it ultimately proceeds towards the demystification (and perhaps rationalization) of the paranoid atmosphere created, placing its own (extra-diegetic) camera in a network of global surveillance.

In the course of *Burn After Reading*, it gradually becomes clear that the intelligence service has been following the movements of the majority of the characters, and this allows the viewers to hypothesize that some dubious shots that they previously witnessed belonged to CIA secret agents spying on the characters. But, as the camera's—and the viewer's—gaze get mingled with that of the CIA camera, due to the lack of specification of the narrative or

narrational surveillance, eventually we find ourselves not much less baffled than the CIA agents of the story—and at times, equally ridiculed. We realize, for instance, that the object of Harry's secretive construction work proves to be just a sex chair he proudly presents to Linda, when he takes her to his house after randomly meeting her through the Internet. And the mysterious car that has been tailing him proves to be driven by a lawyer working for a law firm that Sandy (his wife) hired in order to mobilize the divorce action against him. One of the few persons that have remained 'innocent' in the course of the plot, Sandy is in the end also found a cheater (we see her meeting her lover in Seattle during her book tour) and a 'spy'.[78] In the context of a shift, observed by Elsaesser, from "detectives looking for clues" to "insurance agents assessing risk on behalf of their corporate employers in the neo-noir films of the 1990s" (2009c: 29), *Burn After Reading*'s 'spying back' aims, in most cases, at 'insuring' its agents against a social network that they perceive as threatening and unreliable, because it 'spies' on them in the same way they spy on each other. Identifying both with the characters and the camera gaze, we as viewers experience a feedback of surveillance coming from every node of the network that the film creates, and connecting its different diegetic levels.

In what follows, I will focus on the inner workings of *Burn After Reading*'s network of surveillance and paranoia, and the degrees of agency it allows to the characters—as well as to the viewer. Human and unhuman ways of looking and acting are not only found in tension in *Burn After Reading*, but also in a process of dynamic interplay. This interplay cannot be approached through a notion of surveillance that separates the observer from the observed, because in the systemic approach that I adopt, the observer is found inside the system. In Luhmann's version of systems theory, as already discussed, observation does not come from the outside but it is generated by the system itself, which, by observing its own workings, achieves internal differentiation and self-organization. In this respect, distributed surveillance (and the accompanying paranoia), expressed not only through the content but also through the form of contemporary complex films (their narrative structure, the style of shooting and the way they address the viewer), can indeed be considered a productive pathology.

Networked complexity in *Burn After Reading*

But let us see how the diegetic paranoia of *Burn After Reading* develops across different levels. This will reveal how, apart from a parody of the spy movie genre, *Burn After Reading* can be considered as a complex film. But how is *Burn After Reading*'s complexity enabled and enhanced by the complicatedness of its plot, which, according to Rowell (2009: 74), "depicts a chaotic world through a seemingly chaotic narrative"? As a comment in the user reviews of IMDb says, *Burn After Reading* is "intricately-plotted".[79] *Burn After Reading*

is certainly "complicated" and "fuzzy", as the CIA agents who try to follow the actions of the various characters in the film assert. The two scenes involving a CIA official (Palmer) reporting to his senior about the events are hilarious because of his apparent inability to put into words and describe in a coherent way what is happening. The officials almost perform the role of the dance in ancient Greek tragedies, reflecting on what takes place but without being able to influence the action. These scenes, placed after the two most violent incidents of the film, are reminiscent of the *stasima* of ancient choruses, although here they have a satirizing effect with regard to narrative meaning making. The emotional distance that they offer from the atrocities taking place, as well as the summary of the action that has already developed, is supposed to be offering a grip on the complexity of the characters' interactions and to direct the recipient's attention to questions that are not yet answered. However, these scenes only have the opposite result, as the CIA 'chorus' can only leave us more baffled than we were by just following the action without trying to make a coherent narrative.

Of course, narrative hypotheses as the ones I made in this chapter when introducing the film and the characters are always plausible and in fact invited by the pseudo-mystery plot of *Burn after Reading*. At the same time, however, the film seems to be setting up a farce to this kind of causal-logical cognitive approach, not by just failing our hypotheses and surprising us, but by making us reflect on their overall futility. *Burn After Reading* complicates any attempt to cognitively approach it in a linear way; it is complex, on the one hand at the diegetic level, which interweaves narrative and discourse in a way similar with other complex films, as discussed in Part 1, and on the other hand at the textual level and its structure. Its plot develops by accelerating and augmenting the codependency of its separate elements—the characters and worlds that it brings together. As the same reviewer from IMDb puts it: "once the Coens start firing on all cylinders they never stop". It is precisely the dynamic and 'uncontrollable' features of *Burn After Reading* that I will call 'network'.

Burn After Reading can be read as a film about how networks of information are also networks of people. But it is also a network narrative, not in the strict sense of Bordwell's classification (2006, 2009)—though it also partly meets his criteria, as far as the chance encounters between previously unconnected characters play a central role in the film—but in terms of the network that its mutual causal mechanisms create. These mechanisms make the film a complex system, the parts of which are not only forming an intricate maze but are also causally connected in a nonlinear, and arguably 'network', way.

As it happens in many complex films, and also the ones that Bordwell has characterized as network narratives, contingency plays a crucial role in *Burn After Reading*. To begin with, the CD with Ozzie's memoir falls from the bag of the secretary of Mrs. Cox's lawyer, while she is at the gym. We never witness this incident but we are asked to infer it

later, while we have already been wondering about the missing link: how did the CD that Mrs. Cox burned end up "lying on the floor" of Hardbodies? Our first inference has been that it was Mrs. Cox who must have lost it, as we are given the clue that it was found at the ladies' lockers. But her surprise when she hears the phone call that Chad makes to Ozzie shows us that she is not aware of the loss. The irony here lies in the striking difference in the way that the incident of the lost and found CD is valued by the different parties involved. The reaction of the old secretary absolutely contrasts the one of Chad when he found the CD: she duly reports its loss to her boss and begins to 'burn' another copy out of the hard drive of her computer.

The difference in the way the "two worlds" of *Burn After Reading* (the one of state officials and the other of Hardbodies) respond to the same incident becomes even more ironic in retrospect, when one considers the final results that a contingent—and totally unimportant for some—incident brought about: a CD falls in the wrong hands and this has among its consequences two persons getting killed (Chad and Ted, the manager of Hardbodies), another ending up at the hospital with no brain function (Ozzie) and a fourth escaping the country in a state of paranoia (Harry).

If we consider the separate characters as the basic elements or 'nodes' of the textual network of *Burn After Reading*, this network develops nonlinearly both in space and in time, through the interactions between the elements. On the one hand, in space, a "small-world effect", as it is called in network theory, is in the making. In network science, a small number of random links added to a regular network "can generate a very large effect", turning it into a "small-world network". This happens because the "average path length" (which is defined as the number of links between two nodes in a regular network) is reduced to half with the first five random rewirings (connections) (Mitchell 2009: 238). Therefore, once a long-distance link between two people is achieved, then more of their mutual connections/acquaintances also get connected to each other. In simple terms, the fact that most people are "more likely to be friends with the friends of [their] friends than with other, random, people" (*ibid*), is a result of the small-world network property. In *Burn After Reading*, as soon as one random (long-distance) link connects the two worlds, as the CD of one State official gets found in Hardbodies, then the connections become more, they develop faster, and ultimately they have disproportional effects as the system develops in time. In the course of the film, Harry comes across Chad, and Ozzie meets not only Chad and Linda but also Ted—in the last case with lethal consequences. Also, at another, global small-world level, while Linda and Harry are unknown to each other in the beginning of the film, they eventually get to meet through Internet dating. In all cases, the encounter of the two worlds, the one of the government

officials and the other of Hardbodies, is directly or indirectly mediated by information—contained in a CD or in a dating site.

Every action of one element—narrative 'actor' or agent—of any of the two worlds of *Burn After Reading*, has in most cases a disproportional impact on the other elements, no matter which of the two worlds they inhabit. For example, we will see that, in the long run, the demotion of Osborne Cox has as an indirect consequence the payment of Linda's cosmetic surgeries by the CIA. The initial actant (the CIA) gets affected—though indirectly and nonlinearly—by the consequences of its decisions. The feedback it ultimately receives might be negative (as the senior official concludes in the end "I guess we learn not to do it again") but it has passed through a chain of both positive and negative feedback among the various elements, a chain similar to the one most complex systems involve, as the pioneer in the study of feedback Magoroh Maruyama showed (1963). In mutual causal systems, that is, feedback systems, the activity of each element of the system has an impact upon the other elements and, in turn, upon themselves. Feedback can be negative (a communication that helps a system to maintain a stable state called homeostasis) or positive (a communication that leads the system to a continuous and cumulative deviation from its initial state, thus to a certain disorganization).[80] Self-organizing systems usually take the form of feedback networks, which combine both negative and positive feedback. And this type of feedback increases the complexity of systems, through co-dependency of the parts, mutual causality and amplification of deviation. An illustration of such positive feedback in *Burn After Reading* would be the paranoia that ultimately overwhelms Harry near the film's closing.

A retrospective view of *Burn After Reading* could include the film in the group that film theorist Wendy Everett identifies as "fractal films", which are influenced by chaotics. From the perspective of systems theory, accidents (even like the one created when a CD falls in the wrong hands) can be considered as (external) bifurcations that may cause positive feedback in a system. As Maruyama notes: "all processes of mutual causal relationships that amplify an insignificant or accidental kick, build up deviation and diverge from the initial conditions" (1963:164). Even though *Burn After Reading* is certainly not thematically influenced by chaos theory like some other recent films (the 2004 film *The Butterfly Effect* would be an obvious example), it seems nonetheless occupied with the specific nonlinear workings of causality in complex networks, where a small event leads to disproportional outcomes.

Contingency is a key-factor in complex networks, but also an element that fascinates filmmakers. The Coen brothers' interest in the contingent and unexpected is reflected on their preference for idiotic characters. As Ethan Coen comments in an interview, "a lot of our movies are about dolts. […] Maybe it's just because it seems to go somewhere in terms of the

story. If everybody knows what they are doing in the movie, if they are capable, and everyone is on top of things then what is going to happen that is interesting or fun, or surprising?" (J. Coel 2008). To this 'agency of coincidence' comes to be added the agency of relations: the 'accident' of the loss of the CD containing Ozzie's memoir would not have extreme consequences if the relations between the various characters did not start increasing in number and complexity. Contingency is here coupled with structure, as complex systems develop by contingency (random links) but also organize themselves through it.

Together with the complication of the relations and encounters, the editing of *Burn After Reading* also becomes more intricate. In the beginning of the film the tempo is slower, the scenes succeed each other allowing us enough time to get to know the individual characters and to construct various narrative hypotheses about their relations and motives. Towards the end, the rhythm accelerates and the scenes develop in quick crosscutting. Thus, Linda's drive in the city, during which she gradually gets encircled by cars and even a helicopter of the CIA, develops shot by shot in parallel with the scene where Ozzie goes down the stairs to the basement of his house to find Ted sneaking into his archives—after the latter has been persuaded to do so by Linda. The "firing" that will bring the narrative to its ending also alters the temporal experience of the viewer, to engage him or her into its frenetic, out-of-control rhythm. Although the acceleration of the film's pace towards its ending is a common suspense-building practice, especially in the scene where Harry encounters Chad or in the one where Ozzie approaches Ted, what is underlined is that this acceleration, while somehow connected to the characters' actions, transgresses them at the same time. It is as if a collective causality operates upon the characters, transmitting its agency from one to the other, and ending up to the lethal clash between the two 'worlds'.

Micro and macro-causality merged

Apart from a probably unintentional illustration of the workings of complex networks, *Burn After Reading* also offers the chance to study causality in complex films through the complex network framework. The exploration of agency and causality in *Burn After Reading* would demand from us to question how from an initial state (no relations or just beginning of relations between characters), and through the intensification of these relations, the film as a complex system develops. How does causality work in a complex structure? Is it attributable to the initial state and the isolated elements or not?

We can distinguish two interwoven levels of causality present in the plot of *Burn After Reading*. The first is the micro-causality of the characters deriving from their individual motives. The second level is the macro-causality of the network that their interrelationships

make. If the two levels were kept separated, then the first would appear individualistic, anthropomorphic and perhaps cynical, while the second transcendental and omnipresent, surpassing the individualism of the characters and connecting them in unexpected and catastrophic ways. In other words, the first would be the level of farce while the second, the level of paranoia. In what follows, however, I will argue that just like paranoia and farce, the micro and macro-causality form an inseparable mix in *Burn After Reading*.

At the level of micro-causality, the 'internal organization' of each character, his or her expectations and motives, will certainly influence but not—as it ultimately becomes obvious—decisively determine the output of their interactions. In the course of the film we get to infer these motives: Chad is just fascinated with the "raw intelligence" he discovered and seems to be simply enjoying the probability that—perhaps for once in his life—he and intelligence can meet. Linda desperately wants to reinvent herself and her body as well as to find a boyfriend with a sense of humor. Ted is secretly in love with Linda and gets convinced to help her in her groundless plot. Harry is a hedonistic character who enjoys casual sex, remaining nevertheless dependent on his wife, immature and incapable as he is of undertaking any kind of responsibility. Sandy wants to get a divorce and get rid of her untrustworthy husband. Ozzie is full of rage and bitterness against the "morons" that seem to be chasing him his whole life, unable to acknowledge his mental superiority. Katie wants to maintain her finances intact and stay in control, away from her 'loser' husband.

In all cases, women in *Burn After Reading* seem to be plotting and maintaining some kind of control of the circumstances, while men appear to be victims, first and foremost of their own idiocy or lack of self-awareness. Women gather information: financial data (Katie), evidence about daily movements (Sandy), 'highly classified' computer files or just information about the marital status of their lovers (Linda), while men seem trapped in their web, killing each other without even knowing why (Harry ends up killing Chad, and Ozzie killing Ted, while they have never met before and they lack any direct motive). Their unreasonable violence appears to be an expression of the complications that the narration—exploiting the influence of its female actors—created. It is worth noting that paranoia, a defining characteristic of *Burn After Reading*, as already mentioned, was a *sui generis* male pathology for Freud, as Patrick O'Donnell notes: "The universe of the Freudian paranoid is an all-encompassing mirror for the narcissistic ego, whose imperialism is only matched by the repressed anxiety that it has been invaded by the woman, the other; but this alterity is, in fact, merely a displacement of the self same identity who both dreads and desires this invasion" (2000: 78).

Linda's character is the one most extensively developed and in her 'thread' of the story the two different levels of micro and macro causality seem to be in complicity. In two scenes

of *Burn After Reading*, we see Linda making a phone call to her insurance company, in order to ask if it covers the expenses of the four distinct cosmetic surgeries she wishes to make. The answering machine works with automatic voice recognition and asks her to pronounce the word "agent", in case she wishes to speak with one of the company's agents. Linda has to spell out the word many times because the machine does not understand her. Except for the failure of every communication of her with many different kinds of interfaces—from that of the "BewithmeDC.com" (the dating site she surfs hoping to find the man of her life) to that of the CD with Ozzie's files which she distortedly 'reads'—the way she repeatedly and impatiently shouts "agent" underlines in a comic way her stubborn mission to exert her agency against all the 'intelligence agents' who surround her.

Linda thus tries to be an 'agent'—even a 'secret' one—and to use the power of information to achieve her own goals (manipulating Chad too), but she soon realizes that it is not her agency that guides the events, as the latter seem to develop beyond her control. However, she manages to get 'on top' of the mesh created. The consequences temporarily challenge her belief in the power of "positive thinking", but in the end, Linda triumphs. She manages to convince the CIA to pay for her cosmetic surgeries, in order to "play ball", and give to those intelligence agents the information they are missing. As she earlier says to Ted, who does not seem to share her insights, "…information is power, Ted. Hello?" But it is not the information that she had been trying to steal—the one contained in Ozzie's memoir—that is more valuable, but the one created out of the poor probability of the characters' actions, which the CIA cannot foresee. According to the mathematical definition of information, the lower the possibility of a selection indicated, the higher the number of informational bits contained in a message (see Crosson and Sayre 1967: 5). *Burn After Reading*'s plot is in my view high in informational value because of its proceeding through improbable selections and the—seemingly—nonsensical actions of the characters it involves. And Linda, as the prototype of improbable reason, which is emotional (guided by the power of positive thinking) rather than analytical, is the one who manages to handle this information in the best possible way.

The individual behavior of *Burn After Reading*'s plotting women, that somehow makes an interesting match between them, or similarly the conspiracy paranoia that drives the way of thinking of many of its male characters (Harry, Ozzie) creates patterns of motives and individual reasons that contribute to the causality of the film's network. However, this pattern-like form of causality cannot be attributed and reduced (once the matching has already been made) to any single agency in particular. Even though it is the motivation of the singular characters that seems to be triggering some of the 'acting outs' taking place in the film, no

single character, not even the most intelligent or manipulative of them, is in a position to predict the range of the consequences of their actions' co-resonance.

Recent dynamical (and not graph-theoretical) approaches of networks as complex systems suggest that emergence of unpredictable properties in them happens at moments of "phase transition" (Barrat, Barthelemy and Vespigniani 2008: 97-98), which takes place when different systems and different components of their own resonate together (Marion 2006: 247). In a similar fashion, the action in *Burn After Reading* seems to be passing through thresholds of co-resonance, having augmented effects on the individuals composing its network. Such instances of co-resonance are found when the two worlds apart, and their different conception and handling of information, meet and interact, but also when from the level of individual characters and their isolated actions we pass to the collective patterns that their linked behavior creates. The human—interpersonal—agency of the characters is met in *Burn After Reading* with the one of informational networks that move in a different—accelerated—speed, and on a higher—global—level. The augmented consequences of their actions, which turn back upon the characters, seem to be a result of their attempt to accommodate to the flow of information.

Although the individual heroes seem still driven by a Cold War order that is supposed to have ended, as well as by the spy-genre conventions that this order reproduced, the spectator realizes, perhaps together with the Coens, that this order collapsed partly because the monopoly of the intelligence services on high-security information was no longer sustainable.[81] Information in *Burn After Reading* escapes in a CD, and this escape immediately marks a scattering of the pre-existing hierarchy. "Burn after reading" refers to the order given to spooks to destroy confidential documents before they fall into the hands of a third party. In the 2000s, 'burn' does not anymore mean to destroy; it also means 'to create a copy'. It is not the origin of information but its transmission that adds to its power; and the model of causality and agency that the transmission implies involves in-between nodes that support and maintain the network of distribution.

Information becomes power through the network it creates in and through *Burn After Reading*. His wife might be laughing at Ozzie because of his memoir, wondering "why in God's name would anyone think that's worth anything", but the latter becomes significant—at least in the world of Hardbodies—after being burnt to a CD and turned into 'information'. Not only Katie but also both the representatives of the historically rivaling power centers, the US intelligence service and the Russian embassy, find this information useless "dribble". However, an advantage is given to the 'small' agents that decide to "play ball" and use the information without understanding or even trying to understand its content. In the end, the whole picture of the action triggered by the protagonists—so frequently characterized as

"morons" in the film—elapses from the CIA. The intelligence service is obliged to restrict itself to the position of a passive, remote observer, unable to make sense of what is happening. The heroes of *Burn After Reading* may be unable to understand too, as they cannot get the whole picture of the network of their interactions. But neither the external spectators of the CIA can make any sense, because they miss the micro-details of the relationships between the heroes as well as information about their psychological needs. "Spare me", the senior agent interrupts Palmer who starts going into detail about how the characters (and especially Harry, Linda, and the Coxes, whom they seem to have under surveillance) "all seem to be sleeping with each other". The CIA's surveillance follows the network created by the characters but cannot really foresee and control action before it is finished; thus the CIA ends up dumping the bodies that the murders leave behind, but not solving the mystery behind them. Of course, for the CIA there is no mystery to be solved: the service wants to do away with what happened and erase the traces of a series of absurd incidents in which its former analyst seems to be involved. Thus the senior agent sounds more than relieved when he hears that Ozzie ended up in hospital in a comatose state. Reducing the network to its nodes and tracking them, or following a "building block" strategy—one that complex systems also use, according to some strands of complex systems theory—is the most successful way to control complexity (see Ed. Smith 2006: 75-78).

However, the complex interactions between the characters make the work of tracking harder. The way information is 'passed on' and acted out, rather than being cognitively processed, makes the characters looking more like informational vessels than psychologically fulfilled entities. As Evan Smith observes using the example of *Pulp Fiction*, "psychological transitions might be the greatest weakness" of "thread structure" films (2000: 90). Each character in *Burn After Reading* is given some sort of 'internal' motive but the events that follow cannot be seen as linear and logical consequences of any of the particular motives, or, even less, traced back to any one of them. The prevalence of nonlinear causality in *Burn After Reading* makes it a dynamic system, a system found in a "transient process":

> strictly speaking, all real systems are dynamic systems. However, when the duration of the transient process is negligibly small compared to the duration of the investigated phenomenon, and where the nature of the transient process does not have an important influence on the behaviour of a system, it is not necessary to take into consideration the dynamic properties of the system under consideration; it can be assumed that the changes in state follow instantaneously the causes which produce them. (Lerner 1972: 39)

In *Burn After Reading* though, the interactions between characters and the network they create do have an important influence upon the way their individual trajectories develop. But this influence is nonlinear and not easily attributed to any of the separate actors. Thus, if the film is seen as a diegetic network/system, the dynamics of this system make a cause-effect matching implausible. Thus it is important to "take into consideration the dynamic properties of the system", and see what transformations they bring about.

Even though the individual motives of actors in *Burn After Reading* are recognizable and anthropomorphic, the co-resonance of a number of agencies in the network of the diegesis is not foreseeable. The network's 'macro-agency' is the contribution of every single micro-agent to the network that connects it to all other agents, making their ensemble evolve in nonlinear and unpredictable ways. Through the emergent movement from the micro and singular to the macro and global, and, from the units of agency to aggregates, the anthropomorphism of *Burn After Reading*'s narrative meets the "elemental"—as Galloway and Thacker characterize it (2007: 155-157)—nature of complex networks and their dynamics, suggesting a shift from human to nonhuman (or systemic) ways of conceiving agency and causality in complex films.

In *Burn After Reading*, the system created by the agents' interactions may not be driven back to its initial conditions in the end of the film, but its change is not radical or subversive. Through surveillance—which becomes tighter the more the characters link to each other and interact—the CIA manages, perhaps not to understand, but certainly to conceal the links that connect the characters' action to the intelligence service. The CIA stays unaffected by their "messy" behavior. Thus, when it comes to the 'politics' of the film's network, this appears to be ambivalent at best, and certainly preventing the viewer from being excessively optimistic. After all, the network ends up serving the vain (and all-too-human) goal of Linda, to get the money for her cosmetic surgeries. Networks might have their own unpredictable dynamics, but their individual nodes, either big, like the State officials, or small, like the employees of Hardbodies, resemble a lot, as they use the same tactics as their 'opponents'. They spy as much as they are being spied, and are distinguished only by their 'positionality', while the networked system they all serve continues its smooth function.

An anthropomorphic reading of *Burn After Reading*'s causality, based on the motives of the individual characters and their resulting action, would miss out the dynamics of its network form, but this does not mean that a move away from such reading, and the adoption of a systemic model, would dismantle the attempts of tracing and surveilling the network's individual nodes—even though they would not be considered anthropomorphic anymore. This is a mode of surveillance towards which contemporary state powers, and not only in the fictional world of *Burn After Reading*, are oriented. As Dimitris Papadopoulos writes,

referring especially to neoliberal state models, "the neoliberal state needs, more than self-regulating individuals, networked actors who actively forge the structures necessary for the transformation from centralized state powers to disseminated modes of neoliberal regulation" (2008: 153). Such disseminated modes of regulation are still possible in non-anthropomorhic and complex networks.

A shift from the narrative to the complex systemic approach would make it easier to 'track' the network of *Burn After Reading*. The film, although hard to be described in a linear sequence, especially from the point when its multiple causal threads converge, would in my view be more easily described as a multi-agent system, adopting an adequate methodological approach. Agent-based models are used in computation in order to simulate the various actors in a system and make it easier to understand how a complex system develops from the micro to the macro level (see Bonabeau 2002). Hence, an adequate approach to this multi-character film would not be anthropomorphic and even less characterological, but agent-based.

Burn After Reading opens and closes with a moving satellite view resembling the ones we can get using the Google Earth software. The initial zoom-in places us at the micro level of the particular area of the world where the narrative will set off, while the concluding zoom-out adds a macroscopic distance to the events that just took place.[82] During the end credits, the camera takes off from the same point where it first landed in the beginning of the film, at the heart of the CIA's headquarters, and the dynamic network that so far has been shaped by the diegetic interactions, gradually gives its place to a global view.

Panning or bird's-eye-view shots have been used to close a great number of classical Hollywood narratives, offering a safety distance to the viewer in order to reflect upon the events that have just taken place. One could argue that the same effect is achieved by the concluding zoom-out of *Burn After Reading*. Metaphorically, this safety distance is also what narrative meaning making, at the point of 'equilibrium', is supposed to achieve. However, one wonders if perceiving narrative cinema in the context of such meaning making from a 'safety distance' (kept and reproduced by the supposed closure of meaning when the story is completed) does not itself belong to a pre-network, Cold War era, that film theorists, just like Ozzie, hesitate to abandon. A closer look into narrative's complex dynamics could make us see the benefits of "operating off the map", according to Linda's spook-inspired expression.

In the closing of *Burn After Reading*, the view from above is not more comprehensive than the partial view from below, nor does it offer a feeling of safety distance. It rather creates a sense of vertigo as the viewer finds him or herself inside this global paranoia. The final fast and dizzying zoom-out extends Washington's irrationality from the local to the global level, suggesting that making perfect sense is a helpless endeavor, even when distance is taken;

contemporary forms of world order are impossible to understand following logical and sequential reasoning, and contemporary films cannot do else but demand new skills from their audience in order for it to achieve some level of understanding—which has to retreat from constituting a coherent and logical sequence of action. *Burn After Reading*'s network of human and unhuman agencies develops as a system through 'infinitesimal perturbations', which make the story's progression nonlinear—impossible to go back to its initial state due to the constant increase of complexity—and also impossible to infer with precise logical steps, or deduce from one single perspective.

5. Agents and patterns of causality in traditional and network narratives

In chapter 4 I highlighted the complex workings of causality and agency in *Burn After Reading*. Here I will embed this analysis in a broader discussion of the role of causality in complex films. First, I will briefly present the way that causality has been conceived in narratological models, which have also influenced film narratology. I will then ask to what extent complex films differ from these accounts of narrative causality, requiring a shift in our theoretical approach beyond the prevailing models. As a point of reference I will use the case of "network narratives" (David Bordwell), which, from a broader angle, have also been characterized as "multi-character" or "ensemble" films. The multiplicity of characters/narrative actors that these films usually involve and their "loose" cause and effect chains will be explored as possible factors of their deviation from other films. However, the question of what constitutes loose causality still remains. I will argue that the answer to this question cannot be provided through the traditional Aristotelian or structuralist approaches of narrative causality. An approach of complex films as complex systems suggests that causality in them is an emergent attribute of the interactions among their basic components.

Narrative and the principle of causality

Causality, the way that recipients interpret narrative events as relating to each other in sequences of causes and effects (Kafalenos 2006: viii), is the driving force of narrative. As Branigan characteristically declares: "If I were forced to use a single word to characterize a narrative organization of data, that word would be 'causality'. Creating time and place in a narrative is not as important as constructing a possible logic for the events that occur" (1992: 216). The definition of narrative that he suggests is "a way of organizing spatial and temporal data into a cause-effect chain of events with a beginning, middle, and end that embodies a judgement about the nature of the events as well as demonstrates how it is possible to know, and hence to narrate, the events" (*ibid*: 3).

Causality is not only a matter of interpretation of narrative events; texts themselves prompt recipients to formulate various causal interpretations. The function of narrative causality presupposes diegetic and character-based action, and the changes brought by it. Literary theorist Didier Coste points out the association of narrative with "'action' or 'making', if not with causality" (1989: 42). Causality in narratives operates through agents—actors or 'actants'—and the "functions" they perform. According to Mieke Bal, as long as stories are constructions made by humans, involving human characters and addressed to humans, they are based on "the presupposition that human thinking and action is directed

towards an aim" (1985: 26). Causal action is carried by agents and is most of the times oriented towards a goal. The association of causality with meaningful action is so widespread that many narratologists distinguish between narrative and other forms of texts in which causal connections through actions are not prevailing, for example descriptive passages.[83] Narrative is a teleological construction, demanding a subject and its "will to execute his or her program" (Bal 1985: 33). Such 'will' provides the story with the necessary energy in order for it to unfold in time. As long as we think of agency in narratives as a goal-directed activity, it is difficult to detach it from cause and effect chains at the micro-diegetic level, that of characters' actions.

Although characters are always causal agents, the actions that drive a narrative's causality are not always character-driven. Bal distinguishes between actors and classes of actors (actants) and distinctive characters in narrative texts. The former two might also be inanimate and their role is structural (always related to the overall teleology of the fabula), while the latter correspond to human beings, and from the semiological point of view, they consist in semantic units (Bal 1985: 79). The actantial model was introduced in narrative theory by the Lithouanian-French semiotician Algirdas-Julien Greimas, who in turn borrowed the term 'actant' from the linguist Lucien Tesnière. Actants may be defined as "names of roles" (see Coste 1989: 135). The notion of actant, also becoming influential in social theory through "actor-network theory", suggests a step beyond the micro-diegetic level, by adopting a transindividual perspective. It is also helpful in order to conceive of larger patterns of causality involved in narratives, although even this notion of actant does not escape some degree of anthropomorphism. For instance, among the examples of actants that Bal provides are "The old people", "The Marxists", etc. (see Bal 1985: 27).

What I would describe as two different kinds of causal analysis in narratives, namely the approach focusing on the micro-diegetic level of causality (actors) or the macro-diegetic level (actants) correspond to different models of narrative analysis. Particularly in film, these different models are summarized by Elsaesser in *Studying Contemporary American Film*. On the one hand "the *Aristotelian model* [by comparison to the structuralist model] seems to stress overall unity (of time, place, and action), rather than segmentation. It also centres on characters as initiating agents rather than on interpersonal transactions (functions) as the core elements of narrative" (1992: 30; emphasis mine). On the other hand, the *structuralist and poststructuralist model* of characters and causality is "functionalist and relations-based, essentially a-causal and instead more complexly 'logical' and 'semantic'" (37). In this chapter, my goal is to introduce into the study of causality in narratives the complex systemic approach, which attempts to capture the emergent dynamics of form that stay outside the Aristotelian and the structuralist model of narrative analysis. These dynamics can be pictured

as emerging from the micro-level of characterological action and linking it to the macro-level of narrative structure.

Causality and transformation

One classical narratological model that perhaps could be considered as proto-complex systemic (because of its emphasis upon dynamics, as I will discuss in more detail in chapter 6), is the one of narrative equilibrium, suggested—in 1960s France—by the Franco-Bulgarian philosopher Tzvetan Todorov, who also coined the term "narratology". Todorov considered narrative causality a dynamic process tending towards equilibrium. For him, equilibrium seems to be a fundamental structuring principle of narrative:

> The minimal complete plot consists in the passage from one equilibrium to another. An "ideal" narrative begins with a stable situation which is disturbed by some power or force. There results a state of disequilibrium; by the action of a force directed in the opposite direction, the equilibrium is re-established; the second equilibrium is similar to the first, but the two are never identical. (Todorov 1977: 111)

Thus, according to Todorov's model, narrative is "a causal 'transformation' of a situation through five stages" (Branigan 1992: 4), or five fundamental "actions": initial equilibrium, disruption of this equilibrium, recognition of disruption, repair of disruption, reinstatement of the initial equilibrium.[84] Todorov here on the one hand follows a logic derived from Aristotelean poetics, and his division of drama in a number of specific acts/stages. On the other hand, Todorov's contribution focuses on the structure of the form, thus it is more structuralist than Aristotle's model in this respect. I would add that, due to Todorov's addition of an element of dynamics in the study of narrative, his model stands closer not only to linguistic but also to physical systems.

The complete five-stage equilibrium model is an ideal case, as Todorov himself stresses, and he recognizes the existence of cases where the narrative does not do full circle but describes "only the passage from an equilibrium to a disequilibrium, and conversely" (1977: 118). Although the first two, or sometimes the last two stages might be omitted, suspending a 'happy end' or a satisfactory resolution, all narratives can be thought of as parts of the full five-stage circle (*ibid*: 39). In this respect, narrative teleological causality can be imagined as a trajectory towards equilibrium, even in cases when the latter is not finally achieved. The phase of equilibrium is considered by Todorov as static (and corresponds, at the grammatical level of predicates, to the role of adjectives), while disequilibrium is the dynamic phase, corresponding to verbs (*ibid*: 111, 120).[85] However, if the above described "full circle"

constitutes the basis of the narrative model, then narrative dynamics is overarched by a symmetrical construction—defined by the initial and the concluding equilibrium. Indeed, as Branigan notes, both Todorov's as well as Vladimir Propp's classical narrative analyses are oriented towards the "large scale symmetries" of narratives (1992: 9), and, in this respect, deviate from the characterological focus of Aristotelian drama. These large-scale symmetries are not causal in the strict sense of the word, which implies a more or less direct relation between an effect and its cause (see Branigan 1992: 27). Moreover, their function is not to drive the action forward. They rather pertain to what Todorov calls transformations, referring to larger patterns of change that do not follow strict cause and effect sequences.

Todorov's model has been associated with equilibrium, because of its emphasis upon symmetry. However, it seems that what really defines narrative for Todorov is change and disequilibrium. The latter is the necessary (and perhaps sufficient) condition for narrative to exist. I quote a characteristic passage from his article in *Diacritics*, where he analyzes Boccaccio's *Decameron III*:

> But what is it that *makes* this narrative? Let us return to the beginning of the story. Boccaccio first describes Naples, the setting of the action; then he presents the three protagonists; after which he tells us about Ricciardo's love for Catella. Is this a narrative? Once again I think we can readily agree that it is not. The length of the text is not a deciding factor—only two paragraphs in Boccaccio's tale—but we sense that, even if it were five times this length, things would not have changed. On the other hand, when Boccaccio says, "this was his state of mind when …" (and at least in French there is a tense change here from the imperfect to the aorist), the narrative is underway. The explanation seems simple: at the beginning we witness the description of a *state*; yet this is not sufficient for narrative, which requires the development of an *action*, i.e., change, difference. (Todorov 1971: 38)

What is not permitted to narrative, it seems, is the stasis of non-action. Change defines narrative, either at the micro-level of characterological action, or at the macro-level of "transformation".

Narrative transformations might be 'a-causal' but they still evoke causality, although not in the sense of cause and effect sequence. Because of the emphasis upon change, I would argue that, even at the level of transformations, causality is still in place, but it is a sort of causality acquired through transformation. No matter where the transformative agency lies, in anthropomorphic actors (with their desires, goals and internal motives) or in actants (classes of actors), the overall patterns of change make a narrative causal, as long as they reveal its status as an organization that develops in time. Focusing on the specific case of multiple-character

"network" films, I will show how the multiplicity of actors is an important starting point in order to shift to a different model of causality, which combines but also transgresses the ones mentioned above.

Causality in complex film narratives

The group of complex films that I will discuss in more detail in the following part of the chapter are the films that have been characterized as "network narratives". It is through this group of films, with which *Burn After Reading* shares many characteristics, that the issue of causality in the films of the complex narrative tendency has been raised. At the micro-level, causality in many complex films is distributed across an intricate network of characters. Beyond the level of individual actors though, the role of transcendental factors, such as chance and contingency, takes a central place in many of these films, making the overall causal patterns less anthropomorphic.

The feature that stands out and arguably defines the type of causality in complex network films is the increased—in relation to traditional Hollywood narratives—number of characters. Films with multiple characters and multiple stories have often been labeled "ensemble films". In his taxonomy of the "Tarantino phenomenon", as he calls the complex film tendency of the last two decades (since the mid-1990s), Charles-Ramìrez Berg classifies recent films with multiple characters in the category of "polyphonic or ensemble plot". According to him, "the majority of the alternative narrative films fall into this category, a variety of the multiple protagonist film" (2006: 15). From the perspective of my research, ensemble films form a significantly large sub-group of complex narrative films. Berg includes in the ensemble plot category films such as *Pulp Fiction* (Quentin Tarantino, 1994), *Magnolia* (Paul Thomas Anderson, 1999), *Code Inconnu* (Michael Haneke, 2000), *13 Conversations about One Thing* (Jill Sprecher, 2001), *Crash* (Paul Haggis, 2005), and others.[86] Not all multiple-protagonist plots are ensemble plots, as Berg stresses, but only those in which there is no one single goal that unites the characters. Berg considers the polyphonic/ensemble plot as ideal "for portraying social cross-section" (2006: 18). Despite the absence of a "single goal", in many of these stories the characters' fates get entangled in "a single location", which can be a hotel, apartment block, city etc.

Another plot category that Berg distinguishes, apart from that of ensemble plot, is of particular interest here. It is the category of the "hub and spoke" plot, which, although again involving multiple protagonists, Berg classifies under the broader group of "nonlinear plots", shifting the focus from the number of protagonists to the issue of time and causality. In this category Berg includes, among others, the films by González Iñárritu *Amores Perros* and *21 Grams*, which have been used as examples of the complex narrative tendency by many

theorists. In "hub and spoke" plots, as Berg notes, "multiple characters' story lines intersect decisively at one time and space" (2006: 39). Cross-sections of characters in time and space are also key-features of ensemble plots, but what makes "hub and spoke" plots distinctive is their emphasis on chance events and contingency. According to Berg, these plots

> thematically […] demonstrate the frailty of agency by presenting a world where happenstance prevails and best-laid plans come to naught. At a formal level, they question whether causality and characters' choices, the bedrocks of Hollywood's classical narration and narration in general, are valid as narrative mainstreams particularly in contemporary dramas and romances. And because causality is foundational not just for movies but for life, particularly American life, the ideological implications of such challenges are seriously subversive. (2006: 40-41)

"Hub and spoke" plots problematize causality and experiment with non-causal connections between events. Both ensemble and "hub and spoke" plots have many similarities with Bordwell's category of "network narratives", which combines the multiplicity of characters with the role of chance that creates connections between them.

The category of network narratives has been suggested by Bordwell in order to describe the contemporary revival of multiple protagonist films. According to him, the format of network films "crystallized in the 1980s [with directors such as Robert Altman, Jean-Luc Godard and Otar Iosseliani being among the first who experimented with it] and was revivified in the 1990s" (Bordwell 2007: 245). Bordwell points out that network films contain an aggregation of characters that makes the plot more "complex" (2006: 96), as the intersections between them are not obvious from the beginning nor easily established through preexisting relations, and thus need to be built gradually, making use of various plot inventions.[87] Because of the intersection of strangers involved in these films, Bordwell considers them expressions of the lay interpretation of network theory (as "six degrees of separation") and products of the exchanges between network and chaos science and popular imagination. To explain his use of the term "network" in his description of contemporary "criss-crossers", as the *Variety* magazine has labeled multi-character films, Bordwell refers to the sociological model of networks that was developed after the 1950s "small world" experiments of the social psychologist Stanley Milgram. According to this model, networks are composed by links between individuals, and, as Bordwell notes, "most network theorists define a link as a personal acquaintance" (2007: 198). Apart from this increasing awareness of social networks, other cultural factors, such as the rising internet literacy, contributed, according to Bordwell (2007: 197), to the wave that revived network narratives in the mid-1990s—with films such as *Short Cuts* (Robert Altman, 1993), *71 Fragments of a Chronology*

of Chance (Michael Haneke, 1994), *Chunking Express* (Wong Kar-wai, 1994), and *Pulp Fiction* (Quentin Tarantino, 1994).

The network is composed "when strangers intersect", and chance is what drives their intersections, no matter how goal-oriented their individual trajectories may be. In network narratives, Bordwell notes, "The plot structure […] must find ways to isolate or combine characters in compelling patterns that will replace the usual arc of goal-oriented activity. The principal source of these patterns […] is chance" (2007: 199). Coincidence that makes people meet (or even, kill each other, as in *Burn After Reading*), contingent events and encounters, circulating objects, accidents and internet friendships:[88] does causality play any role in network narratives? And if yes, what forms does it take?

Bordwell uses the term "loose causality" in order to account for the lack of tight cause and effect sequences in network narratives, which seems to be, according to him, the distinctive characteristic of these films (he discusses in detail the films *Nashville*, *Magnolia*, *Favoris de la Lune* and *Les Passagers*). In network films, the characters' lives, which are rather autonomous, eventually meet and separate not as a result of the characters' purposeful actions but as an outcome of pure chance. A "car accident" is the typical plot invention used to bring characters together in network films, and Paul Haggis' *Crash* (2004) drew this convention to the limit. This loose type of causality in network narratives does not preclude the expression of more traditional characterological causality in them, and Bordwell's theorization allows for different degrees of causality to be at play in these films. All characters might have their own goals (for example in *Crash*, to which Bordwell refers, or in *Burn After Reading* discussed here), however this does not stop contingency from changing their lives in unpredictable ways.

Bordwell's observation of 'loose causality' in contemporary complex films is valid, in the sense that many events in network narratives "just happen" and are *not* attributable to an "overarching causal project" (2007: 193). However, Bordwell does not elaborate on the characteristics of this loose causality, which is mostly negatively defined. Calling the causality of (a group of) complex films "loose" implies a pre-definition of causality as being tight. This form of 'tight' causality has been considered as characteristic of classical narrative cinema:

> Events in the story are typically organized in a relationship of cause and effect, so that there is a logic whereby each event of the narrative is linked to the next. The classic narrative proceeds step-by-step in a more-or-less linear fashion, towards an apparently inevitable resolution. (Cook and Bernink 1999: 40)

This cause and effect logic in classical narrative cinema needs to be supported, on the one hand by temporal and spatial coherence (see Burch 1973), and on the other hand, by agents—

most of the times one central hero—presented as "fully rounded individuals" with well-developed personality and corresponding motivation. It is against this backdrop of tight characterological causality that the 'loose causality' of network films is defined. Bordwell's evaluation of causality in network films is made using classical narrative and anthropomorphic standards—the latter in the sense of events caused by human actors and bringing forth other events as consequences of the previous actions. This is a definition of causality based on the Aristotelian model of drama—which is not to be confused, however, with Aristotle's categories for natural causality.[89]

Characterizing the causality of network narratives as loose, Bordwell also comments upon the "tension between fate and chance" in them, and the slip of many into a "secular theology" (2007: 213, 214) or a "design that governs coincidences" (*ibid*: 232), through an apparent 'worship' of chance. Here Bordwell hints at a second (macro) level of causality in network films, the causal power of which, however, does not fit into the characterological conceptions of causality. Thus, network films problematize this type of causality with which narrative in classical cinema has been associated. However, the adjective 'loose' only applies to the case of characterological causality. Causality still remains tight on a different level, since fate and chance in many 'network narratives' become important sources of causality, which might be tighter, in terms of determinism, than the character-driven causality—even though less linear.

A form of causality based on the workings of destiny, even though not as anthropocentric as the tight actor-based causality, is in a sense 'classical' as well, as it has always been playing a significant role in the structure of drama. In his discussion of chance in network narratives as "God's way of seeming anonymous" (2007: 214), Bordwell tends to substitute the determinism of events at the characterological micro-level, for the one at the macro-level of transcendental powers, and ultimately of (extra-diegetic) narration and plot construction. Warren Buckland's discussion of the two plot lines involved in classic complex plots is instructive in this respect. As long as in network narratives chance tends to dissolve into fate, network films would not really differ from the 'traditional' sense of a plot's complexity that dates back in Aristotelian *Poetics*. According to Buckland (2009: 2-3), the classical tragedy of Sophocles, *Oedipus Rex*, is an example of the plots that Aristotle considered as complex (*peplegmena*). In complex plots two different lines of causality are at play, the (micro-)causality of the characters' actions, and the plot's (macro-)causality, which enters through "reversal" (of "good fortunes") and "recognition", by the character and the viewer, of this reversal. This second plot line becomes influential both intra-diegetically (determining the character's fate) and narrationally, making the plot more "complex". Towards the final catharsis though, as Buckland stresses, the two plot lines tend to converge:

the complication (expressed through reversal and recognition) and its outcome gets finally integrated into the path predestined to the protagonist, diegetically through the power of fate and narrationally through the closure and wholeness that narrative construction demands. Thus, 'everything happens for a reason', even though this causal-logical sequence can only retrospectively be observed and established by the viewer/recipient.

Something similar seems to be happening both in the films that Bordwell discusses as forking path narratives (as Buckland points out), and in those he calls network narratives. For instance, in *Happenstance* that Bordwell discusses in his—explicitly Aristotelian—*Poetics of Cinema*, an impressive number of chance events such as a "discarded cookie", a stolen coffeemaker and "a pebble thrown out of the window", seem to be happening only to bring together two characters that were either way destined to be together. Here, too, the complexity of the plot ultimately boils down to the classic love-story resolution of traditional Hollywood films.

The discussion of this film in *Poetics of Cinema* is indicative of the way Bordwell appropriates and adopts network theory to (classical) film theory. Although up to a point he emphasizes the divergence of network narratives from classical narratives, especially through "loose causality" and the prevalence of chance, he tends to emphasize the "return to the customary path" of classic narration (2007: 242). In this respect, Bordwell's discussion of complex films, either as "forking-path" or "network" narratives, stands closer to the Aristotelian definition of plot complexity, where the divergence from the main causal line gets finally integrated back to it, leading to the fulfillment of the hero's destiny and to closure. Similarly, Bordwell's application of network forms of complexity in film narrative theory tends to de-emphasize emergent dynamics and stress predestination.

In Bordwell's theorization of network narratives, chance and contingency, key-notions in complex systems theories, appear succumbed to predestination. The chance events that proliferate in these films are interpreted as ultimately serving the overarching causal line of the plot, which intra-diegetically takes the form of destiny. That is why Bordwell and other commentators see a transcendental element in the prevalence of happenstance in complex films. The interference of chance as a transcendental factor makes the connections between characters appear almost "metaphysical", tending towards a kind of totality (Silvey 2009).

Chance is a system of causation in its own right, considered as such especially since the end of Enlightenment, and works of contemporary narratology acknowledge its causal power (see Richardson 1997: 15, 20, 62). In literary works as old as Aphra Behn's *The Lucky Chance* (1686), which literary theorist Brian Richardson refers to, but also in the 'network narratives' of contemporary complex films, chance is a *cause*, but at the same time it disrupts *causality* in the sense of one-to-one relationships between events as causes and effects. A

chance event might start a chain of causality but itself cannot be explained as the result of a pre-existing cause. It thus becomes hard to establish any chain of causality when there is, not just one, but a proliferation of chance events within a text. The central role that network films ascribe to contingency can now be highlighted in its tension with the type of causality that defines narrative.

Many complex films develop around the effects of chance events. However, here the effects do not correspond to their causes by logical necessity, neither are they exclusive. The same contingent event may have entirely different outcomes, and this is something that network films stress. The multiplicity of characters in these films is particularly functional in illustrating the complex effects of chance. For instance, in the film *Code Inconnu*, the same contingent event, a pastry bag discarded by one character, affects the lives of all other characters, but has very dissimilar outcomes depending on which character it affects. Chance has an organizing power that interacts with the pre-existing organization of the world upon which it exerts its influence. But this is different from claiming that coincidence is governed by a design, and that it ultimately succumbs to this design.

But to what extent is causality in complex films non-traditional, one may ask, since traditional narratives have also been sparing a place for loose causality? Seymour Chatman differentiated between causality and its looser form, which he called contingency, borrowing the term from philosopher Jean Pouillon:

> In traditional narratives, the internal or story logic entails the additional principle of causality (event *a* causes *b*, *b* causes *c*, and so on) or, more weakly, what might be called "contingency" (*a* does not directly cause *b*, nor does *b* cause *c*, but they all work together to evoke a certain situation of state of affairs *x*). (Chatman 1990: 9)

Contingency blurs the initial causes of events, thus, even though to some extent contained in traditional narratives, becomes much more pervasive in the non-traditional ones, such as Robbe-Grillet's—paradigmatically non-linear for literary theory—texts. Thus, as Chatman notes: "The idea of contingency is attractively broad, for it can accommodate new organizing principles" (1990: 47). These new organizing principles become in contemporary complex films, as I argue in this dissertation, much more pervasive than before, questioning the primacy of the traditional organizing principles of narrative.

From heaps to systems

Network narratives, as I already pointed out, include a multiplicity of characters, who are given almost equal merit of the narrative time and agency. By focusing only on the number

of characters, however, the adjective "network" does not offer us more information than the older label of "ensemble" or "multi-character" narrative, a common trope in other media products as well, such as TV soap operas. A network is not a sum of individuals; it is a system as long as links connecting the individual nodes organize them into one collective organization. It is the entanglement of the units that makes a network—and a network film—complex.

Bordwell refers to network narratives in cinema as "catalogues" (2007: 212), because the separate stories they contain (through the different characters) stay for the most part of these films discrete, and actually function, in the mind of the viewer, as 'alternatives' according to some common criterion. I will address this aspect in the last part of this thesis, but for now I would like to expand on the function of the catalogue. Emphasizing the catalogue-like form of complex films Bordwell seems to bringing them closer, in my view, to the "categorical form" of films, which in his book with Kristin Thompson *Film Art* (first edition 1979) he described as "nonnarrative".[90] However, in his theorization of network narratives Bordwell soon demonstrates how even though resembling catalogues, network films easily succumb to the principles of narrative organization. It is a fact that complex films create story worlds, and thus they are not so radically 'anti-narrative' like the documentaries that use the categorical form, to which Bordwell and Thompson refer. However, my contention is that complex films use this non-narrative form, which Bordwell and Thompson compare with a catalogue, in order to organize into systems that do not necessarily become narrative.

A catalogue is not a system but a list of elements; a system needs relations between the elements in order to form itself. I would argue that one of the ways through which network films become meaningful—and communicate with the viewer—is the experience of the process through which a catalogue or a heap[91] (a "summative complex", according to systems philosopher Ervin Laszlo) becomes a system (a "constitutive complex"). The absolute disentanglement of elements that a heap suggests would abolish a film's communicative potential. As Laszlo points out: "If subsystem communication is reduced to zero, the whole system has zero level of organization; i.e. we are dealing with a limiting case in which the whole system ceases to be a system and becomes a heap of independent components" (Laszlo 1972: 250). Thus, in systems theory, it is the communication between elements, or system components, that makes a system (a constitutive complex) distinct from a heap (a summative complex): "the more two or more components communicate, the more information they pass to one another, and thus the more they determine each other" (*ibid*). In network films, the flow of information and communication increases gradually, as the separate agents and story components are linked to each other and begin to create a collective organization. In the previous chapter, I stressed the way in which the characters of *Burn After Reading* function as

informational vessels, passing on the information they receive (the CD being a diegetic metaphor for information), without cognitively processing and understanding it. But through the connections and interactions between characters/agents—who are at the same time basic diegetic components—that such handling of information entails, the diegetic information gradually transforms into systemic information at the extra-diegetic, 'formal' level of the film. Thus the film becomes a constitutive complex.[92] The complex systemic framework allows us to see the diegetic interactions as primarily informational and secondarily anthropomorphic/characterological. Moreover, it shows how the structure that these interactions create at the formal level of the film is not closed and symmetrical but open and nonlinear. Thus, instead of concluding that network films ultimately become classical narratives, as Bordwell would have them, I would argue that they lead to organizations that are different from narrative.

The degree of components' codependency in network films increases because of the greater spatial disparity of information across different agents and plot threads, as none of these individual pieces composing the narrative is omniscient. The relative lack of information makes the connectivity and communication between units necessary, and through the increase of connectivity the units may form a system.[93] At the textual level of complex films, the co-dependency of both characterological and structural (agents/actions) elements increases through interconnections, and creates the causality of the filmic text in a different way than the one implied by the classical conception of narrative and its particular type of causality. Complex causality may be better conceived as a cumulative, nonlinear and emergent effect, rather than as an event-sequence of causes and effects (or 'focused causal chains').

Complex network films display a multi-directional and multi-level causality that can be seen as the product of a feedback circuit that connects in the same network the agencies of different actors/actants across the different diegetic levels. At the intra-diegetic level, a complex film brings together and 'interlocks'—through parallelism or crosscutting—separate agents/actors, and along with them, separate parts of the film's text that correspond to each character's perspective upon the diegetic world and function within it. It is not just the number of characters but the connections between them—and how they are effectuated—that become prevalent. What brings the actors together (intra-diegetically) might be chance, but the result of their interactions cannot be attributed to chance alone; rather, it is the emergent product of their relations. Moreover, chance itself is caused by relations, as contingency seems to be triggering further contingency. The proliferation of chance events in a film is incompatible with narrative causality, because chance cannot be easily attributed to a cause; but it can be attributed to the synergy of many causes and causal agents, which may bring unexpected consequences. Causality is similarly *acquired* at the structural, extra-diegetic level of

'ensemble' complex films, as their multiple actors autonomously participate in the generation of the dynamics that drive the plot forward in a nonlinear way.

Network films derive their dynamics from the connections, on the one hand between a multiplicity of autonomous agents, and on the other hand, between different diegetic levels that these relations produce. Thus, from the micro-level of actors we move to the meso-level of their complex constellations, and the macro-level of system dynamics (the level of transformation in Todorov's model). An "agent-based" approach to film narrative analysis, following the logic of agent-based methodologies used in simulations of complex systems,[94] would allow for a unidirectional feedback circuit to be established between the different narrational levels. The micro-diegetic level of characters and actions gives way, through complication of relations and nonlinear causality, to aggregates of agency at the meso-level. Mutual causal processes take place across levels. On the one hand, higher-level "medium-agents", who are the result of (or, in simulations, who are introduced as models of) the aggregates of individual units/micro-agents, feed back upon the micro-agents; this can be seen in network films such as *Burn After Reading*, where, from a point on, all actors are affected by the connections created between them, which influence both their individual trajectories as characters and the plot's structure. The meso-level of interconnections introduces constraints to the micro-level, but at the same time contributes to the overall transformation, taking place at the extra-diegetic macro-level, of the text into an organization that acquires a causality of its own. Narration, however, may not introduce the medium agents, as simulation does. These agents emerge from the aggregate agency of micro-actors. Narration takes place through the interplay of macro and micro-level, but does not directly address the meso-level of aggregate micro-agency. Causality in complex films takes place across all three levels and is differentiated, by means of its emergent properties, both from the character-based 'behavioristic' causality and from the one of totalizing and deterministic structures, either intra or extra-diegetic.

Towards an emergent conception of causality in network films

Recent approaches to networks as complex systems are more interested in their dynamic properties (see Barrat, Barthélemy and Vespigniani 2008). It is not only the shape and spatial distribution of connectivity, but also the actual workings of it and the way a network self-organizes and develops as a dynamic system that attracts the attention of network scientists. Causality cannot be bracketed out from accounts on how a network system comes to being and evolves out of the separate elements/nodes that compose it. A network is not caused by the individual actions of the elements that compose it neither by a single transcendental and overarching cause; it rather emerges as an organization of a multiplicity of agencies and their

complex relations. This organization acquires a causality that is not anthropomorphic but systemic, and which, through a feedback process, in turn influences the units that now participate in the collective organization. Thus, I would argue that in complex films such as those containing networks of characters, it is not just that "contingency replaces causality" (Bordwell 2007: 204), but rather, a different form of network causality is created, which couples with contingency rather than excludes it. Every complex system evolves in a constant exchange with contingency, and achieves its organization through the interplay between contingency and structure.

Moving towards an understanding of the complex causal workings in network films, an updated conception of networks as complex systems would be required. Everett seems to be pointing at the framework of complex systems theory and particularly chaos and network theory as more adequate in the theoretical approach of films such as *Free Radicals* (Albert, 2003), *Run Lola Run* (Tykwer, 1999), *Code Unknown* (Haneke, 2000), *Amélie* (Jeunet, 2001), and *Intermission* (Crowley, 2003)—films that she prefers to call fractal. As Everett notes:

> What is new about today's understanding of networks, and what makes it impossible to approach them with simple linear graphs (in mathematics or physics) or with straightforward linear narratives (in films or novels), is the recognition of their essential complexity. Complexity is characterized by variety, heterogeneity, and the fact that the various elements in a compound behave in random and different ways. Networks are complex systems because they exist by interacting; and they are dynamic because they evolve and change in time, driven by the random activities or decisions of their very components […]. (Everett 2005: 162)

In agreement with Everett, I do not find that the complexity of ensemble/network films, based on the interactions and relations between their components, as well as on their evolvement in time, has been addressed, let alone sufficiently explored. Thus the question that I attempt to answer in Part 2, taking into consideration the theorization of network films summarized in this chapter, is how the complexity of these filmic texts and the dynamic flow of information in them generates causality. I think that a shift of theoretical and methodological framework, from narratology to complex systems theory, is necessary in order to gain insight into the issues of causality involved in multi-agent, network films. Causality works differently in complex networks. It does not suggest just a complication of linear cause and effect arrows; rather, it is an emergent procedure. The systems theory of complex networks offers useful tools in order to think of how the organizing principle of causality, the cornerstone of narrative, is succumbed to a 'new organizing principle', which in complex systems theory is emergence. Networks are dynamic complex systems that acquire causality as they emerge out

of the links between units. In the following chapter I will focus on the workings of causality through emergence.

6. Causality and emergence through complex systems and narratives

In complex systems, causality is entangled with internal complexity and self-organization. As we saw in Part 1, Luhmann described how systems acquire their causality through self-organization. This is an *emergent* approach to causality, as it describes a system that becomes causal as soon as it constitutes itself. In the latest years, a nonlinear conception of causality also gains ground, complementing—and not contradicting—the emergent causality of the system. This nonlinear causality is involved in the constitution of the system by its units. Rejecting proportional cause and effect sequences, this conception accounts for the ability of units and their complex interactions to make way for the system's emergence. It acknowledges the agency and causal power of elements, which work in synergetic networks rather than linear sequences. Causality in complex systems offers a model for thinking causality in complex films as having a similar nonlinear constitution and self-organizing function. Especially network films attract the attention to the nonlinear workings of causality in the process of their textual and cognitive organization.

Emergent causality

Emergence is a concept that in the last years has been taken up by the study of complex systems, and refers to the self-organization achieved through complexity. The two terms—emergence and complexity—are often used interchangeably in the relevant literature, although complexity is a more 'technical' term compared to the philosophical background of emergence. Even though the study of emergence in complex systems still remains in many respects an obscure process that has not yet been explained is a systematic way (see Sengupta 2006: 324 and 350), the common assumption of those who study complexity is that emergence is opposed to fixed structures that determine their components, but also to the simple reduction of a system to the number of its constituents.

In order to explain my claim that causality in complex films can be thought in terms of emergence, it is necessary to introduce in more detail the concept of emergence, as it has been developed first in philosophy in the beginning of the last century, and later in (complex) systems theory. The philosophical sense of emergence dates back to 1875, when George Henry Lewes used it in his work *Problems of Life and Mind*. In the late 19th and early 20th century, emergence was a central concern for the cycle of British Emergentists, who participated in the debate between mechanists and vitalists about the genealogy of sciences. Emergentists occupied a moderate position, resisting the reduction of biology, and secondarily of chemistry, to physics. Life, according to them, is not just an outcome of mechanical laws,

neither is it a substance itself; some of its qualities continue to be irreducible to mere mechanical processes. Among the most important figures of British Emergentism have been John Stuart Mill and Charlie Dunbar Broad. While Mill retained the attribute of causality in emergence, Broad initiated (in *The Mind and its Place in Nature*, 1925) a "synchronic, noncausal, covariational account of the relationship of emergent features to the conditions that gave rise to them" (O'Connor and Wong 2009); his account has certain affinities with the contemporary revived interest in emergence. The 'noncausal' character that British Emergentists ascribed to emergence is due to the fact that emergent laws are "trans-ordinal", as Broad called them, that is, they refer to the connection of one order (or level) with another, and do not apply in the case of elements situated within the same order. Trans-ordinal laws can only be found *a posteriori* and at the higher level, and cannot be predicted by any existent law about the composition of lower-level elements: "[…] we must wait till we meet with an actual instance of an object of the higher order before we can discover such a law; and […] we cannot possibly deduce it beforehand from any combination of laws which we have discovered by observing aggregates of a lower order" (Broad 1925: 79, as cited by O'Connor and Wong 2009). Trans-ordinal or emergent laws "describe a synchronic noncausal covariation of an emergent property and its lower-level emergent base" (O'Connor and Wong 2009). "Noncausal" here means that no single law of the lower level can account for the property that emerges at the higher level, thus direct cause-and-effect chains between different levels cannot be established. According to Broad's approach to emergence, "high-level causal patterns" are additional to those at the lower level, and they can exert influence upon the lower levels, in a manner that has more recently been characterized as "downward causation" (see Campbell 1974).

Other British Emergentists, and especially Samuel Alexander, have been more influential than Broad in contemporary science. Alexander's view of causality is summarized by Philip Clayton as follows:

> evolution produces new structures and organizational patterns. We may speak of these structures as things in their own right; they may serve as irreducible components of our best explanations; and they may seem to function as causal agents. But the real or ultimate causal work is done at a lower level, presumably that of microphysics. Our inability to recognize in these emerging patterns new manifestations of the same fundamental processes is due primarily to our ignorance and should not be taken as a guide to ontology. (2006: 21)

Alexander, contradicting Mill and Broad, dismissed autonomous higher-level causality, and even though he emphasized the novelty of emergent qualities, he thought of emergence as an

epistemological rather than an ontological category. According to the criticism, however, the "weak" emergence of Alexander cannot account for the causal properties of the whole constituted by the parts (Clayton 2006: 25-26); such properties are indispensible in order for the whole to be considered as an autonomous entity.

Although the degree of connection between different orders was a point of dispute for Emergentists, what is certainly defeated by all emergentist accounts is causal determinism. The unpredictability of a system is considered a central property of emergence: "Emergent properties are systemic features of *complex systems* which could not be predicted […] from the standpoint of a pre-emergent stage, despite a thorough knowledge of the features of, and laws governing, their parts" (O'Connor and Wong 2009; emphasis mine). Moreover, despite their differences, all theorists of the British movement shared a common view of nature as "layered". The world for them is arranged in levels "of increasing organizational complexity of matter" (*ibid*). As organisms move to higher levels of complexity, reducibility to lower levels becomes impossible. Thus, emergence counteracts reductionism. Preoccupied with wholes that are not reducible to their parts, the concept of emergence found fertile ground in systems theory, which revived the interest in emergence (*ibid*). Since Ludwig von Bertalanffy's *General Systems Theory* (GST), systems theory "was put forward as a counter to what was perceived as excessive reductionism dominating scientific discourse during much of the 20th century" (EMIL 2007).

Different degrees of emergence, from strong (absolute irreducibility and completely 'new' properties) to weak (practical but not analytical irreducibility), have been identified in the philosophy of emergence, and causality plays a crucial role in the difference between the two—strong and weak—versions.[95] Contemporary accounts of emergence in the context of complex systems study seem to favor a 'weaker', or "intermediate", version of it.[96] The weak emergent approach is materialistic, according to systems scholar Mark Bedau, as it steps on the existence of microdynamics between material components of the microlevel that result in the emergence of operationally autonomous macrophenomena (1997: 395). The recent complex systems theories favor these weaker versions of emergence, as the material substrate of autonomous units and their interrelations are considered to be involved in an active way in emergent self-organization.

Complex systems are nonlinear and irreducible, in the sense that "a single high level property may be realized by more than one set of micro-states which have no lawful relationship between them" (EMIL 2007). However, as a case of weak emergence, the irreducibility of a complex system does not preclude (nonlinear) deducibility from the initial conditions, although these conditions are impossible to be clearly defined in open (and not isolated) systems. Therefore the methods that are usually employed in the study of emergence

in complex systems are simulation or statistical modeling (see Byrne 1998: 62). Thus, the study of emergent causality demands a synthetic rather than an analytical approach, because synthetic approaches 'follow' the bottom-up constitution of systems. According to Bedau, "the macrostate's behavior" could be derived "from the system's microdynamic" only by means of simulation (1997: 378), or "modeling all the interactions of the realizing microstates leading up to it from its initial conditions" (O'Connor and Wong 2009).[97]

Nonlinear causality and emergence from cybernetics to complex systems theory

Nonlinear causality has been associated with cybernetic feedback. In cybernetics, self-organization was initially associated with negative feedback and homeostasis, but with the second wave of cybernetics (the one that Hayles calls phase of reflexivity, as mentioned in Chapter 3, and lasting from 1960 to 1980), a shift in the thinking of self-organization took place, and the "deviation-amplifying" positive feedback processes gradually gained ground. Philosopher Manuel de Landa credits Norman Wiener, the 'father' of cybernetics, with a nonlinear idea of causality, which broke with a tradition of "linear (nonreciprocal) causality" (De Landa 2009: 67). Magoroh Maruyama's study of positive and negative feedback, as well as Maturana's and Varela's "autocatalytic loops", further established a nonlinear conception of causality. This conception countered the dominant conception of causality in Western thought, according to which "similar conditions produce similar effects" (Maruyama 1963: 4).

The nonlinear approach to causality questions the value of negative feedback and stability, and highlights the role of non-equilibrium in self-organization. According to Bertuglia and Vaio, this shift to positive feedback and non-equilibrium also marked the 'overtaking' of cybernetics by complexity theory:

> Cybernetics, in reality, can be considered a science that anticipated complexity in the investigation of dynamical systems, precisely because it was the first to make use of concepts such as isolated or closed systems that regulate themselves by means of internal feedback cycles. […] complexity has overtaken cybernetics because it makes use of new concepts such as, in particular, self-organization and emergence; in other words, because it considers systems that evolve towards new states that do not have negative feedback cycles. (2005: 264)

When causality is conceived in nonlinear systems, it becomes the emergent product of the aggregation and "synergy" of a system's elements.[98] Causal synergy and emergence is what differentiates nonlinear from linear systems.[99] As complexity scientist Grégoire Nicolis explains,

> In a linear system the ultimate effect of the combined action of two different causes is merely the superposition of the effects of each cause taken individually. But in a nonlinear system adding two elementary actions to one another can induce dramatic new effects reflecting the onset of cooperativity between the constituent elements. (1995: 1)

The combination of different agents in a complex system has causal influence that again exceeds that of the sum of the combined causes taken individually. Nonlinearity in the mathematical sense of the word refers exactly to this disproportionality between starting conditions and results. 'Weaker' versions of emergence suggest that there is a connection between properties at the micro-level and those at the macro-level, but this connection is nonlinear. This, however, does not preclude some kind of causality to exist between the different levels. Later in this chapter, I will connect this synergetic and weak conception of causality with the one that operates between the different diegetic and narrational levels of complex films.

In complex systems accounts, emergence is not acausal. It rather pertains to a different, "pattern-based" as it has been called, form of causality. Jeffrey Goldstein (1996: 178), following Ben Goertzel's mathematical model of "pattern dynamics",[100] rejects the view according to which complex chaotic processes are acausal—he refers specifically to the philosopher of science Stephen Kellert who expresses such as view in his book *In the Wake of Chaos*. Suggesting "a revision of causal explanation in the light of emergence" (163), instead of an abolishment of causality altogether, Goldstein distinguishes pattern-based causality (revolving around questions such as "how do the new patterns shown in emergent phenomena relate to previous patterns in the system?") from the traditional, "substantialist" causality (implied by questions such as "what is it made of?" and "how much of it is there") (165). Emergence is caused when already existing systemic patterns become more complex, creating "a plurality of folds" (169). Thus, either through "Boolean networks" (as Stuart Kauffman claims) or the "Baker transformation" (as does Ilya Prigogine), "emergent phenomena have [within the system] complex precursors" (170), and they do not just 'pop up' out of the initial simplicity of a system. By characterizing a property as emergent, one does not imply that there is no way to explain or understand its occurrence. Causation is still an issue in emergence, but it does not happen horizontally, following the model of bowling balls hitting each other, as a classical mechanical approach to causality would imply, but vertically, between different scales and levels. Emergent events are 'wholes', the causal effects of which "cannot be correctly represented in terms of the separate causal effects of [the] constituents" (O'Connor and Wong 2009).

It is complexity itself that demands some notion of causality to be preserved for emergent phenomena. There is a causal link, Goldstein argues, between increased complexity and emergence (1996: 174).[101] The insistence upon the coupling of emergence with causality is a stance that rejects both 'hard' scientific reductionism and the absolute detachment of the emergent phenomenon from its functional substrates (as a "strong emergence" thesis would have it). Rather, it is compatible with the combination of the "local" with the "global" level (175). As Prigogine, together with philosopher Isabelle Stengers, mention in their book *The End of Certainty*, there is "a narrow path between two conceptions that both lead to alienation: a world ruled by deterministic laws, which leaves no place for novelty, and a world ruled by a dice-playing God, where everything is absurd, *acausal*, and incomprehensible" (1997: 188; emphasis mine).

Emergence seems to require a bridge between the microlevel and the macrolevel, which allows a view over the patterns developed by aggregates of separate micro-elements. As O'Connor and Wong note: "Of central importance is to recognize that the relationship of micro-level structures and macro-level emergent properties is dynamic and causal, not static and formal (in a quasi-logical sense)" (2005).

Emergent causality and narrative

Complex films, as many different theorists, from Bordwell to Cameron, have pointed out, stand somehow between determinism and contingency: on the one hand, they negate linear and deterministic causality; on the other hand, they demonstrate the causal effects of contingency. Before going on, certain clarifications need to be made: narrative causality is not the mechanical and 'linear' (in the strict sense) causality of Newtonian laws. It is not physical or mathematical but anthropomorphic, less precise and less tight than causality at the level of natural elements, to which complexity in sciences refers. In one sense, causality in most narratives and narrative films is already 'loose'. According to organizational theorists Haridimos Tsoukas and Mary Jo Hatch, narrative can be a model for all modes of thinking in which causality does not operate through strict and reductive logical sequences, but "through associations that are not causal in the logico-scientific sense" (2001: 1006). As they point out, narrative causality operates through patterns of "co-occurrence, spatial proximity, formal similarity or metaphor" (*ibid*), features that "may help us to understand […] the non-linearity, indeterminacy, unpredictability, and emergence of complex systems" (1007).

However, this conception of narrative is already made from a post-narrative perspective, and particularly from one of complex systems theory that re-interprets narrative as a complex system. In film theory, narrative has been clearly differentiated from other non-narrative formal systems that are possible in film, such as the rhetorical, categorical,

associational and abstract forms that Bordwell and Thompson distinguish (2008). Certain among these non-narrative forms, and especially the associational one, which creates patterns of images related according to motifs, have similar characteristics with those that Tsoukas and Hatch mention. But this form, prominent in "experimental" films, according to Bordwell and Thompson (2008: 356), is downplayed in narrative films. The definition of narrative in film theory but also in narratology, as shown in Chapter 5, sticks to the notion of causality as an organizing principle that arranges events in causal-logical sequences. This narrative organizing principle, no matter how less deterministic from the one presupposed by natural Newtonian laws, is still diegetically but also formally challenged by the "chance encounters" and the "intersections of strangers" proliferating in complex films. Causality in complex films is not just loose but nonlinear, and organizes the film in an emergent way. Nonlinearity does not only characterize the interactions of characters/actors at the representational level, and the way their actions lead to "storms of consequences", as it happens in *Burn After Reading*, but also the 'causal logic' of the narration and the one involved in the cognitive construction of the diegesis by the viewer.

Narrative conceived as a cognitive system of interpretation retrospectively determines the sequence of events so that they can be placed in a causal-logical chain.[102] But a complex systemic approach requires a careful examination of how any form of cognitive organization emerges from the level of the *syuzhet*, and how does the text and its construction complicate and even withhold this top-down establishment of causality towards which narrative tends. The complex systems framework favors approaches that take as their starting point the level of the *syuzhet* and put in a secondary position that of the *fabula*.

In the field of organizational studies, narrative causality has been contested as inadequate to capture the complexity of organization. From this perspective, David Boje contests causality (in the form of cause and effect chains) as anthropomorphic, and suggests a complex systems approach that he calls antenarrative. The Latin prefix 'ante' indicates his pointing at the stage *before* narrative. Drawing from Nietzsche's disavowal of "universalized causality", Boje suggest that the establishment of logical causal connections between events often underestimates the role of contingency upon human action and neglects "all kinds of affects" that are at play between two thoughts.[103] Thus, Boje contends,

> The narrative acts of retrospective causality destroy the antenarrative experience of multi-causality and non-linear causality, and situations where the only cause is a fictive one. […] Physics is moving beyond mechanistic interpretation to more non-linear models, and organization studies follows along. We in organization studies are giving more sensitivity to initial conditions, self-organization and emergent dynamics in chaos and complexity theory. In the postmodern world of storytelling

> organizations linear causality is a convenient fiction, an over-simplified narrative of complex antenarrative dynamics in which non-linearity (and that too is a fiction) reigns. Organization studies are beginning to wrestle with an antenarrative understanding of causality. As Langley says, "Researchers are also increasingly recognizing that the presence of multilayered and changing contexts, multidirectional causalities, and feedback loops often disturb steady progression toward "equilibrium" (1999: 692). (Boje 2001: 93-94)[104]

In film studies too, an antenarrative approach would be one focusing on and starting from the complexity of filmic texts, without presupposing the whole that narrative stands for, one that—even retrospectively and in an emergent way—imposes a causal-logical structure to the multiplicity of affects involved in the process of communication between a recipient and a film.

Since complex films can be conceived as complex systems, as I argue in this dissertation, they may still form organizations, communicate and produce meaning without putting their elements into any kind of steady linear arrangement. As long as meaning making processes in complex films are concerned, and provided that these are emergent processes, both textually and cognitively in the different systems of the film and the viewer, I would opt for a weak rather than a strong conception of their emergence. This implies that the textual form of the *syuzhet* matters in the emergence of meaning. Adopting a weak emergent approach to the causality involved in complex films would mean to direct our attention to the actual causal role that the multiple constitution and the non-linear ordering of the *syuzhet* and the relations between its elements have in the emergence of a whole. In the opposite case, a strong emergent approach that would consider this whole to be completely independent of its units, an 'order' or schema that emerges in all cases of reading and viewing being independent of the specific characteristics of each text, would tell us nothing, to paraphrase Jaegwon Kim (2006: 200), about the processes through which the cognitive and filmic organization is constituted in complex films.

Structure and emergence in networks, from social theory to narrative

In the previous chapter I argued that the number of characters in complex films, and mostly the number and entanglement of their interactions, disrupts the classical schemata of causality in narrative cinema. Here I will explain in more detail how the number of components of a system (which can also be a filmic system) and their relations plays a fundamental role in the system's complexity.

Complex systems scientist Stuart Kauffman has shown that complexity is built in multi-agent and densely interconnected systems (see 1993: 243). These two factors, the number of agents and the density of connections, are interdependent, as the big number of individual units increases the possible interactions and therefore, the complexity of the resulting system.[105] As the anthropologist and neuroscientist Terrence Deacon notes,

> With every iterated interaction, relational properties are multiplied with respect to each other, so an increase in numbers of elements and chances for interactions increases the relative importance of interaction parameters and related contextual variables. (2006: 121-122)

Films with network narratives follow this logic; by increasing the number of agents they also increase the relational range and the complexity of the network that these relations form.

In graph theory, networks are graphic representations used in order to depict relations between a number of units. It has become a common practice in many different disciplines to use network theory and graphs to analyze complex data, but the word 'complex' here equals to 'connected'—with a varying degree of entanglement, which sometimes makes network graphs incomprehensible. Network is the graphic form of interconnectivity, as it provides a means to elaborate systems with many interconnected parts. There are variations of complexity in networks, depending on the degree of their distribution, the clustering coefficient (the degree to which nodes cluster with each other) and other dimensions.

However, the network structure, pictured as the complicated connections between a multiplicity of nodes, is not a sufficient condition for complexity to develop, in the sense that complex systems theory gives to the term. Complexity theory does not stop at the representation of systems as networks but also seeks to explore how these networks are dynamic, and how they form themselves through reciprocal connections between the 'nodes' that compose them. Complexity theory, as Russ Marion points out, "envisions adaptive systems (species, animals, plants, viruses, etc.) as neural-like interactive networks of agents and seeks to understand the dynamics of network behaviors" (2006: 274). Emergence happens only through such dynamic interrelations. As Marion notes, "events emerge from complex interactive dynamics involving neural-like networks of adaptive agents. That is, emergent events are products of unpredictable combinations and recombinations among interdependent agents" (259).[106] The "networked, interdependent interactions" are characteristic of every complex system. Interactions between a large number of agents/elements create increasing complexity, but these interactions between the nodes need to be dynamical and reciprocal, in order for them to transform into an emergent organization. That is why network theory is not synonymous with systems theory, or, why not all networks can be characterized as complex

systems.[107] Network theory has historically been a structure-oriented approach, but complex network theory as a strand of systems theory moves beyond structures, focusing on the emergent dynamics that the interrelations between units release. A similar complex approach to network films would also be differentiated from structuralist approaches, emphasizing the emergent dynamics at the 'meso-level' of unit interactions.

An example of the 'structuralism' inherent in network theory may be given through Emirbayer's and Goodwin's discussion of the particular use of network analysis in sociology. They distinguish between different versions of 'structuralism' (prioritization of structures) therein: the "structuralist deterministic" model prioritizes the potency of structures over that of the individual actors, while that of "structuralist instrumentalism" prioritizes actors. The former tends to work with "static 'map configurations' or relational 'snapshots' of network patterns" (Emirbayer and Goodwin 1994: 1426), ending up in reifying relations and considering them overarching structures that determine the units; the latter takes the theory of "homo economicus" as its starting point, attributing to individual nodes a rationalistic and utility-maximizing logic, which, even in a bottom-up direction, still pre-determines the conduct of the network's actors/nodes.[108] Such a double 'structuration' became apparent through the analysis of causality in narrative in the previous chapter; the 'characterological' construction of causality based on—anthropomorphic—motives, such as those of the actors in *Burn After Reading*—reduces (and structures) the actors to instantiations of cultural and social ideals (the vein, obsessed with external appearance woman, the man who wants to feel important…), while a structuralist—in the narratological sense—analysis of causality again succumbs the dynamics of the plot's form to overarching symmetries that preexist them. A change of theoretical context though would allow, as it did in sociology, for different properties of networks to come to the fore. Complex systems theory in sociology aims at revealing the dynamical nature of social networks and highlighting the complex links and interrelationships between the micro-level of individuals and the network macro-level. Between these two levels, a multiplicity of nested systems with their own interrelationships weaves the patterns of social complexity (Byrne 1998: 10).

In sociology too, as in cybernetics, systems theory initially adopted a very different approach from the one that the 'new', complex systems theory, takes. Even today, systems theory in sociology often refers back to the work of Talcott Parsons, who, influenced by cybernetics, developed a model of society—known as "functionalism"—as a hierarchy of nested systems always beginning from—and tending towards—equilibrium. This model can be seen as analogous to the equilibrium model of narrative in Todorov's narratology, since Todorov defined equilibrium in a similar way, as "the existence of a stable but not static relation between the members of a society" (Kafalenos 2006: 4);[109] and this conception of

equilibrium, similar to that of Parsons, influenced his adaptation of structural equilibrium into his narrative theory. However, as Kenneth Bailey argues, the emphasis that functionalism placed on equilibrium gradually became incompatible with the development of the (new) systems theory in sociology. The latter saw entropy (the amount of 'redundant' energy that increases during a thermodynamic process) as well as nonequilibrium, as the bases for both biological and social organization. Along with the development of complex systems theory, social systems theory differentiated from functionalism, departing from the "age of equilibrium" to enter the "age of entropy" (Bailey 1994: 5).[110] A combination of autopoietic self-organization with complexity emphasizes evolutionary dynamics that can be observed from the macrolevel: "macro-level social order is a complex product of micro-level intentionality and the wider non-linear operation of the system" (*ibid*).[111] The nonlinear process of self-organization is described by Peter Coveney as "the spontaneous emergence of non-equilibrium structural reorganizations on a macroscopic level, due to the collective interactions between a large number of (usually simple) microscopic objects" (2003: 1058).

As long as social theory kept oscillating between reduction and reification of social phenomena, the occurrence of macro phenomena as the ones of broader social changes and transitions could not be properly grasped. Particularly, not enough attention had been paid to the complex interactions that make such phenomena emerge; this is a gap that (complex) systems theory tries to fill. The recent rise of complex and emergent approaches to the study of social and other kinds of networks as complex systems provides new methods to bridge the micro-macro divide.

Narrative has been used as a counter-example of emergent organization in this respect. Patrick Doreian, in a similar line of thinking with that of Boje cited above, comments on how sociologists have tried to describe the formation of networks using narrative. However, the limitations of this approach, which emphasizes causality, soon became manifest, since networks cannot be represented in causal-temporal chains of events.

> A narrative as a straightforward description of a sequence of events has considerable appeal. Most network analysts who study empirical phenomena use narrative. In part, it is window dressing, but it has more than surface interest. The risk is that the narrative becomes yet another just-so story with events following each other in time under convenient stage management. Once it is recognized that the only real connection between the described events is merely temporal, the causal enterprise is shaken. If a different event could follow a given event—which happens—the coupling of the events in a narrative is loosened. And, if there could be other outcomes between two hitherto sequential events that appear in a set of narratives, the tight coupling between events is lost again. […] The most hard-

> nosed assessment is that truly establishing causality in network analysis is impossible—just as it is in the realm of statistical causality. […] There needs to be a very tight coupling of theory, mechanisms, and credible empirical information before we can delineate the actual operation of causes in the empirical world before we can tell causal stories. (Doreian 2001: 110-111)

Here the term narrative refers to the particular type of presentation of research findings in the field of social networks, a description that the writer objects. Even though in a very different context from that of film and literary theory, the function of narrative here is reminiscent of the way narrative as a cognitive process is conceived by narrative theorists, namely as a mode of data organization that constructs a causal story—and 'meaning'—even from the most baffled and 'anti-narrative' texts, in which causality is loosened or even broken. Our ability to construct causal stories, in the sense of tight coupling of events, is challenged by contemporary complex films, and together a need is created to account for the organizing potential lying in a different, pattern-based causality. The multiplicity of agents that complex network films involve is a means through which linear causality is undermined and other types of organization become prominent. Thus, complex films seem to call for an analogous development in film and narrative theory with the one in sociology or organizational theory. The use of emergent and bottom-up approaches to textual organization is needed when the lines of causality as traditionally conceived in narrative theory are broken, and when structuralist models of symmetry do not prove helpful. These approaches help us see how diegetic wholes emerge when narrative, along with both Aristotelian and structuralist conceptions of causality, is placed in the background.

Dynamics of transformation and narrative

As already broached, an important aspect that differentiates the complex systemic approach from older cybernetic approaches to systems has to do with a passage from the "age of equilibrium" to that of entropy, according to Bailey's expression. This passage also has to do with a shift to an "ensemble" perspective. Moreover, it is a factor that differentiates complex systemic approaches to causality from narrative approaches.

Nonequilibrium and change are the basic features of self-organizing systems, according to Prigogine, the founder of nonequilibrium thermodynamics, which is considered one of the strands of complex systems theory.[112] Unlike Newtonian dynamics, nonequilibrium thermodynamics prioritizes evolution and entropy instead of time-reversibility or equilibrium. The behavior of systems cannot be described in terms of trajectories of individuals (in the case of thermodynamics, these 'individuals' are molecules) but in terms of populations or

"ensembles",[113] whose movement in time (or succession of states they are found in) is probabilistic and irreversible, leading to new, emerging properties.

In stable systems, there is no difference between the level of the individual trajectories and the one of ensembles; the ensemble can be easily understood as an additive collection of the individual trajectories. However, in unstable dynamical systems, as Prigogine and Stengers mention, "the equivalence between the individual point of view and the statistical point of view […] is broken" (1997: 83), and asymmetry is established between individuals and aggregates. What according to a Newtonian—and linear—trajectory description would appear as divergence, according to a statistical—"ensemble" and complex—description appears as "resonance", "a coupling of events loosely analogous to the coupling of sounds by resonance" (*ibid*: 42).

It is of course not easy to draw an analogy between the behavior of particles in physics and that of agents in narratives. However, based on the principle of isomorphism that characterizes complex systems theory as a transdisciplinary field, we could argue for a similar 'ensemble approach' in film analysis. If agents/actors in a narrative are conceived as individuals in single trajectories from one event to the next, then an ensemble approach introduces an asymmetry that changes this picture. The single trajectory perspective makes events appear as the causes and effects of other events, triggered most of the time by human (or anthropomorphic) action. Complex/network films, as already mentioned, are structured around events that are disconnected from their causes, contingent and divergent from the causal-logical sequence. Thus, the single trajectory perspective, or that of 'lines of causality' is not particularly helpful, as it tends to reduce the contemporary complex and 'ensemble' films to the classical Aristotelian definition of complex plot, as discussed in Chapter 5. The ensemble perspective, however, makes events appear as emergent products of resonance between multiple threads of action, initiated by different each time initial conditions. Single trajectories of actions and events can only make sense as long as they are placed in an ensemble, resonating with other parallel (actual in the case of multi-character films or virtual in the case of forking-path films) trajectories. Complex films can organize themselves by means of resonance, and produce complex textual organizations, and the viewer may follow them by similar cognitive resonances. Because of the multiplicity reflected in their plots, these films favor non-anthropomorphic—'ensemble', in the statistical sense—descriptions, that highlight the patterns of agency emerging from the micro-level of unit interactions.

Are these statistical ensemble descriptions narrative? One of the basic problems with narrative is that it holds onto the notion of the observer. This anthropomorphic observer always judges events as probable or improbable and establishes causality between them. From the perspective of complex systems, causality can be conceived as "the outcome of a

stochastic, *probabilistic* process" (Prigogine and Stengers 1997: 37; emphasis mine), the same process that drives self-organization. However, this statistical sense of probability is different from the one based on a human observer. Prigogine and Stengers explain how probabilities are now built into the fundamental laws of the universe, which behaves probabilistically independent of an observer (see 1997: 5, 54, 131). The complex interactions that take place before even narrative becomes possible, require, in the context of complex films, *syuzhet*-focused approaches that do not take narrative as their starting or ending point, approaches that would thus focus before or beyond narrative. As I already argued, diegetic agent-based models may be one of the ways to take into account interacting agents that produce the diegetic world by means of 'ensemble' (here not only in the statistical sense but also according to the use of the word in film theory, as in 'ensemble films' that contain aggregation of agents) rather than of individual trajectories.

Irreversible processes create an order that is different from the one of systems in equilibrium. This ordering through nonequilibrium is produced by the self-organization of a system in a "state of *increased complexity*" (Prigogine and Stengers 1997: 64; emphasis in the original). Here what Todorov called narrative transformation becomes relevant. It is not causality in the traditional sense of the word, but transformation that generates the causality of a system. Transformation may be observed when the state of a system is compared in two different points in time, but the dynamics of transformation cannot be captured in retrospective observation. Narrative as a form of representation cannot address the process of transformation itself. It is the gradual development of the *syuzhet* that reveals the dynamics resulting in transformation. Transformation is an emergent process determined by contingency and impossible to attribute to a single cause or causal line.

In his article "Narrative and Emergent Behavior", literary theorist Porter Abbott argues that emergent action does not follow anthropomorphic laws of causal continuity and direct consequences of actions, laws that are indispensible in narrative (237). Emergence happens in-between the micro and the macro level, and narrative according to the same writer cannot approach this area (234). Thus, Abbott concludes that emergent behavior, with its nonlinear causality, is "by definition unnarratable" (233). The multiplicity of agents is for him one of the most characteristic obstacles that narrative faces when it comes to complex behavior:

> […] the principal reason for the incompatibility of emergent behavior with narrative understanding is its massive distribution of causal agents—a complexity of causation so acute that it disallows any perceptible chain of causation that could serve as a narrative thread. Narrative can and does play a limited role in our understanding of emergent behavior but does so only at the micro level of individual agents […] and the macro level of the whole […]. (Abbott 2008: 227)

Even though the distribution of agents in the complex films of contemporary cinema is not massive, as it is, for example, at the level of particles in physics, or of biological organisms such as ants, it still confronts the narrative understanding with an alternative and less anthropomorphic way of understanding. As researchers or viewers we can see emergent processes retrospectively, and then narrate them, from a macro viewpoint. However, at the time when these processes take place, they are unnarratable, and the only way to follow them is to participate in the textual and cognitive *resonances* that transgress narrative *reasoning*. With an emancipation of the *syuzhet* from the *fabula*, narrative can give way to other forms of organization, which, according to my opinion, in the films of the complex narrative tendency withhold and ultimately overtake narrative.

PART 3: PATTERN

In the last part of this dissertation I will focus more closely on the borderline cases of complex films, taking as an example the Italian film *Gomorrah* (*Gomorra*, Matteo Garrone, 2008). The issue of place, space and spatialization of the diegesis will be discussed in detail in the individual case of *Gomorrah* in Chapter 7 and further in the general context of complex films in Chapter 8. I will also suggest that modes of discourse other than narration, and particularly description, become pertinent in these films. The last chapter (Chapter 9), with an eye to the other parts of the dissertation, will question through the concept of 'pattern' whether complex films with their spatialized form of presentation involve emergent types of textual and cognitive organization.

7. Systems in crisis: *Gomorrah* as a case of complex cinema

If *Gomorrah* were a static picture, it would offer a *tableau vivant* of a world in crisis. It is the "System"[114]—as the locals call Camorra, the criminal organization controlling the area of Campania in Italy—that in the film seems to be employing all the means it has available for its homeostatic preservation. However, in this chapter I am not going to talk about this System in detail, because the film itself does not. Instead, it focuses on five different and partial perspectives upon a diegetic world that unfolds through them and declares itself, at the very end, as part of our real world—where Camorra is expanding. Thus *Gomorrah* creates its own 'system' that emerges from the bottom-up through the separate trajectories of six characters, drawn in a fragmented and disorienting space.

One world, five perspectives

Don Ciro (Gianfelice Imparato) is a 'submarine' in Camorra's slang, that is, a bagman entitled to dole out a monthly financial benefit to the families of imprisoned members of Camorra. In his everyday trajectory from door to door, Don Ciro draws the invisible links of the clan's network, crossing the 'streets' of the housing complex where both he and his 'clients' live their lives—streets which are actually narrow passageways between the different compartments and levels of the building. Although Don Ciro does not seem perfectly comfortable in the role he has in this peculiar community, his identity and self-respect are dependent upon the acceptance of the group, which he—or the money he circulates—holds together. However, as the clan that prevails in the area—and for which Don Ciro works—loses its power, obviously facing economic problems, one by one the people he used to consider

"brothers" become enemies. At first, he successfully manages to negate the unrest that starts taking place around him, ignoring its inauspicious signs. A "bunch of morons warring against us" can do no harm: these are the words he uses to calm down the worrying woman (Maria) who confesses to him that her son joined the secessionists. However, as more and more people around him die, Don Ciro gets to realize that he has to consider his own role in this "war". It becomes clear that he cannot continue to be a money-carrier for the leading clan; but neither can he do the same work for the opposite camp. The secessionists need the money for more drastic action; to "shoot and kill" in order to establish their power. So Don Ciro has no choice, if he wants to survive, other than to 'buy' his life, following the new power constellations, and to remain obedient and 'invisible'.

Things are not better for those who now enter the established clan, as they watch the strings that used to hold it together breaking. Toto (Salvatore Abruzzese), a kid who lives in the same housing complex with Don Ciro, and who has just joined the drug trafficking that thrives in the area, is also forced to participate in the local civil war and betray his 'brothers'. He has to play the 'hook' in order to help his superiors kill Maria, the mother of his close friend who became a secessionist.[115] Toto cannot have his own say in this decision, and in his case, his age makes things worse; he is just a kid among older Camorristi and he has to obey their orders. His desire to grow up and become a 'man' made him eager to join the local clan, but the real experience of participating in its business has unglamorous aspects. In any case, it seems doubtful as to whether Toto would have been able to avoid his involvement in Camorra's drug trafficking; he grew up being part of the System that reigns in his neighborhood, and his recruitment comes as a natural consequence of this inclusion.

Marco (Marco Macor) and Ciro (Ciro Petrone) are two other teenagers, who despise the 'bosses' of their area and have Tony Montana from De Palma's *Scarface* as their idol. Armed with influences from gangster movies and a good deal of naiveté, they think that they can set up their own drug traffic business, and keep all the money and the thrill for themselves. Driven by their ambition, they turn down an offer to join the prevailing clan, or to ally with other secessionists. But with this they seem to commit against Camorra a 'sin' bigger than all others, for which they will have to pay a high price.

Roberto (Carmine Paternoster) has recently found a job in the waste disposal business—Camorra's most profitable niche. Coming from a low-class family and lacking the necessary connections to find a decent job in Naples, he was sent to work for a noble businessman (Franco, played by Toni Servillo), next to whom he discovers that words such as "redevelopment" and "humanitarian aid" might have a dubious meaning. Roberto finds difficulties in adapting to the amoral way of conduct of his boss, and, in a burst of disgust, he quits his post, even though he knows that his future career prospects outside Camorra are thin.

Finally, Pasquale (Salvatore Cantalupo) is a tailor who has been working his whole life for a local sewing industry, which is apparently also controlled by the System. The small local industries have to compete with each other and abuse their workers' rights so as to achieve good deals with the 'haute couture' traders. After one of these unfavourable—in terms of unpaid overtime—deals, Pasquale is approached by a Chinese businessman, who tries to set up his own dressmaking industry. The man offers Pasquale money in order to teach his craft to the immigrant workers. Pasquale hesitates to accept the offer, but eventually he gets convinced, to see the Chinese apprentices treating him with a respect that he had never experienced next to his boss. However, when those who control the area find out that Pasquale dared to sell his craftsmanship to the rivals, he hardly manages to survive the clan's vengeance. His longing for self-respect that motivated his steps outside the familiar network and his attempt for individuation are simply not permitted in Camorra, as he ends up realizing in the most humiliating way. The only 'independent' option left to him is to abandon his art and become a truck driver.

The above synopsis reveals that it is almost impossible to narrate what is happening in *Gomorrah*, and to construct one (or five) coherent stories out of it, without using the word 'Camorra', which corresponds to this criminal (but also economical and social) organization that the film is ultimately 'about'. It is this Neapolitan criminal organization that Roberto Saviano, the writer of the book *Gomorrah*, on which the film is based, decided to confront with his book. However, the film never uses the name Camorra (or 'System'), and never helps us draw a larger picture to interpret the events we witness as viewers, except after its ending. This, one could argue, is the very process of narrative as a cognitive and also textual mode of organization. With narrative it is always at the end that we can construct the larger picture and put every piece in its place. However, in this chapter I will show how *Gomorrah*, through the complex space it weaves, subjects narrative to another organizing principle, which follows a different logic.

Obscure space

The plot of *Gomorrah* does not follow the homonymous book but rather 'improvises' on some disconnected passages of it. Some characters, who are only mentioned in passing in the book, create the diegetic world of *Gomorrah* through the ensemble of their singular perspectives. Both literary and filmic versions of *Gomorrah* are narrated "from the inside" as Garrone explains: "I thought that Saviano wrote the book from 'the inside,' thereby changing how the Mafia was characterized in literature. I also tried to write from 'the inside,' choosing certain characters from the book without glamorizing them" (2009). *Gomorrah* shares the

realistic style of its literary source, although it develops a different way to express it. In the film, the first person narration of Saviano's prose is entirely substituted by the partial viewpoints of the characters, whose individual trajectories are followed separately (with many bifurcations) from the beginning until the end, through the interwoven episodes.

As I broached in the beginning of this chapter, Camorra stays an obscure 'world' throughout the whole film. As Saviano points out in the book, "Camorra" is a term that only external observers use to describe the activity of many different clans in the broader area of Naples—a name the reference of which is often followed by ironic smiles from the locals. Placing us indeed in the position of an 'insider', the words "Camorra" or "System" are never heard during the film. In the book *Gomorrah*, however, the 'naming' is done already on the cover, with the help of the subtitle. The subtitle of the English version (Picador publisher, 2008) is quite explicit: "A personal journey into the violent international empire of Naples' organized crime system". The original Italian subtitle is even more explicit: "Viaggio nell'impero economico e nel sogno di dominio della Camorra" ("a journey in the economic empire and the dream for prevalence of Camorra"). But it is not only the subtitle of the book that differentiates it from the film. Saviano's book is to a large extent a journalistic exposition of the activities of the System, being very explicit in actual details and containing names of people and places. Saviano gives a special importance to 'naming', associating it with facing. Regarding the power of naming, he draws inspiration from Pasolini, and for that of 'facing', from the Biblical story of Gomorrah, according to which Lot's wife, turning back to face the cities of Sodom and Gomorrah, turned into a pillar of salt.[116] The film *Gomorrah*, however, suspends naming. During *Gomorrah*, as Radovic says, "the clues are everywhere but the big picture is a frayed patchwork of brutally rough sketches" (2009: 7). It seems as if the elements of *Gomorrah* resist, through their spatial disparity, their own integration into the System. However, the pattern that their stories weave connects them into a complex system before their final inclusion into 'the' System of Camorra.

Apart from avoiding the reference to Camorra, it is also extremely difficult to 'speak' about *Gomorrah* without referring to real-life places and events. Toto and Don Ciro represent different viewpoints on the same place at the same time: Scampia at the time of the 'war' (feud) of Camorra. This war actually took place in 2004 when the clan of Di Lauro, controlling the area in the North of Naples (especially the suburb of Scampia), was fought by secessionists who demanded their operational autonomy.[117] However, *Gomorrah* does not make reference to the actual names of people and places involved in this war.

Apart from the stories of Don Ciro and Toto that take place in the same locale and obviously unfold in parallel, the viewer cannot be certain whether the stories of the other characters are chronologically contemporaneous or not, despite their parallel placement in

terms of editing. The temporal registers of *Gomorrah*'s stories remain undefined, and the same happens with their spatial coordinates. The diegetic space, as a cognitive composition of the 'places' a film contains—according to André Gardies' distinction between place and space in cinema (1993)—in *Gomorrah* becomes difficult for the viewer to construct.

The film was shot on locations where Camorra's business actually takes place. The places of shooting vary depending on which one of the five 'perspectives' the film focuses on each time. The epicentre of all stories is the area North of Naples. Other scenes of the film (like those featuring Ciro and Marco) were shot in the area of Casal di Principe, a municipality situated 25 km northwest of Naples, which is the hometown of some notorious clans of Camorra (but also of the author of the book *Gomorrah* Saviano). The first scene featuring Ciro and Marco was shot inside the "villa di Walterino"—the nickname of the former local 'boss' Walter Schianoni—in Casal di Principe. This villa, as Saviano mentions in the book, was modelled on the villa of Tony Montana in *Scarface*. The countryside close to Marcianise in the province of Caserta seems to be the—diegetic—basis for Roberto and Franco's business, as Franco names Marcianise as the place where the disposal cargo heads to. The (actual) housing project Le Vele (The Sails) in Scampia was the setting of the scenes featuring Toto and Don Ciro (Nadeau 2008). This is how the housing project is described by a journalist of *The Washington Post*: "One notorious set of apartment buildings featured pyramidal wings connected by ramps and staircases crisscrossing within a concrete canyon" (Williams 2005). Philosopher and film theorist Mario Pezzela characterizes Le Vele in *Gomorrah* as a "shapeless no-place" (2009: 249). Interestingly, the area's mayor uses the same characterization for Le Vele in the documentary *Napoli Napoli Napoli* (Abel Ferrara 2009).

"No place" is a characterization that could also be used to refer to the diegetic space of *Gomorrah*. The term "non-place" has been coined by the anthropologist Marc Augé to describe the places where the subjects of supermodernity are found in transit, like, for instance, supermarkets or airports (1995). Such non-places do not retain any particular characteristics of the actual geographical place where they are situated. Moreover, crowds in them are subjected to the strictest surveillance. Although in the case of Le Vele, the term "no-place" has not been used with the theoretical loading that Augé gives to non-places, but probably in the sense of a place that is unbearable to live in, and which will never turn into a real 'home' for its inhabitants, the comparison is nonetheless tempting, as it offers a chance to think further on the film's connection to place and space, and the way that it adjusts, along with other 'complex' films, to spectators of supermodernity who are found in continuous transit.

Although *Gomorrah* was shot on location, it very rarely provides the names of places. On the contrary, the film makes its best to render the places obscure and even unrecognizable.

This almost uncannily echoes with the biblical parable of Sodom and Gomorrah, about which Umberto Curi observes:

> Ever since antiquity, in the histories of Flavius Josephus and Strabo, and right down to the most recent archaeological research, no one has been able to locate precisely where the two cities were. This means that, yes, they certainly did exist, but it is not possible to say where in the known world they were actually located, before being turned to smoke. The uncertainty of their geographical location is of itself a significant fact. […] Perhaps, in an intermediate area somewhere near the Dead Sea. Perhaps, much closer to us than we suspect. Perhaps, without fully realizing it, we ourselves are inhabitants of those cities. (Curi 2009: 245-246)

This spatial uncertainty that the contemporary *Gomorrah*, along with its Biblical counterpart, put emphatically forth, allows it to be at once local and universal, present and eternal, locatable and 'ubiquitous'.[118]

Some local audiences have actually criticized the film for marking the few places mentioned in it with Camorra's blueprint (Tricomi 2008). However, the place is never directly indicated in *Gomorrah*.[119] Locations are named in passing when action obviously takes place elsewhere: Marcianise is mentioned in Venice, where Franco negotiates with a local entrepreneur, while Naples is mentioned in some airport where Roberto's father thanks Franco for taking his son into his business. Finally, Ciro and Marco mention Casal di Principe, which is not a seaside place, while hanging out at some port. The place in *Gomorrah* remains indefinite while the space of the film is being composed and differentially experienced through the spatial shifts performed, in terms of cinematography, editing and narrative.

Realism and disorientation

Gomorrah has been mainly discussed, both by film critics and scholars, with regard to realism. On the one hand, as an Italian film, it is considered to be continuing the tradition of Italian neorealism. On the other hand, it draws on the realism of modernist movements. Certainly *Gomorrah* combines some of the key characteristics of realism as a cinematic style that André Bazin praised, finding its exemplary manifestation in the movement of Italian neorealism (see Wagstaff 2007): it is shot on location, uses in part non-professional actors,[120] some of whom are indeed members of Camorra (as revealed in the press), makes use of deep space, and has an episodic structure. The work of the director of *Gomorrah*, Matteo Garrone,[121] has been placed in this neorealist tradition (diCarmine 2010), and his method has been described as an active search for authenticity, a "studied spontaneity" (Radovic 2009: 9),

which he achieves by proceeding to an almost ethnographical field research on the places he shoots.

At the same time, *Gomorrah* contradicts neorealism's avoidance of artifice in the camera work and editing as well as its refusal to let the camera be expressive in itself, features that Gianetti points out as characteristic of this cinematic movement (2005: 476).[122] *Gomorrah*'s cinematography and editing are strongly present and determine the structure of its plot. From this aspect, some influence from the realism of modernist *avant-garde* movements can be noted. In any case, it is not so much the realism of neorealism that is being challenged in *Gomorrah*, and perhaps even less the one of modernist cinema. What is rather being challenged is the representational realism associated with central perspective, which cinema inherited from Renaissance's pictorial modes (Elsaesser 2009d: 6). In my view, *Gomorrah's* connection to realism needs to be placed in the context of disorientation and 'located unlocatedness' that the film creates. In the following part of this chapter, I will first describe *Gomorrah*'s aesthetics of disorientation, which arguably demand a discontinuous and dynamic engagement of the viewer with the filmic environment. Then, I will show how this complex spatial experience is enhanced by the equally disorienting and disordered narration. Thus, I will not so much connect *Gomorrah* to the tradition of realist and modernist movements, but to the tendency of complex films.

In *Gomorrah*, a disorienting effect is achieved by the camerawork and editing of the film. Through shifts between different types of vision and motion, *Gomorrah* creates a discontinuous experience of the places depicted. I use the term 'shift' here in order to highlight the element of transfer, which implies at once a spatial relation and an abrupt (dis)connection. *Gomorrah*'s cinematography is characterized by shifts in terms of the camera's placement and movement, the focus of the lens, the point of view and the lighting.

To enter the local microcosm formed by Camorra's activities, *Gomorrah* employs handheld camera, which became, from Italian neorealism to the new waves and *cinéma vérité*, the landmark of a cinematographic style associated with realism. In *Gomorrah* the handheld camera becomes a tool of disorientation as it moves through the labyrinthine passageways that comprise the literally inescapable Neapolitan slum (including Le Vele and the buildings around it), where life is unthinkable beyond Camorra. However, at certain moments *Gomorrah* abruptly breaks with the handheld camera style, distancing its view and effectuating extreme shifts of scale. Thus, on the one hand, the handheld, amateur-like shooting adapts to the quick, spasmodic pace of Don Ciro or follows Marco's and Ciro's play with guns, capturing bodies in close-up. On the other hand, this style is often abandoned, and the shooting shifts to long-distance or bird's eye view shots, which are again to be contrasted with close-ups on faces. In a characteristic scene, a long shot tilts down following the edge of a tall quarry to end up on a

human figure barely distinguishable in front of the giant cliff. Then a cut suddenly transfers us to a close-up of Roberto's face. The use of wide and bird's eye view shots, also characteristic in more 'professional', Hollywood-style shooting, do not soothe the viewer's overall feeling of spatial (sensorimotor) disorientation; on the contrary, they enhance it through their juxtaposition with their opposites, such as the handheld shooting and the extreme close ups. Spatial disorientation is also effectuated at moments when we cannot even distinguish the presence of the characters in the frame. This happens, for instance, at the scene where we first encounter Roberto and his boss during their quest for the ideal disposal location, when they test the capacity of an abandoned gas station. At first, we can only hear their voices as we watch a shot of a landscape that seems empty; only when we manage to adjust our focus (and without the camera helping us to do so by zooming) we can distinguish the presence of figures in the background.

The technique of deep focus praised by Bazin is not prevailing in Garrone's film. Rather, "additional layers of tension" are created through the imposition of limitations on the depth of field, as Rajko Radovic observes. This way "the surroundings are reduced to an out of focus mix of stark light and threatening sounds" (Radovic 2009: 9). This blurring of the surroundings happens in many scenes of the film, especially those involving the dilemmas and frustration that the characters encounter (for example, in the scene where Pasquale is approached by the Chinese businessman, or the one in which Toto runs away from the scene of Maria's murder). A critic finds in *Gomorrah* a "contrast between deep and shallow focus", with the latter communicating "a sense of a constant, ungraspable, unknowable violence which envelops and blurs clear and distinctive perception" (Duckworth 2008). The shifts between deep and shallow focus in *Gomorrah* are as abrupt as those between small and large scale.

The "ungraspable violence" that can be felt in *Gomorrah* is created by a sense of omnipresent surveillance by the System, which is not an abstract controlling structure but the social network itself, the way people relate to each other at a local level. In the space that this network creates, every single person involved in Camorra, from the pathetic drug dealers to the powerful bosses, becomes a node in a web of surveillance. This web is not created by bags and wires (nor by high-tech GPS devices) but by interpersonal relations bound to the place, reproducing the global model of distributed control at a local level. The camera enters this web and becomes an eye that could belong to any node of this network. And the labyrinthine spatial arrangement of the housing project that functions as one of the film's key-settings intensifies the feeling of entrapment.

In a scene of *Gomorrah*, Don Ciro, having just survived an assault by two secessionists, walks in a dark passageway of the housing complex and looks around him with a frightened expression. In what seems to be an eyeline match, the camera glances at the dark

corridors of the lower and the opposite level of the building. The shot seems subjective, infiltrated as it is with Don Ciro's fear. Without cut, the glance of the camera, which, as we are lead to assume, represents the glance of the character, moves to capture Don Ciro himself, who has now walked past that spot and can be seen from the back. His gaze towards the other side of the building is thus included into the gaze of someone (or just the camera) following him. Such *mise-en-abyme* embedding of gazes is among the techniques employed in order to achieve the effect of 'lookers being looked at', as well as to create constant shifts in the reality registers of *Gomorrah*, undermining forms of identification and perception based on central and omniscient perspective.

Finally, contrasts between light and darkness across different episodes and locations (the scenes of Roberto mostly take place in open air, where the disposal quarries are bathed in plain sunlight, while in the scenes of Don Ciro, shadows are prevalent) as well as within episodes (for instance in the open and closed spaces of the housing complex) set up a game of visibility and invisibility, surveillance and hiding. Particularly interesting in terms of lighting is the opening scene before the credits, where the blue fluorescent light washing the bodies of the foppish Camorristi creates a surreal and disorienting effect (see Ratner 2009).

The multiplication of perspectives and the effect of disorientation that *Gomorrah* achieves make the viewing experience a struggle to oneself within the filmic environment. *Gomorrah* could thus be considered in the context of a "new" kind of realism that becomes manifest in films of contemporary world cinema, where paradoxical forms of perspective proliferate. In new realism, Elsaesser notes, "The world […] manifests itself as having special properties. Relations of size are different, distance and proximity take on equally dangerous features, temporal registers no longer line up, terrible or miraculous things can happen" (2009d: 9). In such disorienting conditions of cinematic reception, the world is not posited in a frame and offered in its entirety to an immobile spectator, but calls for a multiple and almost haptic way to relate with it. Radovic observes that in *Gomorrah*, the field of vision is limited to action itself (2009: 7). I would add that in this film, vision comes after action, as it is through a painstaking process of adjustment and orientation that we finally get to see (visually perceive) what happens.

Complex narration in *Gomorrah*

Through its shifts in scale, focus and point of view, *Gomorrah* prompts the spectator to relate to the film through movement, displacement and re-orientation. But *Gomorrah* does not produce dislocation only through editing and cinematography, but also through the *syuzhet*, creating shifts from one story and character to the other. Thus, I would argue that *Gomorrah*

reproduces at the level of storytelling the spatial complexity of its visual composition. The latter can thus be placed not only in the context of the well-established (modernist, neorealist, and, in terms of theme, gangster film) cinematic traditions, but also in that of the contemporary 'complex narrative' tendency, which produces its own characteristic visual modes.

The script of *Gomorrah*, loosely based on the homonymous book of Saviano (first published in 2006 in Italy), is a product of collaboration between Garrone, Saviano and six more scriptwriters. To some extent reflecting the multiple processes followed in the writing of its script, *Gomorrah* has a multiple-thread plot structure, which the director has characterized as episodic,[123] a term often used to indicate anthology-like or multi-plot films. Although Garrone refers to Roberto Rossellini's *Paisà* (Paisan, 1946) as a source of inspiration (Garrone 2008), the episodes of *Gomorrah* are extremely interwoven in comparison to Rossellini's film. Thus, *Gomorrah* also stands close, in my view, to more recent 'complex narrative' films, such as *Short Cuts* and *Pulp Fiction*. As Radovic observes, "The narrative of *Gomorrah*, understandably, doesn't follow a single or a straight line. It twists, turns and ducks for cover just like the gangsters do" (2009: 7).

If we separate the main plot threads of *Gomorrah* we get five different 'stories' or episodes. Providing each character with a number we have the following distribution: 1 for Don Ciro, 2 for Toto, 3 for Marco and Ciro (who act together), 4 for Roberto and 5 for Pasquale. The fragments of episodes appear in the film in the following order:

1-2-1-2-3-4-5-2-1-2-4-3-5-1-2-4-1-3-2-1-5-2-1-4-5-3

From this depiction one may see that the parallel stories of Don Ciro and Toto form something like the 'axis' of the film. The film (re)turns seven times to each of the episodes of Don Ciro and Toto and four times to each other episode. Most of the time, the scenes of Don Ciro and Toto are placed next to each other, because of the common place (of the housing complex) they share, although the two characters never meet. In terms of duration devoted to each character's episode, the distribution is more even. The elliptical narration and the discontinuous editing effectuate an internal fragmentation of the episodes, so that the viewer has to get accustomed to an interrupted rhythm as s/he watches one and the same sequence of action. For instance, we see Don Ciro in his house putting on a bullet-proof jacket, then walking past Maria at the passageway in front of her house, trying to ignore her cries (because any interaction between them could prove dangerous for both, after the 'betrayal' of Maria's son) and then at the parking lot on the lower level of the housing complex, hiding behind a cement column. With this by cuts interrupted 'start-and-pause' rhythm each episode or

episodic piece (i.e. sequence belonging to one of the separate plot-threads) is multiplied in its own space and duration.

With its multiplicity of stories, *Gomorrah* displays characteristics of the forms of narration that have been more broadly called "post-classical": "A preliminary look into the narrative construction of these […] films shows a clear preference for multiple protagonists who participate in different stories that diverge and converge at different paces within the same film" (Thanouli 2008: 10). But how does *Gomorrah* 'fit into' the different typologies of 'narrative complexity'?

In the typology of modular narratives that Cameron suggests, he distinguishes a group of "episodic" narrative films, "organized as an abstract series or narrative anthology". Here he classifies multiple-protagonist films such as Alejandro González Inárritu's *21 Grams* and *Babel* (Cameron 2008: 6, 13-15). *Gomorrah*, with its episodic structure, shares common elements with such modular narratives but would probably not be considered one by Cameron, who gives priority to the temporal dimension of modularity. For example, we do not find moments in *Gomorrah* when the temporal sequence that the spectator has so far been following is subverted.[124] However, even though *Gomorrah* does not lead to such reordering of the temporal sequence, its episodes are far from following an uninterrupted temporal progression. They are fragmented into pieces that interpenetrate with those of other episodes. Moreover, they are composed by shots and scenes that are loosely—and often abruptly, due to the discontinuous editing—connected to each other.

Gomorrah's narrative structure is also reminiscent of Bordwell's network narratives, because of the different, autonomous characters and stories it contains. But it is not the interactions between characters that form *Gomorrah*'s network, because almost all encounters and interactions are suspended in this film. Thus, while the films that Bordwell discusses as network narratives contain stories that crisscross each other sooner or later, in *Gomorrah* such crisscrossing is, if not completely absent, then significantly downplayed. Don Ciro and Toto walk in the same streets but never meet. The link that indirectly connects them is primarily the setting—the housing complex where they both live—and the character of Maria, who is both a friend of Don Ciro and the mother of Toto's best friend. Like Toto and Don Ciro, the other main characters of *Gomorrah* never interact with each other and the five stories stay autonomous throughout the film (despite being interwoven through editing), in a way that differentiates *Gomorrah* from 'network narratives' such as *Short Cuts* or *Magnolia*.

Every narrative is composed by separate elements, which are sooner or later connected in a causal-logical sequence. Narrative elements (such as characters) are not introduced to recipients unless they have a role to play in the succession of the story and its ultimate coherence towards the end. Thus, even in narratives that resist unification, such as 'network

narratives', the strangers will at some point intersect, if not through tight causality then through chance, and their contribution to the larger picture will become clear. However, in some exceptional cases, like *Gomorrah*, these intersections are suspended: the separate stories composing the narrative network do not ever come together; there is no final unification in *Gomorrah*, neither an overall dramatic culmination, as Michael Covino observes (2009: 75). Our (hypothetical) wish for a miraculous or chance-driven intervention that would unite the separate destinies of *Gomorrah*'s characters and produce a sense of humane affection (like it happens in *Magnolia*, *Babel* and *Crash*) is left unfulfilled. In this respect, *Gomorrah* resembles the films that Bordwell characterizes as "borderline cases" of network narratives. For example, referring to the film *Slacker* (R. Linklater, 1991) he observes: "The story action doesn't bring the characters face-to-face, and the narration doesn't bare unexpected connections among them" (Bordwell 2007: 215). This phrase could also be used to describe the diegetic interactions in *Gomorrah*.

Like the films that have been characterized as "forking-path" (Bordwell) or "possible world" (Perlmutter) films, it can be argued that *Gomorrah* also creates a (subtle) play between potentiality and actuality, highlighting the presence of the former in every choice taken. At the same time it suggests that perhaps it is not contingency but necessity that drives the characters' choices. The potentials are not endless in the sense that all choices are pragmatic. They are driven by the instinct for survival and adaptation to changing and uncertain conditions. Thus, choices in *Gomorrah* depend on the specific 'starting conditions' given to each character: when Don Ciro realizes that the inhabitants of Scampia have never been 'brothers', as he liked to fantasize, he is forced to take sides in order to keep himself safe from harm, even if this means to betray his former peers. Toto decides to join Giovanni's clan but then he is forced to cooperate in the murder of Maria. Marco and Ciro decide to work as autonomous gangsters but they are also forced to stay out of the way. Pasquale has been exploited by his boss for his whole life, but when he decides to work autonomously, he is forced to either stay subordinated or lose his job. Roberto is placed in the waste disposal business out of financial necessity, but when he realizes that his ethics is not as 'flexible' as that of his boss, he is obliged to quit his job.

A series of events compose every episode, each of which culminates with the protagonist suffering the consequences of their choices. However, *Gomorrah* does not ever give up on demonstrating a type of agency that could be characterized as "performative" (see Elsaesser 2006: 216). There is a tension created between choices for integration into the System and choices for autonomy. But this tension does not suggest a binary opposition between the two: all stories are placed in a continuum between integration and autonomy, with each character occupying a different position in this continuum, and testing the degrees of

freedom left to him. Individual heroes with their different motives, either sense of community (Don Ciro), need for a job (Roberto), need for self-respect (Pasquale), ambition (Ciro and Marco), or just 'feel for the game' (Toto), they all try their chances to survive in or outside the System. This game between integration and autonomy can be distinguished in all of the stories developed—in terms of plot structure—in parallel, creating a pattern that connects the characters despite their physical and communicative disconnection.

As Saviano writes in the book *Gomorrah*, referring to the people who live in the broader area of Naples: "For the people who haven't been born here, this place doesn't mean anything. All guilty, all forgiven" (Saviano 2007; translation mine). It is the belonging to the place that makes them guilty, and this same belonging that gives them redemption, because they are unable to break free from it.[125] But the film *Gomorrah* persists in exploring this (in)ability, catching the dynamism of the System in a perpetual present—spatially multiplied through the presents of a number of protagonists—where possibilities, however limited, are still up for grabs. The film thus emphasizes not only the kind of 'resisting' agency similar to the one that the character of Roberto shows (considered by various critics as the fictional counterpart of Saviano in the film), but perhaps, even more, the agency that is exerted through every choice and action taken inside the System.[126]

Thus, although the network of Camorra seems to extend far beyond the miserable suburbs of Naples and its dwellers, swallowing every possibility for change inside its muddy harbor and toxic land, *Gomorrah* insists in posing dilemmas and testing its characters, keeping them in a continuous movement; not only an external and physical but also an internal and psychological movement. At the same time, the viewers are placed in a similar position with the characters, continuously prompted to shift to different contemporaneous trajectories and to adapt to an ever-changing cinematic and diegetic environment, in which the separate stories of *Gomorrah* develop.

Multiplicity and transmediality in *Gomorrah*

Storytelling as such is not rejected in *Gomorrah*, the way it is in fundamentally non-narrative films (such as actuality films, experimental and art films, certain documentaries etc.—filmic categories in which, of course, none of the "complex films" discussed in this thesis can be included). But what we can see in *Gomorrah* and other films of the complex narrative tendency is how narrative itself becomes in them the object of a non-narrative composition, which will be discussed in more detail in the next chapter. Moreover, *Gomorrah* is not open-ended in the same way that other complex films are, such as the oft-cited *Run Lola Run*, *Fight Club* and *Donnie Darko*, or the previously discussed *The Final Cut* and *Burn After Reading*. All separate stories in *Gomorrah* are given some kind of closure, depending on how

each character finally negotiates his inclusion into the System. Although *Gomorrah* contains stories that have a certain beginning, middle and end, the film's purpose is not, in my view, solely to *narrate* these stories but rather to *describe* a world in which all episodes unfold. Even though *Gomorrah* 'closes' narratively five times (as all five episodes have some kind of resolution), it still remains open-ended, as I am now going to explain.

Following *Gomorrah*, the viewer is called to compose its world by inhabiting it before knowing it. In the same way that action and movement precede vision, facing, naming, and ultimately knowing—in the sense of rational grasping of an object—are suspended. After the end of the film, though, right before the end credits, *Gomorrah* seems to be endorsing—along with the book—naming. Thus, it 'names' Camorra and gives us in titles information about its international action in the actual world, from the drug trafficking to the waste disposal; the concluding title refers to Camorra's investment in the reconstruction of the Twin Towers, after the 9/11 attack. Especially in the case that the viewer lacks previous information, but also because of the film's avoidance of sharing it—which affects all viewers no matter how informed they are—these 'facts' displayed at the very end have a shocking impact. It is of course a common practice in films 'based on a true story' to communicate to the viewers real facts before the end titles. However, I think that this kind of naming has a special importance in the case of *Gomorrah*, because of its contrast with the rest of the film.[127]

From one aspect, the information shared at the end allows us a somewhat more coherent grip on the stories retrospectively. It does not however allow us to construct a narrative that will include all the separate stories. We cannot reinterpret the film as the 'story of Camorra'; actually, we still know nothing about Camorra. The information at the end creates a post-filmic link that connects the film's storyworld to the world out there, or now-here, in which we find ourselves equally disoriented, at the very moment that we think that we may finally achieve some orientation in the diegetic universe. *Gomorrah* gives us a clue to understand what has been going on in the plot so far; at the same time it points at what remains incomprehensible, that is, the workings of our actual world and the role of Camorra in it. The suffocating feeling created in the film is thus extended beyond the diegesis. Thus, what appears as 'knowledge' at the very end of *Gomorrah*, when the film's network is given the name of Camorra, is rather the introduction of uncertainty at a higher level. Without naming the System it refers to, *Gomorrah* manages to posit the viewer inside its inescapable world; the ending of the film makes our actual world appear contained in the one of Camorra, instead of the other way around. The recipient is thus addressed by the film not only as spectator or narratee but also as a node in a larger network, that of global economy and the systems it supports and is supported by, such as the criminal system of Camorra.[128]

Through its multi-thread and multi-character plot structure, *Gomorrah* partakes in a larger group of world cinema and also big studio productions (such as those discussed in Part 2) that share the "network narrative" format.[129] Apart from partaking in this narrative tendency, however, the film of *Gomorrah* creates its own networks that supersede the film itself as an individual unit and expand into the broader media sphere. As already argued, with its closing the film on the one hand gives the viewer a clue to fill some gaps of understanding, on the other hand though, it leaves him/her baffled about the workings of Camorra. This reveals the 'transmedia' character of the film: it is by reading Saviano's book and collecting information from other sources that a clearer picture of Camorra, as well as of what has been going on in the film, can be gained.

Transmediality has been pointed out as a feature of the literary movement into which the book of *Gomorrah* has been classified, according to Wu Ming 1 (2008).[130] This movement, named New Italian Epic,[131] has a manifest tendency to create "transmedial communities", stimulated by the participatory spirit of the novels themselves as well as that of their writers. So there have been various "spin-offs" from New Italian Epics: films and TV series, video-games and board games, internet communities, theatrical plays, music etc. (Wu Ming 1 2008).[132]

Based on a 'New Italian Epic' (Saviano's book), the film *Gomorrah* also shows a collective spirit, on the level both of screenwriting (by its six scriptwriters) and textual composition (with its multiple characters and episodes). It also shares with New Italian Epics the feature of transmediality, adding more nodes to the network that the preexisting book started. Henry Jenkins, one of the most oft-cited theorists of transmediality, considers this feature to be related to the multiplicity of characters within the diegesis, as well as to the open-endedness of the latter. As he points out,

> transmedia stories are based not on individual characters or specific plots but rather *complex* fictional worlds which can sustain multiple interrelated characters and their stories. This process of world-building encourages an encyclopedic impulse in both readers and writers. We are drawn to master what can be known about a world which always expands beyond our grasp. This is a very different pleasure than we associate with the closure found in most classically constructed narratives, where we expect to leave the theatre knowing everything that is required to make sense of a particular story. (Jenkins 2007; emphasis mine)

Gomorrah is of course in many respects different from the film examples that Jenkins brings about.[133] But it also has significant similarities with the complex transmedia objects he describes. The process of 'world building' is encouraged in *Gomorrah* both in the relationship

between spectator and screen—due to the obscure and disorienting style and editing—and also in the relationship between the spectator and the world beyond the film, a world which is no less obscure and complex.

The film *Gomorrah*—as well as my approach of it—ends with an 'observation' of its diegetic world in relation to our world,[134] not to create a coherent narrative, but to produce further complexity, as it now embeds an environment of other systems, and creates more connections between them. Thus *Gomorrah* forms a complex system both internally and diegetically, and externally, being itself a node in economical, social and cultural networks of which the film partakes and creates. The complex diegetic space of the film reproduces in a fractal way the complex space of its environment, to which viewers and social subjects have to adapt by developing new skills of orientation. In the following chapter, I will argue that the mode of organization under which *Gomorrah* subsumes narrative can be compared with that of description in literary theory. This mode has implications upon the viewer's construction of the diegetic space as an emergent world.

8. Complex space: Narrating and describing

The 'obscure' space of *Gomorrah* and the disorienting effect that the film creates gives me the chance to have a closer look at the relationship between space and narrative in film, and to question whether the construction of space in contemporary 'complex narrative' films differs from that of classical narratives. In narratology space is conceived as a layered composition of the places where the story unfolds. However, I find that in contemporary complex narratives, space more generally adheres to a discontinuous arrangement of filmic elements (that are not always locales), which needs to be addressed in its heterogeneity. In these films we find different and often contradicting geographical and ontological levels that coexist in the filmic text (for example, in *Run Lola Run*), while the films themselves are visually and narrationally discontinuous (like *Gomorrah*). Taking this heterogeneity into account, I will suggest that description, in its particular relation to space, is an equally or even more appropriate term than narration when we approach the mode of discourse of complex films.[135] Description places emphasis on the individuality of each unit out of which an image, a scene or a story is composed. It also allows for a discontinuous approach to the world of the text, foregrounding the text's spatial character as it creates relations between entities simultaneously present. Thus, I will look into the history of the term in literary theory and narratology, where description, although intrinsic to narrative, has always been considered antithetical to the latter's temporally progressive mode of presentation. A change of hierarchy between description and narrative in complex films has implications for the modes of reception as well, and creates doubt as to whether the types of sense-making associated with narrative are appropriate when it comes to the spatialized forms of reception that these films put forth.

The 'complex of space' in cinema and narrative

Space is an important axis around which the viewer composes the story world of a film. It is an abstract relationship between entities, a spatial arrangement, that the term 'space' primarily implies. Yet there can be a connection between this space and the topographic space (the locations) in which the action unfolds. Film theorist André Gardies distinguishes between four types of spaces in cinema: the cinematographic space (with its iconic, verbal and musical modes of signification), the diegetic space, the narrative space, in which space becomes an "actant" and serves the development of the story (as the order of the places presented might be telling their own story), and the space of the spectator. His conception of diegetic space is of particular interest here, since it connects the notion of space with that of place, but also differentiates between the two. Gardies sees the place as actualizing space, and making it

visible to the viewer. Thus, the places, i.e. all location marks appearing in the text of the film, are *paroles*—in Saussurian terms—through which the spatial system of the film (as *langue*) is composed. The place adheres to perception while the space to cognition (Gardies 1993: 90).

In narrative theory but also in film theory,[136] we mostly find conceptions of space tied to its 'topographical' aspects, in the sense of locations that are cognitively composed in larger arrangements. Summarizing the existing literary-narratological literature on space, Ryan distinguishes between five different levels of space in narratives, which can also be considered to be spatial 'layers', because they are not exclusive but coexistent, each one extending and completing the other. Thus, according to Ryan's classification, there are the "spatial frames", defined as "the immediate surroundings of actual events, the various locations shown by the narrative discourse or by the image". Then, there is the "setting", which corresponds to "the general socio-historico-geographical environment in which the action takes place". The category/layer of "story space" refers to "the space relevant to the plot, as mapped by the actions and thoughts of the characters". The story space contains the immediate surroundings of the action plus other mentioned locations. The "narrative (or story) world" is "the story space completed by the reader's imagination on the basis of cultural knowledge and real world experience". The narrative world corresponds to the construction of a coherent space in which the various places of the narrative form a unity in the mind of the reader/viewer. Lastly, the layer of the "narrative universe" is superimposed on other layers and refers to "the world (in the spatio-temporal sense of the term) presented as actual by the text, plus all the counterfactual worlds constructed by the characters as beliefs, wishes, fears, speculations, hypothetical thinking, dreams, and fantasies" (Ryan 2011: paragraphs 9-13). As it becomes apparent especially in this last category, the spatial-topographical aspects of narratives are interwoven with ontological aspects, concerning different levels of reality being involved.

In *Gomorrah*, the category of 'setting' remains rather obscure, as discussed in the previous chapter. But also the 'spatial frames' in the same film acquire strange dimensions and properties because of the multiple 'shifts' effectuated by the camera work and editing. The 'story space' becomes difficult to compose through the vague and often out-of-context mentioning of places. The levels of narrative world and narrative universe are rather abstract and depend on the cognitive processing of each viewer. This processing is arguably affected by the way each of the other spatial levels is constituted.

A general remark that Ryan makes is that the narratological conception and categorization of space is done retrospectively, "from a static perspective as the final products of interpretation". However, in the process of reading, the different layers of space mentioned above are gradually constituted. When a text provides information about places it could be said that it describes. Narrative is coupled with purposeful action, as discussed in Chapter 5,

and topographical space (or place) is not just *described* as in tourist guides but *narrated*, only as long as it serves the unfolding of events. As Ryan notes, "We may call the dynamic presentation of spatial information the *textualization of space* [she refers to Gabriel Zoran's "textual level" of space—see Zoran 1984]. This textualization becomes a *narrativization* when space is not described for its own sake, as it would be in a tourist guide, but becomes the setting of an action that develops in time" (Ryan 2011: par.14). However, sometimes whole narrative segments and the action unfolding through them can be described, as we will see later in this chapter, but this implies a step away from the topographical conception of space (which I find more precisely defined as 'place') and into the cognitive one.

A process of cognitive layering involved in the construction of space by the viewer—and not necessarily bound to location markers—has informed film narratology. In *Narration in the Fiction Film* Bordwell divides the scenographic space (the space we perceive in the end product of a film)[137] in three—both on-screen and off-screen—subspaces: the "shot space", the "editing space", and the "sonic space" (1985: 113). The shot space includes the texture, "atmospheric perspective" (manipulated by the lens focus, the depth of field and various effects that can be used), light of objects or bodies on the screen, movement of figures, etc. (114). All these features are the ways in which a shot can provide us with spatial cues. Different cues are provided by the editing, which demands from the viewer to construct an "intershot space" (117), aided by his or her short and long-term memory, as well as cognitive schemata and (narrative) cause and effect sequences that act as links between the separate shots and scenes.[138] Thus, the construction of the space of a series of shots (the editing space), involves a process of cognitive and temporal layering, between the spatial cues that we have already collected and the ones that follow. Sonic space is created by the composition of voice and sound, and its texture depends on the distance of the microphone from the action, the stereo or mono recording as well as many other technical choices.

Space in narratives has been called "a complex", in the sense that it consists of multiple interwoven layers.[139] The borders between these spatial layers, which can retrospectively fall into theoretical categories such as the ones mentioned by Ryan, are not always brought to the attention of the reader/viewer by the text. In classical Hollywood films, narrative—even in its dynamical and temporal unfolding and not in retrospect—achieves a seamless interlocking of these layers into a multi-layered whole, 'a complex' that subsumes its elements. While a viewer follows the film, their attention is not attracted to the borders between different spatial layers but is aided to construct the complex of space in a way that does not disturb their immersion to the story. This is exactly the service of continuity editing, which was the bedrock of classical Hollywood cinema.

The textual organization of space in films (in terms of shot space, editing space and sonic space, to use Bordwell's categories) and the way it is composed through cinematography and editing arguably affects the cognitive organization of the story world on behalf of the viewer. In certain complex narrative films, the continuity of editing space is often disrupted, but also the shot space becomes discontinuous, as pastiche techniques are used in the shot composition. Thus, as I am going to argue, complex films, the visual space of which has been characterized as "discontinuous and opaque" (Thanouli 2006: 193), foreground a heterogeneous distribution and spatial composition of elements, rather than a smooth layering of levels. This heterogeneity becomes manifest in their *syuzhet* as well.

The juxtaposition of heterogeneous spatial elements is a characteristic of complex films. Let us take as an example Tom Tykwer's *Run Lola Run* (*Lola Rennt* 1998), one of the most oft-cited films of the 1990s complex narrative tendency. Tykwer's film is characterized by spatio-temporal discontinuity in a number of different analytical levels (scene, plot, story). In *Run Lola Run*, the diegetic space or "story space", in Ryan's terms, is constructed out of bits and pieces of contemporary Berlin. Thus the film creates, according to Everett, "a hyperrealist architecture" of the city, which functions in a way reminiscent of Foucault's city as heterotopia: "juxtaposing in a single real space, several sites that are in themselves incompatible" (Everett 2005: 167).[140] *Run Lola Run* performs such juxtaposition not only in terms of story space but also in terms of editing space. Visually, the film uses abrupt inserts of animation and Polaroid stills. There is also a fast transition between different and discontinuous points of view, aided by dizzying vertical and horizontal zooms and swirling camera movements (in this respect, Everett comments on the shift from the aerial to the street view in the beginning of *Run Lola Run*). In terms of sound, *Run Lola Run* is a collage of loud techno beat, street sounds, silence and dialogue. Regarding the plot-level, the film contains three alternative forks of Lola's destiny. Michael Wedel points at the film's "discontinuity" in sonic rhythm, in editing, in space, and in plot structure. As to the latter, he refers to the way the plot does not progress in a linear temporal sequence but returns to specific starting points to unfold again differently, providing Lola, the protagonist, with three alternative destinies (2009: 144-145). The alternative destinies of Lola coexist not only in the *syuzhet* but also in the *fabula*, as the film does not allow us to reject any of them as false as we construct the story.[141] I would argue that the temporal discontinuity of the plot in *Run Lola Run*, with its iterative rhythm, is also a spatial discontinuity at the cognitive level of the film's composition. This happens as long as the spectator has to place the three alternatives of the plot as coexistent albeit heterogeneous pieces in the same cognitive space.

In *Gomorrah*, discontinuity is found between episodes but also between and within shots. The scene composition in this film is elliptical, omitting large segments of action in a

sequence (for example at the scene where Don Ciro goes out of his house, described in the previous chapter) and also discontinuous, in terms of an abrupt transition from shot to shot. Moreover, the *mise-en-scene* contains multiple layers, both in depth, when action unfolds simultaneously in the foreground and the background—with the two sometimes disconnected through shifts in the lens focus—and on the vertical axis, especially in the scenes shot at the housing complex, in which different action going on at its different levels is placed in the same frame.

Narrationally, discontinuity is produced in *Gomorrah* due to the 'uncontaminated mixing' of the different episodes. The shift from one character/episode to the other is at the same time a shift in point of view and location. This creates a spatialized cognitive experience of the diegesis, which also has to do with the film's withholding of what Zoran calls global information:

> When the global information appears at an early stage in the description, the concrete items join in later on, and the picture takes on a unified character. On the other hand, it is possible to delay the appearance of this global information, in which case the individual items appear—at least for a while—without clear-cut context, and one receives the impression of a non-unified, disconnected space. (1984: 322)

In the case of *Gomorrah*, the "global information" is the information provided at the end, about how the individual stories connect to each other, through the common denominator of Camorra. The fact that the film withholds this information (in an extreme degree, unlike what happens in other 'network' films) places its separate episodes in a disconnected space.

Narrative construction, as a spatio-temporal composition that needs to impose some degree of (causal-logical) coherence to the story it forms, is arguably affected by the discontinuity observed in films of the complex narrative tendency. I find that three aspects of textual narrative structure, as indicated by Zoran (1984: 320), are challenged to a greater or lesser degree by these films: "the essential selectivity", "the temporal continuum" and the "point of view". Thus, complex films do not select (only one character/plot thread/version upon an event). It often happens that there is no one finite version of events. The development of the films is done in a non-sequential way and by following an iterative rhythm, revisiting persons and events. Moreover, films of the complex narrative tendency often include a multiplicity of viewpoints (for example, as multi-character films do), which sometimes contradict each other, as happens in *Pulp Fiction*, for instance. The multiplicity of viewpoints offers the viewer different and constantly shifting entry points into the diegesis. This keeps the viewer in a state of dis/re-location, as s/he is never comfortably following one single story or

story version, but has to cognitively juxtapose and 'juggle' alternatives. This has an overall spatializing effect upon narrative.

It is not just the illumination of the spatial layering that every text or every artwork creates but the way that films such as *Run Lola Run* 'produce' space (to borrow Lefebvre's expression) out of their diegetic pieces, that is of interest here. While we may *a priori* separate different spatial layers and look at how they are embedded/connected to each other, or how individual texts activate them, as most narratological theories of space do, it is a different strategy that we need to follow in order to account for the spatialized experience that many complex films evoke, through the tensed juxtaposition of diegetic units—which are highlighted in their heterogeneity (audiovisually and narrationally) rather than unified. Moreover, it is not by following the temporal unfolding of the story that viewers gradually construct the complex of space, as it happens in every story. Rather, a spatialized perception of the different units becomes the primary contact zone between the film and the viewer, and this infiltrates the viewer's following of the story. As Thanouli observes, "in films like *Fight Club*, *Lola Rennt*, *Trainspotting* or *Magnolia* we are asked to follow the action in a fragmented manner and to construct the story out of excessively intermittent diegetic pieces" (2006: 191). The piecemeal articulation of stories spatializes narrative, and in a sense adjusts it to the larger complex filmic space, of which narrative becomes one constitutive element.

Everett names many of the films belonging in the complex narrative tendency "fractal". Fractal films express, according to Everett, "a new narrative and spatial awareness based on multiplicity, simultaneity and fragmentation" (2005: 160). Multiplicity, simultaneity and fragmentation, are the properties that in literary theory have been associated with description as opposed to narrative. Description arguably occupies a central position in contemporary complex films, and prioritizes the spatial juxtaposition of textual elements over that of the causal-temporal transformation of narrative.

Literary theories of description

There has been a tension drawn in both literary and film theoretical tradition between narrative and description. The traditional view of narrative considers it to be distinct from description, because description does not conform to the overall causal and temporal succession of the story; it rather suspends time and action. This tension between description and narrative is not new. It comes from the period of Enlightenment and its system of ideas and was systematically treated by Lessing in his distinction between temporal and spatial arts, and particularly literature and painting. Joseph Frank notes that Lessing used to advise poets to give emphasis on action and not on description, because action fits the linear temporality of

language (Frank 1978: 282). In the same vein, descriptive passages in narratives have been considered extra-narrative prostheses rather than organic parts of narrative.

In narratology as well as in literary criticism, description is traditionally considered spatial, while narration is thought of as temporal. However, since space and time cannot be separated, both forms express their own temporality. The temporality of narrative differs from the one of description, Todorov contends, as the former pertains to a successive unfolding of time—through the changes and 'events' that are the constitutive units of narratives—while the latter to the "perpetual present" of poetry (1971: 39, 42). As he notes elsewhere, logical order (causality) and temporal order (succession) are the fundamental processes of fiction, whereas poetry has a distinct, spatial order, based on repetition (Todorov 1977: 136).[142]

There have been periods in literary and art history where the descriptive and spatial aspects of texts come to the fore. Description has been a central characteristic of baroque art and poetry, as Genette notes (1976: 6). The development of narrative, however, gave prevalence to another, "symbolic and explicatory" function of description, for example in the novels of Balzac, where the description of things is expressive of the inner life of the characters, and thus in a way serves the development of the narrative. Like Todorov, Genette finds that description has a spatial character that brings it closer to poetry, while "narration puts emphasis on the temporal and dramatic aspects of narrative" (1976: 7). Description lingers on objects, turning actions into "scenes" (7). The word scene is relevant to the arrangement of objects in space:

> […] narration restores, in the temporal succession of its discourse, the equally temporal succession of events, while description has to model in successiveness the representation of objects coexisting and juxtaposed in space.[143]

Genette finds the case of Balzac exemplary because of the harmonic coexistence of description and narration in his novels. In general, for Genette, description comes to serve the needs of the dramatic unfolding of the diegesis, and thus is in a sense subordinate to narrative (1976: 6).

The revival of description in late modernist novels such as those of Robbe-Grillet is seen by Genette as just an attempt (certainly innovative) to constitute narrative by descriptive means:

> it appears clearly that description as a mode of literary representation does not distinguish itself sharply enough from narration, either by the autonomy of its ends or the originality of its means, to make it necessary to break the narrative-descriptive unit (with the narration dominating) which Plato and Aristotle named narrative. If description marks a boundary of narrative, it is an internal and rather ill-defined boundary. (Genette 1976: 7)

'Spatial' representation of objects and people (description) may be included in narratives, but, according to Genette, it has just a supportive role and never becomes their defining characteristic. Rather, Genette considers the temporal progression of action and events to be the defining characteristic of narratives. Spatial dimensions of texts, like description and self-reflexive reference (the latter here discussed in Part 1), are thus considered to be in a constant internal tension with narrative.

In his article "Spatial form: Some further reflections", Frank refers to Genette's essay "Borders of Narrative", and to the discussion of self-reflexive discourse and description therein. In this article, Genette refers to the novels of Robbe-Grillet, which he reads as somehow extreme examples of how description, even when occupying the entire text, still remains subordinate to narrative, as it is, in Genette's view, ultimately stories that Robbe-Grillet's novels tell. Frank, despite being a big admirer of Genette (as well as of Todorov) and considering this specific essay of his "brilliant", he nonetheless comments: "Whether one can still speak of description as subordinate in a work composed exclusively of the variation of descriptive fragments seems very doubtful; but disagreement on this point does not detract from the usefulness of Genette's categories" (1978: 287). Frank uses Genette's insights in the "Frontiers" essay in order to hint at the connection between description and a text's "spatial form"—which will be discussed in the last chapter.

There have been, however, scholars who studied description and descriptive genres in their autonomy from narrative. From this perspective, perhaps the 'canonical' theorist of description in literature is Philippe Hamon. Hamon explicitly relates description to notions such as "piece", "fragment", or "detail" (Hamon 1981: 24). He also connects it to the *paradigmatic* dimension of a text, as opposed to its *syntagmatic* one, which prevails in narration. The effect of temporal 'delay' that we find in an extreme degree in *Gomorrah* and also in many 'network' films, this suspension of "global information", in Zoran's terms, is characteristic of description. Hamon explains how description creates a "digression" and "expansion" (amplification) of the text and its temporality (1981: 96-97). As long as the temporal dimension is concerned, Hamon calls the descriptive system *synchronic* and he differentiates it from the *diachronic* system of narrative (1981: 18). There are specific mechanisms that hold the descriptive system together synchronically, such as parallels and antitheses, and "subsystems of equivalences (analogies, comparisons, metaphors)" (Hamon 1981: 131).

Hamon makes a historical link between description and topographical space. In literary critique, description had somehow been neglected and considered a qualitatively inferior part of the text, but a change of attitude can be observed in the end of the 18th century. Then, description becomes visible (especially in prose poetry) as a textual unity worth of

investigation in the European circles of literary critique, especially in France. Among the other factors that contributed to this 'visibility' of description has been, according to Hamon, "the spreading of travels and the creation of the notion of 'site', classified in the *Guides*, cultural objects to visit with the Baedeker at hand" (1981: 24).[144] The reference to places, sites and 'details seen', made the textual mode of description more prominent.

Not only the descriptive gains ground in texts because of cultural transformations affecting the notion of space,[145] but also the experience of the recipient becomes spatial in his or her encounter with description. Hamon points out that the object of description (for the one who describes, but also for the one who follows the description) is considered "a surface, a space, rationalized-rationalizable, articulated, fragmented, segregated" (1981: 61).[146] Description and its "aesthetics of fragment"—with manifest influence, according to Hamon, upon the European realist tradition—favours the staging of a discourse of transit ("*discours de parcours*"), in which "mobile persons cross and link these juxtaposed spaces" (62).[147] This mode of discourse that description stands for is different from that of narration. The latter can also be compared to a 'journey' (*parcours*), but this journey is always towards a destination.

Description at once encompasses two seemingly opposite tendencies, one towards fragmentation and another towards linkage of the fragments. This linkage does not however surpass the aesthetics of the fragment, but rather coexists with it. The pieces maintain their heterogeneity, and it is through this heterogeneity that a world comes to existence: describing the pieces is a way, according to Hamon, to build a "lived space" or a chronology and situate oneself within it (1981: 57). Description thus, I would add, fleshes out "experimental constructed realities", to use Hamon's expression, for both words/terms (in a text) and readers/recipients to feel at place.

The linkage of pieces implies a systemic quality of description. Description does not contradict the systemic logic, by suggesting a juxtaposition of elements without any connection to each other. As Hamon points out, description at once creates heterogeneous pieces, and operates on them by linking the pieces in a different way than narrative does. Thus, description proposes a different connection between units, prioritizing spatial disparity over temporal progression. Hamon refers to the way description creates a *topos*—literally 'a place' and figuratively a pattern or motif—and this happens only as soon as there is some sort of organization to the otherwise dispersed elements: he notices that both in Jules Verne and Emile Zola, and despite the differences in the function of description in the work of each one of them, "the topos *distributes* and *puts in correlation* certain number of posts, postures, objects and subjects, habitats, inhabitants and habits" (1981: 251; emphasis mine). The function of description as *topos* implies a double movement of distributing and correlating, juxtaposing and linking, which is fundamental in description. The space that description

creates is thus a complex *topos*, a system or network where heterogenous elements are connected through links, rather than placed in a sequence.

Description in film

But how does description work in the medium of cinema? Seymour Chatman, perhaps the main representative of classical structuralist narratology in film, wrote extensively on the role of description in narrative cinema. Among other influences, he drew on the work of Hamon and his questioning of the—often presupposed—hierarchical superiority of narrative to description. Chatman quotes: "Classical theoreticians seem to have seen in Description only a risky 'drift' from detail to detail—a process which, among all else, threatens the homogeneity, the cohesion and the dignity of the [narrative] work" (Hamon, as cited in Chatman 1990: 23). Chatman, like Hamon, also points at the 'systemic' qualities of description. As he stresses, "Description has a logic of its own, and it is unreasonable to belittle it because it does not resemble the chrono-logic of Narration" (1990: 24). Description for him renders contiguity (spatial proximity) more important than causality. Thus the impression of a "'putative drift' from detail to detail" that description creates is not aimless. I will use some of Chatman's remarks on the role of description in cinema in order to argue that contemporary complex films do not just question but subvert the hierarchy between description and narrative.

Chatman does not reject Genette's contrast between narrative and description in cinema; like Genette, he problematizes the role of description in narrative films. In his book *Story and Discourse* (1978) Chatman declares his conviction that "description per se is generally impossible in narrative films". Description in literature is associated with pause and lingering; in film, however, "the story-time keeps going as long as images are projected on the screen, as long as we feel that the camera continues to run" (74). Thus, 'pure' description is for Chatman impossible in the medium of film. Films do not permit the 'lingering' found in literary narratives. In film, even when no action takes place, "the focus remains on the event". Descriptive details, Chatman repeats in *Coming to Terms* (1990), "can only occur as a byproduct of plot action; they do not have a separate existence" (42). Description for Chatman is the opposite of the cinematic summary of action; it is "pause, which occurs when story time stops, though the discursive statement continues" (1990: 50). Such instances of description as pause and lingering is possible in cinema in the case of "freeze frame" (1978: 75), according to Chatman. A freeze frame, instead of serving plot needs, would allow more time to be given to objects or persons in the frame "to reveal their own properties" (Chatman 1990: 50).

In literature, description is vital exactly because the viewer does not see; in film, however, there is a plenum of visual details in every frame that cannot be avoided (40). Films do not need to describe because they show. Their modes of description can only be "tacit" and not explicit, Chatman contends (38). Thus, on the one hand, film is always descriptive (in terms of the "cornucopia of visual details" (40) provided in every frame), on the other hand, it is seldom descriptive on purpose. In my view, in both cases of tacit (cinematic) and explicit description, the latter is a mode of discourse that demonstrates, even implicitly, a textual (describing) agency.

In cinema, it is by means of contiguity and parallelism that description might evoke patterns connecting disparate images, objects or episodes. In order to reveal the cinematic "logic" of description, and the "*topos*" it creates, in Hamon's terms, Chatman draws on Christian Metz, who identified the descriptive as one of the two chronological syntagmas of film, the second being narrative. Metz refers to description in the editing space, and not the shot space. Thus, in the chapter "Problems of Denotation in the Fiction Film" from *Film Language: A Semiotics of the Cinema*, Metz defines description as the "absence of consecutiveness" and the presence of simultaneity between shots.

> There is one syntagmatic type in which the relationship between *all* the motifs successively presented on the screen is one of simultaneity: the descriptive syntagma […]. […] In the descriptive syntagma, the only intelligible relation of coexistence between the objects successively shown by the images is a relation of spatial coexistence. (1991: 127)

Action, one of the main foundations of narrative, is possible to be described instead of narrated in cinema, provided that this action is composed by elements, the relation between which is one of "spatial parallelism at any given moment in time" (*ibid*: 128). This is a type of action that, as Metz points out, is impossible for the viewer to "mentally string together in time" (*ibid*). To explain this Metz brings the example of "a flock of sheep being herded", an action which is described through a montage of shots of "the sheep, the shepherd, the sheepdog, etc." (1991: 128). It is not that one of these shots precedes the other in a causal-logical way; rather, they are chronologically simultaneous.

Based on Metz's descriptive syntagma, Chatman defines instances of this kind of syntagmas in fiction films as cases of cinematic description. He borrows another example used by Metz, that of a landscape described through a shot sequence including "a tree, followed by a shot of a stream running next the tree [sic], followed by a view of a hill in the distance, etc." (Metz 1974: 127, as cited in Chatman 1990: 42). In such instances, Chatman stresses,

> the point is not that the shots are diegetically simultaneous but that story time has temporarily been suspended. The [descriptive] shot sequence forms a narrative pause. The sign of the pause is precisely the temporally unmotivated shifting from one shot to the other. On the other hand, exactly the same sequence of shots *would* be narrative if the preceded or followed shots indicating the eye movements of a character looking at something ("first he looked at the tree, then at the stream, then at the hills"). (Chatman 1990: 42)

In this line of thinking, Chatman suggests that "camera movements that have no other motive (for instance, to communicate a character's perception of a scene) are often purely descriptive" (43). Thus, apart from freeze frames, there is another mode of cinematic description, and this is the parallelism of objects that appears as the purposeful (and self-reflexive) act of the camera, and not that of the characters. The camera acts as "a describer", when it moves independently of a perceptor's point of view, undermining the viewer's conventional—in narrative cinema—sense of eyeline matches. This creates an *effect* of "spatial disorientation" (Chatman 1990: 52), which I also stressed in the case of *Gomorrah*. Chatman uses as an example of description Antonioni's film *The Passenger* (*Professione: Reporter*, 1975). There, the camera work and editing disturbs the viewer's sense of scale, rendering the dimensions of objects indeterminate (Chatman 1984: 8-9). It also 'tricks' the viewer with eyeline match shots that suddenly 'bump into' the figure of the supposed perceptor. In *Gomorrah* exactly the same effect has been stressed as creating a *mise-en-abyme* impression as well as disorientation to the viewer.

Narrative being described: A change of hierarchy

The hierarchy between description and narrative does not always place narrative higher than description, Chatman contends. There are cases where narrative is contained to description rather than the other way around. It is not always description that "serves" narrative, according to Genette's formulation; sometimes it is narrative that serves description: "in many works whose overriding text-type is Description, the 'service' is performed by a contained Narrative, not the other way around" (Chatman 1990: 24). The example that Chatman uses in order to prove his point is an oft-cited passage from Homer's *Iliad*, with the detailed description of Agamemnon's armor. Chatman characterizes this description as "a mini-narrative" (33), because the parts that compose the armor are mentioned in an order that corresponds to the process of dressing, which may be considered a narrative, because it follows a causal-logical sequence. Here Chatman relies on Hamon, who, referring to the same scene of the *Iliad*, observes how "the ornamental aspect of the descriptive is integrated into the

finality of the narration; thus the paradigmatic aspect of the list becomes one with the syntagmatic aspect of the narration, the derivational into the transformational" (Hamon 1981: 17). However, according to Chatman, this mini-narrative serves the description of Agamemnon's armor, and this description in turn "subserves the overriding narrative of the *Iliad*" (1990: 33). Therefore Chatman observes "a multiple layering of 'service'" taking place between narrative and description, and rejects the presumption that it is always description that serves narrative (34). At the same time, he refuses to ascribe a qualitative value to 'service' (and to imply that the textual type that each time serves the other is in a sense 'inferior'), proposing the term as a textual device.

There have been other theorists apart from Chatman, who have proposed a reconsideration of the role of description, which cannot anymore be considered just "*ancilla narrationis*"—according to Genette's expression (1966: 157).[148] The prevailing view among these proposals is that description is not inferior to narrative but an important constituent of narration. Ryan, for example, holds that description is not antithetical to narration—it rather establishes the spatial relations that are essential to its construction: "Though description is often regarded by text typologists as the antithesis of narration, it is also the major discourse strategy for the disclosure of spatial information" (Ryan 2010: paragraph 27).

My suggestion for reconsidering the role of description, taking as a starting point contemporary complex films, would nonetheless differ from the above views, as well as from that of Chatman. The example of *Gomorrah* can be used as indicative of how the hierarchy between narrative and description tends to be not only challenged but more decisively subverted in the case of contemporary complex films, as narrative is found more often overall 'serving' description than the other way around. The aspect of description is highlighted through the iterative rhythm of *Gomorrah*, which suspends the diegetic relations between the separate characters. Characters resemble objects where the narration lingers on, in its '*parcours*' from one story to the other, a *parcours* which is not motivated by narrative action and causality but rather by the self-reflexive agency of the camera. This *parcours* participates in the overall piecemeal aesthetics of the film (which new media theorists like Manovich would call 'database'). The multiple episodes of the narrative thus become themselves objects of description.

At the (micro-)level of shot space, the camera work and editing follow a drift unmotivated by narrative. The camera is driven from piece to piece, only that now the pieces are not the characters' stories, but shots of the setting from different, discontinuous and sometimes contradicting angles. The "disorienting effect" that Chatman talks about is created through the shifts in scale and lens focus, discussed in Chapter 8. At the (macro-)level of episodes, the drift is performed between the five mini-narratives that are used in order to

describe the world of Camorra—and make it emerge out of its fragments. The editing of the episodes could be considered as subsuming narrative under description. The excerpts from the lives of the different characters become pieces that are juxtaposed in the space of the film, considered to be contemporaneous and with no temporal successiveness between them. More than a "multiple layering of serving", like the one Chatman finds in the *Iliad*, and that, in his view, ultimately serves and not subverts the narrative, I find in *Gomorrah* a subversion of the narrative-description hierarchy, more decisively 'privileging' the side of description. Thus, the mini-narratives of *Gomorrah* do not serve the composition of an overarching narrative. There is not a beginning, middle and end in which we can place these autonomous stories. If this applies in other complex films too (and I think it does in forking-path films such as *Run Lola Run* and in other films with multiple contained stories), then we can legitimately doubt their overall labeling as narratives.

Chatman's primary concern in *Coming to Terms* seems to be to show how description can be incorporated in narrative films, not as inferior to narrative but as an equal helper. He also pointed at instances of narrative serving description; however, there seems to be, in the examples he used, a 'narrative umbrella' that covers this layering of 'serving' going on underneath. My concern here is to show how description, along with other traditionally considered "anti-narrative" or "non-narrative" features, now becomes the 'umbrella'. Starting form the pieces that are being juxtaposed, and moving in a bottom-up way, description participates in the incorporation of narrative into forms of (complex) textual and cognitive organization that subsume and transgress narrative.

New media and description

As Hamon observed, description is in semantic terms closer to the paradigm, as opposed to narrative that is closer to the syntagm. Semantic units have a paradigmatic relationship to each other as long as the replacement of one with another does not affect meaning. On the contrary, a syntagmatic relationship implies that the existence of one unit depends upon its specific placement in a sequence of units. Drawing on Saussure's and especially Roland Barthes' theory of sign systems, Manovich argues in *The Language of New Media* that the prevalence of digital computer and electronic storage devices tends to make paradigmatic forms of organization more prominent in contemporary culture than they have been since the beginning of the 20th century, when (narrative) cinema was gradually established as the prevailing cultural form. As he points out, with new media "[t]he paradigm is given material existence, while the actual narrative (the syntagm) is de-materialized" (Manovich 2001: 230-231). However, Manovich finds that, when the formation of cultural objects is at hand, most interfaces, although constituted paradigmatically out of databases,

tend to finally impose a syntagmatic order upon their elements. Nonetheless the cultural penetration of the paradigm is nowadays much more pervasive than it was for the most part of the last (20th) century.

'Complex narrative' films illustrate this centrifugal, as I call it, tendency to organize their elements paradigmatically rather than syntagmatically. Of course, the syntagmatic mode of narrative is still present and coexistent with the paradigmatic mode in complex films; however, the hierarchy between the two seems to be shifting more often. A hierarchical shift from syntagm to paradigm would thus be one from narrative to description. Although the relations between the pieces of complex films eventually give rise to a whole that we may call, after Hamon, a *topos*, the initial selection of elements is contingent. In the example of *Gomorrah*, the principle characters and their developed stories were contingently selected out of a database of characters contained in the homonymous book. Moreover, some of the five stories of the film could possibly be altered with different ones without affecting the overall organization of the film, because the latter is not dependent upon that of the particular narratives included in it. The film contains them, yet it subjects them to an ordering principle that is 'more than their sum'. As I already pointed out, like *Gomorrah*, complex films appear non-selective, containing multiple points of view, and temporally discontinuous. They thus subject themselves to an overriding paradigmatic principle that treats the narrative segments as units that can be individually accessed and altered with others out of a set of possible elements, without affecting the overall organization. The transformation that narrative cinema goes through, and which becomes manifest in complex films, cannot be explained away as a superficial imitation of new media modes. Independently of the duration and the inevitable commercial appropriation that this cinematic phenomenon may have, it nevertheless provides a chance to question some of our certainties about narrative and its relation to cinema.

Although Manovich sees the concept of description relevant in the case of new media techniques of image composition, he does not connect it to new narrative forms. In his reference to description, he does not draw on literature but on painting, and specifically the work of art historian Svetlana Alpers on the 17th century Dutch painting, in which the descriptive mode prevailed, as opposed to the Italian Renaissance painting, which privileged the narrative mode (Manovich 2001: 327). Manovich relates this descriptive mode to the "aesthetics of density" that resurface in the context of new media and "new cinematic aesthetics", as long as digital compositing offers more options to create dense and synthetic images, putting every detail in focus. This aesthetics of density can also be applied in films as compositions of mini-narratives. This can work in a wide range of films, from *Short Cuts* and *Magnolia* to *Gomorrah*. Description becomes a mode that fits the dense diegetic aesthetics of complex films.

The way new media use software that operates upon individual units is also reminiscent of how description functions. Ian Bogost suggests that the logic of "unit operations" that software technology follows,[149] may also characterize our critical approach and analysis of cultural objects, apart from informational data. Bogost makes an attempt to apply the logic of unit operations in film analysis discussing the film *The Terminal* (Steven Spielberg, 2004). The unit operational approach could be developed, as he suggests, into an alternative to the classical narrative approaches to films, by privileging "discrete components of meaning over global narrative progression" (2006: 19). In this view, *The Terminal* is not a narrative system ("the story of a handful of developed characters"), but a "procedural" one, "a framework for general figures of waiting" (2006: 18-19). He explains:

> As the film plays out the interwoven stories of Viktor, Dixon, and Amelia, it challenges the viewer to abstract the film's specific representations of waiting into general, individual units of meaning that the viewer naturally combines with his or her own experience. In my unit analysis of the film, the story serves as the glue for a configurative work about specific modes of uncorroborated waiting. (Bogost 2006: 19)

From the perspective of description, the mini-narratives I referred to can be seen as "units of tightly encapsulated meaning" (*ibid*: xii) which operate independently of each other but still can have relations between them that may be conceived by means of contiguity, analogy, parallelism or metonymy, the relations that description gives way to. Approaching semiotics from the point of view of his theory of unit analysis, Bogost uses Saussure's distinction between *parole* and *langue*, noting that *parole* refers to a unit operation, a "single use of a sign", while *langue* refers to "the general system underlying the use of any particular sign" (23). Description is in my view a "unit operational" process, performed by 'old' media such as literature and film. It highlights elements as units that may relate to other elements and form aggregates and emergent organizations.

The units of complex films may be heterogeneous and distributed, but they nonetheless form a system, or a *topos* as Hamon called the textual systems that description forms, and this feature differentiates them from the elements of a heap or a catalogue, as discussed in Part 2. This *topos*, however, while connecting the elements in the same space, maintains the elements' heterogeneity from each other. These elements are not connected by necessity (as a syntagmatic structure would imply) but by contingency. They are codependent only at higher level of the pattern they form, but this pattern is also contingent and uncertain, characterized by the non-stationary dynamics of complexity. Thus, the way that narratives are turned into units makes it possible to operate upon them in a way that subsumes narrative under the

parallel and distributed modes of organization that expand in contemporary culture, and make narratives nodes in larger complex networks of media and cultural production, which, as complex systems, are never static.

In this chapter I tried to show that description as a type of discourse produces a textual 'system' different from that of narrative. It facilitates relations among units that suggest a parallel and spatialized processing of them on behalf of the recipient. Calling this type of processing 'spatial' I do not refer to the topographical notion of space (the place depicted in a film or novel), although place and its markers can also be processed spatially; I rather refer to the type of cognitive processing that emerges from the '*parcours*' through different units (objects/characters, shots, sequences, embedded narratives) of a film and their relations to each other. The mode of discourse that facilitates this *parcours*, i.e. description, can be connected to an epistemological stance towards complexity.

Pia Tikka, filmmaker and researcher, refers to a paradigm shift that has taken place from the *governing* of complexity—a stance prevailing in cybernetics—to its *description*, a stance represented by complex systems theory, according to Tikka (2008: 287). Governing corresponds to the classical cybernetic approach that aimed at the control of complexity (homeostasis) while description to the interest in what complexity might bring when it is left to develop, even in a preconstituted environment (emergence). Emergent and 'descriptive' approaches suggest following in a bottom-up way the patters of the connections between units in their never-ending drift. In the next chapter I will examine whether such an emergent sense of 'pattern' can have application in contemporary complex films.

9. The pattern of complexity

In Part 2, I referred to pattern-based causality as a term that may better account for the complex causal relations involved in "ensemble" or "network" films. This type of causality was connected to the nonlinear dynamics and complex interrelations among many different agencies within and beyond the diegesis. Here, the spatialized texts of complex films, that are discontinuous and give the impression of being composed by multiple units, will be generally connected to pattern-based forms of organization, since patterns are always formed out of heterogeneous and 'noisy' ensembles of units. Complex systems theory addresses the process through which spatially distributed units form aggregates and develop in time. The aggregates of units into systems appear as patterns. I will evaluate the already existing theoretical approaches of contemporary complex films from the aspect of pattern making, and attempt to resituate the term pattern as it is used in film theory in the context of complex systems theory. Seen as complex systems, contemporary complex films participate into the formation of emergent cinematic patterns that combine contingency and order into complex adaptability.

Pattern, randomness and narrative

'Pattern' is a generic term that may have several meanings. In common language it might connote a "model, a copy, or example", or "a regular or decorative arrangement", as in the case of decorative ornaments (Oxford English Dictionary). In information theory and computation, patterns are mental models that help us distinguish regularities in the shape and sequence of perceived elements that make them unities intelligible to a perceiver, by eliminating the amount of 'noise' contained in them. As Katherine Hayles mentions, in the 'traditional' information theory of Claude Shannon, noise corresponds to randomness, while information corresponds to pattern (1999: 18). In the complex systemic strands of information theory, however, pattern and randomness are found in a productive dialectic, as systems achieve higher levels of complexity with the "infusion of noise" (*ibid*: 25). Therefore, through the development of information theory and chaos theory, "randomness is not "simply […] the lack of pattern" but "the creative ground from which pattern can emerge" (286).[150]

Complex systems theory goes a step further than this. Not only does it demonstrate that pattern is an order that is produced from randomness, but more decisively merges randomness with pattern. Thus, pattern does not come after randomness but is infused with it. Emergence in complex systems is considered to be the formation of a pattern. According to the definition provided by the New England Complex Systems Institute, a pattern is "a simple kind of

emergent property of a system […] a property of the system as a whole but […] not a property of small parts of the system" (Bar-Yam 2000).

From the perspective of autopoietic complex systems theory, as Francisco Varela, Evan Thompson and Eleanor Rosch point out, the constitution of patterns, which I will here call, using an informal expression, "pattern making", is fundamental to the way a system 'couples' with its environment, and is associated with the way autopoietic organisms self-organize by relating and dealing with external complexity:

> ...over time this coupling [of a system with its milieu] selects or enacts from a world of randomness a domain of distinctions ('odd sequences' or 'two successive perturbations') that has relevance for the structure of the system. In other words, on the basis of its autonomy the system selects or enacts a domain of significance. (Varela et al. 1993: 155-156)

The process of creating the "domain of distinctions" and "odd sequences" is a process of pattern making. To make a pattern is to create a domain of significance, and therefore a world that is meaningful to the system.

In complex systemic approaches that emphasize adaptation, such as that of complex adaptive systems (*cas*), pattern making is a generic name for the processes involved in a variety of mechanisms (such as tagging, internal models and building blocks) that *cas* use in order for their micro-agents to self-organize and create aggregates (see Holland 1995). Pattern making is necessary in order for complex systems to organize themselves. Characteristic in the *cas* approach is that it considers the mechanisms of complexity and adaptability not only a matter of epistemology (of how an external observer discriminates a pattern that is formed out of the aggregation of individual units), but also one of ontology, of how living or non-living systems organize themselves, by converting "patterns into changes in [their] internal structure" (31). As discussed in Part 1, complex systems "reintroduce the distinction" between themselves and their environment into their own structure, and thus the patterns they form in order to deal with environmental complexity change their own structure, making it more complex. The circle of complexity is one that connects an organism/system with its environment, and creates a world as a "domain of significance", as Varela would have it, for the system.

The use of the word pattern in complex systems theories implies a different process of pattern formation, and to some extent contrasts the common association of pattern with a pre-existing order, with a model that is simply copied. There are scholars, among whom Hayles, who, based on the complex systemic conception of emergent organization through an interplay of pattern and randomness, compare narrative with such organization. They seem to imply that

narrative, although it can be conceived as pattern, because it has a certain order and regularity, nonetheless contains randomness and complexity. Tsoukas and Hatch, from a complex systems perspective, relate pattern making to the weaving of past, present and future that narrative effectuates (2001: 1006). Along with them, also other scholars (indicatively see Stoicheff 1991, Argyros 1992, Randall 2007) see in the flourishing of complex systems theories and their openness to randomness a chance to reevaluate the role of narrative, considering it through the lens of complexity. Narrative for them is not just a regular pattern, and it does not necessarily eliminate noise. It is rather the process through which order *emerges* out of randomness. Narrative couples with contingency, and is generated by it. Thus, every text is a selection out of multiple possibilities, and every choice that is made in order to tell or to construct a story is one that moves between pattern and chaos. In this context, contemporary "complex narratives", with their openness to contingency and their hesitation to make absolute selections, could be seen as demonstrating the complexity inherent in every narrative. They become manifestations of the complex processes that take place before narrative manages to construct a finite 'story' with a beginning, middle and end.

There are, however, points that have not yet been explored, although many films of the complex narrative tendency raise them. Such as, when a story with a beginning, middle and end cannot finally be constructed, as it happens in *Gomorrah* and other complex films, are we allowed to name the process of viewing a fiction film narrative, or should we look for other terms to describe the contact between its text and the recipient? And if this process is indeed one that could be characterized as an emergent pattern, then how can we talk about this pattern without defining it as (and confining it to) narrative? Emergence, as discussed in Chapter 6, but also as broached in the beginning of the present chapter, is a pattern-based process, but the pattern it creates is not finite and it does not simply come after randomness; rather, it retains randomness, and it never becomes a decisively clear form. Complex systems oscillate from one pattern to another, from one assemblage/aggregate to another, generating in this lingering process further complexity. Narrative, no matter how emergent a process can be conceived, it always evokes "a sense of an ending", due to its partial holding on the pole of 'story' or '*fabula*'—in the sense of a beginning-middle-end structure. My opinion is that following the nonlinear dynamics generated before narrative, we can move to concepts and theories that better address the complexity of the interaction between a film and a viewer, a text and a recipient, a complexity that is invited and stimulated by texts that allow a greater degree of 'disorder', lingering, and, indeed, '*parcours*' in them, such as complex films.

Pattern formation in 'ordinary' and complex narrative films

The notion of pattern has been used by film scholars in different ways; indicative of

the association of pattern with a film's form and organization, as well as with narrative, is Bordwell's and Thompson's account of the term. The whole process of film viewing is a pattern making process according to Bordwell and Thompson, as they use the word pattern for everything that means "form", a shape that elements take when they are related. As they note in *Film Art: An introduction* (2008), "form is a specific system of patterned relationships that we perceive in an artwork" (71), and films are no exceptions to this rule. Pattern for Bordwell and Thompson is a system; it is a way to organize perceived elements so that they become meaningful (intelligible) to a human observer/beholder. As a representative of cognitive narratology in film theory, Bordwell here too relies on cognitive theories that relate perception to preexisting schemata, which he and Thompson call patterns.

> The mind is never at rest. It is constantly seeking order and significance, testing the world for breaks in the habitual pattern. Artworks rely on this dynamic, unifying quality of the human mind. They provide organized occasions in which we exercise and develop our ability to pay attention, to anticipate upcoming events, to construct a whole out of parts and to feel an emotional response to that whole. (Bordwell and Thompson 2008: 54)

Bordwell and Thompson make a rather generic use of the word pattern. From the perspective of the viewer and his or her cognitive activity, they use the term pattern to refer to cognitive schemata against the backdrop of which the viewer tests every new stimulus given by the film.[151] As far as the textual characteristics of the films themselves are concerned, Bordwell and Thompson again find pattern a useful term. They thus mention that films offer a "patterned experience", that a film's style is a pattern, and that narrative is also a pattern (style and narrative are according to the writers the two organizing principles of the overall form of a film). Everything that becomes an intelligible form may be called, according to Bordwell and Thompson, a pattern.

The approach of Bordwell and Thompson to film is systemic—as long as they refer to the composition of wholes out of elements—and a useful place to start off with for the study of narrative films as systems. However, this common ground with my approach makes even more striking the difference between the conceptions of 'system' at play. I find that even though Bordwell (in *Film Art* with Thompson) sets off from a systemic theory of film viewing, he tends to focus on the way complexity is gradually 'domesticated' with the help of familiar schemata, rather than on the way complexity grows; his approach is centripetal, while I see the need for a centrifugal and *complex* systemic approach to films, and especially those that have been characterized as complex.

Bordwell and Thompson relate the neuropsychological human tendency towards

pattern making with an "urge for form" that film viewers have (56).

> Why does an interrupted song or an uncompleted story frustrate us? Because of our urge for form. We realize that the system of relationships within the work has not yet been completed. Something more is needed to make the form whole and satisfying. We have been caught up in the interrelations among elements, and we want to develop and complete the patterns. (56)

This tendency towards pattern making is acceptable by contemporary neuroscience,[152] but the point I disagree with Bordwell's and Thompson's application is on their insistence to link the pattern making cognitive processes with a 'completion' schema that bears similarities with that of (classical) narrative. Thus, especially when it comes to the narrative form, Bordwell and Thompson translate this "urge" for completion of the patterns into a need for narrative closure. Narrative is according to them a pattern with a beginning, middle, and end:

> Typically, a narrative begins with one situation; a series of changes occurs according to a pattern of cause and effect; finally, a new situation arises that brings about the end of the narrative. Our engagement with the story depends on our understanding of the pattern of change and stability, cause and effect, time and space. (75)

As it might have become apparent, for Bordwell and Thompson pattern is not specific to any specific kind of film or genre, nor of course to complex films.

Nonetheless, a more specific application of the word pattern in the context of complex films is attempted by Bordwell in his article "Film Futures", which, as I mentioned in the Introduction, set off the debate on the complex narrative tendency in contemporary cinema. In this article Bordwell refers to pattern making in order to show how 'forking-path' films (i.e. films with branched stories such as *Sliding Doors*, *Run Lola Run*, *Too Many Ways to Be No.1* and *Blind Chance*), which initially appear more complex than the standard narrative films, do not differ so much from any other narrative film in terms of the cognitive processes they evoke. Here Bordwell makes particular reference to the spatial patterns put forth by these films, although he sees them as 'serving' the beginning-middle-end 'pattern' of narrative.

In forking-path films, according to Bordwell, the viewer's handling of the narrative's complexity becomes an easy task, because the alternative versions of the story are constructed to be very similar, except for some striking differences that highlight the parallelism between the different versions of the characters' destiny. Thus, he notes, "forking-path plots can bring parallelisms to our notice quite vividly, thereby calling forth well-practiced habits of sense-making" (2002: 97). The recurrent return to the crucial moment from which the three stories begin and develop as alternative branches, for instance in *Run Lola Run*, becomes a pattern

that once developed, makes it easier for the viewer to follow the film, and moreover, to integrate this pattern into the overarching "narrative patterning" (92). The forking-path pattern can be "enacted" every time that we encounter a film that uses it, in order to help us deal with narrative complexity. Thus, Bordwell concludes, "artists should test the limits of story comprehension, but those very limits, and the *predictable patterns* they yield, remain essential to our dynamic experience of narrative" (2002: 103; emphasis mine). Narrative may be a dynamic process but it is always a cognitive activity that seeks closure—once the separate elements constituting it fall into place and become intelligible in their pattern. As Bordwell shows, the intense presence of parallelism in forking-path films and their spatial patterns ultimately falls into place in the larger pattern of narrative, with its sequential, beginning-middle-end, form.

This extensive discussion of the—rather generic—use of pattern by Bordwell and Bordwell and Thompson wants to show how pattern making in narrative film theory, even though 'systemic' and 'emergent' to the extent that it presupposes a dynamic cognitive process, is nonetheless not really complex, as it is associated with the closure of meaning, the order and the ending that narrative implies. The combination of pattern making with narrative ends up being less emergent and open-ended than it sets off to be. In the continuation of this chapter I will focus on the spatial patterns that prevail in complex films and evaluate different takes on the connection between them and pattern making.

Pattern and spatial form

I will now clarify what I think is the specific connection of pattern making with complex films and why this lies in the spatialized form of their texts. According to literary scholar Gabriel Zoran "a spatial pattern is any pattern perceived solely on the basis of the connection between discontinuous units in a text, demanding therefore a perception of the whole text or part of it as given simultaneously in space (which is for example, the case of analogies)" (1984: 311). I think that this definition of pattern fits the case of contemporary complex films. According to this definition, textual discontinuity triggers the creation of patterns, as far as the aspect of perception is involved. Yet, in my opinion, pattern making cannot be conceptualized as a function of the perceiver alone. It rather involves, from a complex systemic perspective, two different systems: the textual system and the cognitive system of the recipient. Pattern making may be evoked by the text's structure and by its mode of discourse, particularly description, as discussed in the previous chapter, with the relations it creates between units through juxtaposition or contiguity.

The genealogy of the theoretical connection between textual pattern making and emergence of meaning can be traced back in the work of Joseph Frank, whom I have

mentioned in other parts of this dissertation as well. Frank's discussion of the "spatial form" in poetry and literature up to a point follows the tradition of Lessing (even though turning it upside down), in the sense that Frank tends to create a binary opposition between space and time that has become redundant, and for which Frank has been heavily criticized (among others, by G. Giovannini and Frank Kermode). However, I find that his insights should not be easily dismissed, as Frank was aware that the spatial form has its own different "chronicity", which he called spatial in order to distinguish it from the linear (sequential) chronicity traditionally assigned to literature. Referring back to his original 1945 essay Frank explains:

> I merely stated what has since become a platitude—and what I can now put in more precise linguistic terminology—that the synchronic relations *within* the text took precedence over diachronic referentiality, and that it was only after the pattern of synchronic relations had been grasped as a unity that the "meaning" of the poem could be understood. (1977: 235)

Although the object of Frank's theory had been modernist poetry and literature, he later saw the spatial form having a potentially broader application, being inspired by French structuralism and its prominent narratologists such as Todorov and Genette.

The spatial form is a pattern, according to Frank. He points out that the spatial form has its own "logic", the "space-logic" of reflexive reference, as he calls it, which makes it necessary "to suspend the process of individual reference temporarily until the entire pattern of internal references can be apprehended as a unity" (1977: 232, citing himself from the original essay). As William Holtz comments,

> [for Frank the] spatial form is not, as we might guess, necessarily "descriptive" writing aimed at the mind's eye but rather a form that grows out of the writer's attempt to negate the temporal principle inherent in language and to force apprehension of his work as a total "thing" in a moment of time rather than as a sequence of things.

Here Holtz refers to the association of the spatial form with the "descriptive", but also emphasizes its being a result of the conscious negation, on behalf of the writer, of linear sequentiality—a consciousness that has been attributed to modernism.[153] In modernist texts, and according to Frank's theory, "the sequential or temporal principle is replaced by the principle of 'reflexive reference': that is, suspension of meaningful reference until the whole pattern is perceived" (Holtz 1977: 272-273). Meaning is for Frank a spatial pattern—in the sense that it connects and helps unify distributed and disconnected elements.

A similar suspension of meaningful reference and negation of sequentiality is the case in many of the contemporary films discussed as "complex". Through the analysis of

Gomorrah in Chapter 7 I emphasized the obscurity of the film's world, its avoidance to name places and its discontinuous and 'shifting' view upon the surroundings. This obscurity could be interpreted as a 'suspension of meaningful reference', until the 'whole pattern' is perceived or 'faced' in the end, through the last disclosure that the film makes.

Moreover, in *Gomorrah* as well as in other contemporary complex films, we find a characteristic 'bottom-up' perspective on place, or a 'spatialization of place' as I called it in the previous chapter. This is one more feature connecting these films with the spatial form. The example of the city of Dublin in Joyce's *Ulysses*, turned into an emergent pattern in the way it is analyzed by Frank, might remind us *Gomorrah*'s Naples or *Run Lola Run*'s Berlin. In Holtz's words:

> To illustrate this concept [of reflexive self-reference], Frank ranges over a wide variety of works. In *Ulysses*, for example, the narrative is so fragmented, the key allusions and symbols so scattered, that the reader must continually suspend reference until he imperceptibly gains a sense of Dublin in its entirety: Joyce demands that the reader achieve "the same instinctive knowledge of Dublin life, the same sense of Dublin as a huge, surrounding organism, that the Dubliner possesses as a birthright. It is this birthright that, at any one moment of time, gives the native a knowledge of Dublin's past and present as a whole; and it is only such knowledge that would enable the reader … to place all the references in their proper context. ... Joyce ... proceeded on the assumption that a unified spatial apprehension of his work would ultimately be possible." (1977: 273, citing Frank in *The Widening Gyre*, 1968)

The obscurity of place, and the disorienting *parcours* through it in complex films such as *Gomorrah* and *Run Lola Run*, gives way to an emergent pattern to be formed, as a world created out of the disparate pieces.

In Chapter 8 I mentioned that Frank considered description to be an expression of the text's spatial form. Taking his insight as a starting point I would argue that description is a mode that creates synchronic relations between textual elements so that patterns emerge. The feeling of lingering and temporal suspension that description creates, serves, according to a text's "space-logic", the formation of patterns. Patterns, in the complex systemic view, are emergent 'wholes', not reducible to the sum of their parts. A necessary condition for their formation is the existence of relations that connect the disparate elements into a unity, marking a shift to a higher level of organization.

Despite description's association with metonymy,[154] the whole-part relationship prevailing in metonymy is often transcended, and this becomes particularly apparent in the

case of cinema, when description, or "the descriptive", becomes a way to loosely connect elements in space—the way that Chatman showed using examples from Antonioni. In complex systems, the connection between pieces and their aggregates is nonlinear, as soon as these aggregate 'wholes' do not preexist but emerge out of the interrelations between the units. Thus, the units that constitute the emergent wholes are not 'parts', because they are by no means subtracted from a preexisting whole. In this line of thinking, description's focus on individual and heterogeneous elements points at the potential emergence of wholes in the sense of complex, emergent systems, and not in that of a preexisting system or schema.

It is a cognitive process that the theory of the spatial form points at when it refers to the way the discontinuity of a text and the synchronic relations between its elements bring to the forth patterns. Holtz notes:

> For the "spatiality" he [Frank] finds in literary form is not the spatiality objectively present in a painting or a sculpture (except for "shaped" poems and other such typographical devices); rather, this literary spatiality seems to be an operation of the mind synthesizing data which may (in some instances Frank cites) form a visualizable image with communicable spatial dimension but which (in most of his examples) do not necessarily cohere in any demonstrably spatial way. […] Thus the spatial order of a painting and the "spatiality" of *The Waste Land* are of different ontological orders, and the critic should not confuse them. (1977: 274)

Where is then the 'space' of the spatial form? As Holtz argues, it lies in the pattern, and does not have the objective dimensions and spatial relations that a painting has. But Frank himself is explicit connecting the spatial form with a cognitive process, when he points out that spatial form is a pattern through which meaning is produced. This pattern, however, has a clear, even though not direct and 'linear', connection with the text's form. It is not a pregiven, 'natural' cognitive process of pattern making that is here at hand, but one that emerges from the text and its discontinuous ordering and triggers a cognitive response from the recipient.

The theory of spatial form, as John Tolva argues,[155] finds application in hypertext literature, to which the plot structure of complex films has been compared. Hypertext connects story-chunks through links that are followed in a non-sequential order. Using the example of the "Mola Web" (a hypertext created by the collaboration of several hypertext authors, among whom Michael Joyce), Tolva refers to the way the hypertext reader may perceive the "implicit and dynamic designs" of the text as "patterns, juxtapositions or recurrences" (Joyce, cited by Tolva 1996: 69). Tolva explains how the experience of such designs becomes meaningful: "As in a splatter-painting by Jackson Pollock, what emerges from seeming chaos is distinct, though random, pattern—what [Michael] Joyce calls 'contour'" (71). The process of going from one

link to the other and the relations between the units of a text thus created, generates space:

> Rather than disrupting the concept of spatial form […], links generate it, thwarting temporal flow and opening a space for the reader's mind to construct the extra dimension needed to rationalize the act of "traveling" a link in a Euclidean universe that physically, logically disallows it. We think space, therefore it is. (Tolva 1996: 73)

The juxtapositions and recurrences found in hypertext and its spatial form have similarities to those of complex films. Space is generated by the film's discourse and by the cognitive effort of the viewer to accommodate to it and to follow the discontinuous *syuzhet*. The links that Euclidean space disallows are those that the viewer has to generate in order to connect the disconnected units of complex films; (when these units are temporally separated, the effect might be the 'time-juggling' I referred to in Part 1). 'Fractal' films, such as *Run Lola Run*, and their characteristic features of "multiplicity, simultaneity and fragmentation", realize, according to Everett (2005: 160), Slavoj Zizek's assertion that cinema will evolve by creating through its fiction films experiences similar to those that cyberspace hypertext generates. Zizek saw hypertext as an expression of that sense of fragility, contingency and multiplication that characterizes both contemporary life and contemporary science; he also observed a clash between hypertext and the linear forms of literature and cinema (2001: 206). This sense of uncertainty and contingency, with which any emergent order has to couple, is also a core element of contemporary complex systems science and theory. Thus, the spatial (and for some hypertextual) form of contemporary texts might be an expression of an uncertainty that makes all pattern making processes generated by these texts emergent and incomplete, drifting rather than closing.

Ready-made patterns

The privileging of spatial forms of reception, such as those triggered by parallelism, analogy, recurrence and juxtaposition of units (and could be considered to be the ground of pattern making), are not at all a new characteristic of texts. Manovich refers to the way similarly spatial types of processing were prevailing before the expansion of industrialization; later on, the linear modes of industrial production put forth more sequential modes of processing (2001: 232). The resurfacing of spatial textual modes in contemporary culture is found in a certain tension with the classical narrative form. Particularly, the 'spatial form' of contemporary films is not as easily compatible with narrative as Bordwell would have it. Rather, as I would argue, it shows the gaps, inconsistencies and limitations inherent in

narrative. Thus, contemporary complex films cannot be placed in a smoothly continuous narrative tradition.

Pattern may be considered as emerging out of the dynamics and internal relations of the filmic text. To study the specifics of pattern making in either the textual system of the film or the cognitive system of the viewer, a bottom-up approach would be required, that would focus on the dynamics generated, without presupposing that every text 'naturally' creates patterns, just like every brain does. Having talked about pattern making as an emergent process, one could argue that in contemporary complex films there is pattern but it is not emergent but somehow 'pregiven'. For instance, in *Gomorrah* one could argue that the 'pattern' that emerges in the end allowing the disparate stories contained in the film to form a unity under the name of Camorra, is not constructed by the viewer but somehow provided 'ready-made' by the film. This function of pattern, which resembles but also contrasts (in its consequences) Frank's conception of it, is one point of criticism that Sean Cubitt addresses to films of the contemporary complex narrative tendency.

Cubitt has a different stance from Bordwell regarding the recent phenomenon of complex films, tending to emphasize the discontinuities these films introduce, rather than their seamless adjustment to the traditional narrative form and the corresponding cognitive processes. Likewise, Cubitt gives a special importance to the function of pattern in the groups of complex films that he calls, after Marsha Kinder, "database", and after Angela Ndalianis, "neobaroque"—the latter being for him the Hollywood (sometimes blockbuster) counterpart of database narratives. Cubitt uses a spatial notion of pattern, and emphasizes that it is the spatialized modes of presentation in database and neobaroque films that make pattern particularly relevant in them. Yet, Cubitt offers a critical perspective to pattern making in relation to these films. On the one hand, in contrast with Bordwell, he considers the spatial patterns of database and neobaroque films to be radically different from narrative and not easily integrated into the narrative order. On the other hand, like Bordwell, Cubitt also associates pattern making with a certain kind of 'closure', which is different from the narrative closure. The spatial patterns that contemporary films contain do not suggest, according to Cubitt, openness to the contingent but rather the closure of an ordered and 'pre-calculated' universe. Pattern, as Cubitt perceives it in contemporary complex films, leans towards order and regularity rather than chaos, noise and contingency; it is not a matter of emergent self-organization but of a pre-given model or copy, the sense that the word pattern has in common language and not in science and theory of complex systems.

Cubitt argues that in database and neobaroque films, the diegetic world might appear fragmented and disordered, but its coherency is not achieved by the viewer's own 'free wandering', but, in a way, it is 'imposed' to him or her 'ready-made' by the film. The

coherence and meaningfulness of the film lies in a preexisting pattern, which, once revealed, turns the film into a "self-enclosed world". Thus, as Cubitt states, "the purpose of subjectivity is fulfilled at the moment in which it is absorbed entirely into the pattern of the world". Referring not only to the level of narrative but also to that of shot composition, Cubitt continues: "as image becomes composition, [neobaroque films are extremely graphical] narrative becomes pattern, and the whole comes to a moment of gestalt coherence" (2004: 240). The spatialization of texts suggests for him a shift from narrative to pattern, but this shift does not point at the direction of emergent self-organization through contingency, but rather eliminates contingency. Even though Cubitt does not call this predestined path "narrative" (rather, he sees it as its opposite), he certainly finds contemporary complex films more 'closed' than Bordwell does. Thus, Cubitt observes how narrative seems to become a micro-element in a neobaroque spectacle, composed by eventful worlds, 'miniatures' of the classical plot, succeeding each other. Cubitt finds this 'logic' being pervasive in contemporary film production, and functioning in a wide range of films from blockbusters to titles of 'complex' films, such as *The Usual Suspects*, *Sixth Sense*, *Memento*, *Snatch* and *Dark City*. The multiple chunks that constitute the storyworld in these films makes Cubitt consider pattern making, rather than narrative, becoming the primary ordering principle in them. Pattern spatializes time:

> the construction of the database narrative is modular, encouraging games with flashback (*Memento*), Time Travel (*Twelve Monkeys*), and temporal dislocation (*Pulp Fiction*) to demonstrate with even more brilliance the command over events enjoyed by the pattern-making impulse. The effect is to make the narrative, like the diegesis, spatial. (2004: 239)

As long as their diegetic 'worlds' are constituted by loosely connected units, and events open to multiple interpretations, contemporary complex films might create to the viewer the impression that they are exploring the filmic universe more freely. However, what in fact happens, according to Cubitt, is the reverse: "Locking into a pattern at its conclusion, the database narrative reveals its gestalt. The task of the protagonists is to realize themselves as elements of an infinitely repeatable, enclosed horizon of rule-governed patterning" (2004: 240). For Cubitt, pattern making seems to be the way to approach and construct the filmic world both intradiegetically—by the protagonists—and extradiegetically—by the viewers. In both cases, it is a seemingly miraculous and passive absorption into a 'rule-governed' whole that is effectuated by these complex films.

Cubitt's approach to contemporary films of the complex narrative tendency appears rather pessimistic. It is infiltrated by the way image, shot and narrative composition works in

commercial neobaroque films and does not take as a starting point more alternative and independent films. Still, as I wrote in the Introduction, we cannot ignore the fact that complex modes of narration now become the norm rather than the exception, and that Hollywood and independent cinema mutually affect each other. Thus it is important to take Cubitt's remarks into consideration. At this point I would like to highlight two aspects of his theorization that I find fruitful and relevant to my theoretical approach to complex films. On the one hand, as I already broached, Cubitt certainly disagrees with the stance represented by Bordwell, that pattern making in films of the complex narrative tendency is 'business as usual', that it can be easily integrated into the narrative form or that it works in all films in the same way. Cubitt sees in contemporary complex films a break with the modes of narration and interpretation promoted by classical Hollywood films. He emphasizes the 'spatial' effect that pattern has on narrative form, and also makes the observation that the latter tends to be succumbed to the pattern making impulse, which now becomes prevalent. This is in accordance with my own conclusions in Chapter 8. On the other hand, in his criticism on the spatialization of narrative and the pattern making impulse, Cubitt seems to dismiss the—other than superficial—connection between the contemporary "database narratives" and the modernist texts in which Frank saw pattern becoming the emergent product of their spatial form. Modernist theory and structuralist narratology, under which Frank's theory may also be classified, drew useful conclusions about complex texts and distinguished them from other literary forms. Although some of these conclusions, especially those that have to do with discourse and spatialization, are applicable to contemporary complex films, they should nonetheless be contextualized in the current complex environment of cinematic production.

The spatialization to which Cubitt refers is different in its means and its purpose from the one of modernist novels or even that of Godard's films. In many contemporary complex films, spatialization might be present inside the shot, with techniques of image composition—the digital equivalent of the descriptive mode—that bring all details to the foreground, as pointed out by Manovich. It is also present in the baroque-like proliferation of pieces in the image or the sequence of shots, and the pastiche techniques found in film such as *Run Lola Run*, but also in the character and plot-thread assemblages of network films, discussed in Part 2.

In my view, complex films do not always promote passive absorption in their emergent worlds. The films I took as starting points in this dissertation are open-ended and not self-enclosed universes. An important factor always remains the function of each film within its own ecosystem, i.e. its embeddedness in a certain film tradition, a genre, a social and political context. In some non-commercial films, a process of world emergence similar to the one criticized by Cubitt may actually function as a call for critical reflection and active

engagement, as is (potentially) the case in *Gomorrah*, in which, from a totally different perspective, we have a process analogous to the one that Cubitt criticizes: a 'locking' of its world into a closed horizon (and it is hard to imagine an horizon that feels more closed than the one we literally see at the end of this film), and a 'rule-governed' failure of every attempt for individuation on behalf of the characters. Moreover, almost all films classified under the complex narrative category demand a laborious cognitive activity on behalf of the viewer, which could be pictured as a cognitive mapping (suggesting spatial juxtaposition) of elements either disconnected and out of order, or complexly interwoven and dense. The spatialization of the diegesis, and the 'exploration' it performs and also demands on behalf of the viewer, has already been highlighted in this dissertation in different ways: through the multiplication of characters, each of whom offers a different perspective upon the film's diegesis; through methods of filming that invite the viewer to orientate themself in a world that seems incomprehensible and perplexing; through plot twists, usually requiring a shift of perspective (or ontological level) that reveals hidden dimensions of the film's story world.

In contemporary database narratives, according to Cubitt, viewers are led to identify with worlds, not characters (2004: 236). This emphasis on pattern-governed, according to Cubitt, 'worlds' seems to be a market demand, apart from a stylistic or formal tendency.[156] Even when worlds or 'patterns' ultimately make their appearance in the end of a film like a gestalt or a magic picture, taking the viewer by surprise, most of the time there is something missing and left to the viewer (and not always to the film's sequel) to decide—a viewer who is constantly, as I pointed out in Chapter 2, addressed by the deictic markers of the diegesis and explicitly called to participate in its construction. This feature of complex films does not allow us, however, to exaggerate the degree of 'interactivity' in them. As it is the case in other, more 'properly' interactive works of the contemporary media art sphere, where it is the algorithm that controls the degree of interactivity, in complex narratives too, the piece of the puzzle that might be missing in the end is one carefully calculated to do so.

Two different conceptions of pattern and pattern making have been contrasted in this chapter. The one considers pattern to be a noise-eliminating regularity, a 'world' that becomes meaningful by forming a closed system, and the other an emergent whole that can be coupled with contingency rather than eliminate it. The latter is closer to the complex systemic sense of the word pattern. However, according to criticism such as that of Cubitt, even though the films of the contemporary complex narrative tendency seem to be challenging or even surpassing the narrative form by being increasingly spatial, discontinuous and open-ended in their textual structure, nonetheless fail to trigger emergent patterns. Cubitt seems to be arguing that (classical) narrative has this potential in a much greater degree than the contemporary tightly

calculated and 'neobaroque' cinematic constructions—which are not narrative, this being their demise.

In my view, complex films combine the two different versions of pattern, and at times lean towards the 'emergent' one. Moreover, their potential for emergent pattern making is not incompatible with their divergence from narrative. On the contrary, the fact that they subsume narrative under another, complex systemic type of organization, reveals openness and not closure, to which contemporary cinema as a complex system is in a way 'doomed', as I pointed out in the Introduction. What is needed is a shift of level, or a combination of analytical levels, the one of individual films and the other of the institution cinema, in order to see how openness, contingency and uncertainty of the latter (the institution cinema) may 'masquerade' as closure, structure and self-enclosed 'pattern' in the former (certain individual films of the complex narrative tendency).

Emergent patterns and cinematic adaptability

Gomorrah is certainly not the average case of contemporary 'complex' films. Although, as I showed in Chapter 7, it shares some common characteristic with other complex/network films, *Gomorrah* could not be easily classified as a 'neobaroque' film, the film category to which Cubitt mainly addresses his criticism. Its embeddedness into very diverse filmic traditions makes *Gomorrah* an incarnation of pattern and randomness. On the one hand, the pattern of the classical Hollywood gangster film, the bleak atmosphere and doomed protagonists inherited from the *Godfather* tradition, exerts its influence on *Gomorrah*'s narrative pieces, which have a certain beginning-middle-end structure. On the other hand, the lack of a single narrative focus, the episodic structure and *parcours* through different characters, places and perspectives, features drawn from its neorealist roots, suggest openness to contingency.

Neorealism did not reject narrative, but it opened it up to the "fragility and contingency of life in the aftermath of war" (Shiel 2006: 13). The Italian director Luigi Comencini considered as the reason for neorealism's unpopularity with the wider audience the fact that the public wanted to be told a story, while neorealist films 'illustrated a situation'. Taking as a starting point his comment, film theorist Christopher Wagstaff observes:

> Neorealist cinema was *not* the heroic narrative of a society that, through armed resistance, had achieved a victory over chaos. It was the far, far more profound thinking of a society that had to give up the infantile illusion of a heroically vanquishing anything, and instead had to discover the garden in what it had been living with along. (Wagstaff 2007: 64)[157]

Gomorrah is an amalgam of different 'patterns' in the cinematic tradition, one that tends towards order and another than opens to contingency. But the final contrast that *Gomorrah* creates between contingency and order does not happen at the level of narrative, but between its already contingent enough 'mini-narratives' and a higher level of order, the 'world order' of Camorra, as well as the one of the actual network of economy, and the networks of interrelated complex systems that contemporary society consists in. This order is of a different kind than the one of narrative, and seems to be for good or evil subsuming all forms of 'linear' organization, signification and anthropomorphic meaning. This order couples with contingency but also tries to tame it by taking forms of organization that allow it to adapt to the volatile conditions of contemporary 'reality'. Thus, in *Gomorrah* the dialogue between contingency and structure takes place not only *inside* narrative, i.e. through an interplay between the 'classical', sequential ordering of events and contingent happenings, as it usually happens in other 'complex' films, or, even in the loose narratives of neorealism, but also *beyond* narrative. This reflects what seems to be the case for contemporary 'narrative' cinema, which of course continues to produce stories, but does so by reproducing within these very stories its own observing distance.

Apart from the different patterns of storytelling that *Gomorrah* embodies, it also embodies the different poles of the notion 'pattern' that the complex narrative tendency combines. One that goes towards contingency, openness to the unknown, and 'free' *parcours*, and the other towards 'rule governed' reproduction of carefully calculated diegetic worlds. It seems as if the pattern that *Gomorrah* reveals at the end, which is not just Camorra but, as I pointed out in Chapter 7, the world economy, is the one that governs the 'domestication' of the once emergent complex narrative tendency by transmedia market forces. Complex films, just like the protagonists of *Gomorrah*, exhaust the degrees of freedom given to them by means of performative agency, and in the end they are defeated by the 'rules' that govern the game of systems that lie beyond their reach. No matter how bleak this 'observation' sounds, it is however made from a spot located inside these systems. *Gomorrah* is a product of a new world order in 'post-narrative cinema'; as such a product, and by its ability to 'observe' the structures of distributed control in contemporary globalized society (and here this structure is Camorra, while in *Burn After Reading* it was the CIA), it suggests that the tendency of complex films, despite the top-down patterning, still leaves seeds for bottom-up evolvement and transformation.

The complex narrative tendency may thus be considered itself to be a pattern, a temporary organization that combines order and chaos, narrative and non-narrative, and a sign of cinema's own working as a complex system, which follows a pattern making 'drift' in order to deal with the complexity of its environment. In complex systems theory, pattern making is

the process through which a system moves from pattern to pattern, from one organization to the next. Varela described this drift as a "selfmovement" that characterizes all "complex, nonlinear, and chaotic systems". In them, "there is never a stopping or dwelling […] state, but only permanent change punctuated by transient aggregates" (Varela 1999: 291). Emergence is pattern-based as long as it 'transits' from one aggregate to another. Pattern-based self-organization thus couples with contingency; it always weaves certain new 'ordered' areas, new patterns, but these are never stable; they are always in transit. The contingency they contain transforms these patterns at the very same moment that they become discernible, bringing new fluctuations, and allowing further bifurcations. Such fluctuations might be coming from inside the group-'pattern' of complex narratives, from their 'borderline cases', such as the one of *Gomorrah*.

Although emergent patterns appear as 'indiscernible' and 'noisy' to external observers, as cognitive philosopher Daniel Dennett puts it, "in the root case a pattern is 'by definition' a candidate for pattern *recognition*" (1991: 32). The complex narrative tendency was itself an emergent pattern in the 1990s, but later this pattern was recognized by big studios which imitated the modes of narration that certain complex films introduced. However, shifting the scale of analysis, both the complex narrative tendency and Hollywood can be seen as different organizational levels of the complex system of cinema, which through bifurcations, such as the one created by the complex narrative tendency, builds further complexity, adapts to its far more complex environment, but also constitutes this environment.

As it can be observed in individual films, narrative seems to become a relatively smaller component in the complex organization of cinema production than it has been in the past, and this facilitates the workings of the growing transmedia market. Thus, the fact that, in individual films, narrative becomes multiplied and miniaturized (as in the mini-narratives of network, 'thread structure' or even neobaroque films), an internal component in the larger network of a film's diegetic world, might serve, at a different scale, the larger self-organization of a media system in which the 'cinema-system' participates. Hence, the way that the textual/filmic space of individual films is constructed, affects—and is affected by—the broader space in which cinematic production develops. Cinema thus displays a fractal-like (self-similar in different scales) architecture, which is so characteristic of complex systems. And, as it happens with fractals, "understanding how a system works at one scale might lead to understanding how it works [at] other scales" (Manson 2008, referring to Mandelbrot 1977).

Self-organizing systems form patterns both in space and in time. They are adaptive as long as the aggregates they form change without losing their organization. Complex adaptive systems remain coherent under change (Holland 4). As they evolve to further complexity, they

are never the same as before, but they are self-similar, in the sense that they maintain their coherence, which consists in their *organization* and not their *structure* (i.e. the form that an organization takes at a specific moment in time). The fractal-like space that a complex systemic approach to cinema reveals, might be not just a sign of cinema's participation to wider social, technological and economic developments, but also one of cinema's adaptive capabilities in an ever changing and increasingly complex media and social environment, and its potential to transform this environment through its own self-transformation. Carried by emergent and nonstationary dynamics that never allow it to take a stable structure, cinema is nonetheless challenged to maintain its organization in time, and to continue enabling the constitution of worlds that are cinematic, as far as they engage and surround the viewer in his/her embodied presence. To paraphrase Holland, who talks about the city as a complex adaptive system (1995: 1), "cinema is a pattern in time: no single constituent remains in place, but cinema persists."

CONCLUDING OBSERVATIONS

Complex films are not 'complex' in the common sense of the word, meaning something that is so complicated that it is difficult to understand. I do not use this label with a qualitative loading, implying that the films of the recent complex narrative tendency are more clever or skillful than other—contemporary or older—films. The word 'complex' is used from the perspective of complex systems theory, implying that these films are configurations produced in contemporary cinema amidst the perturbations and volatile conditions that characterize its environment. In the context of this environment, individual films, film tendencies and the cinema institution produce their organization, on the backdrop of fleeting conditions, contingency and, not least, complex systemic crisis. Cinema is a complex system on any scale and at every level, and complex films are the units of its larger organization. In this specific point in time, they are configurations that contribute into rendering cinema adaptable to new media, cultural and economic conditions, but also allow it to transform these conditions.

The complex films I chose to analyze do not come from the peak of the complex narrative tendency in cinema, which was between the mid-1990s and the mid-2000s. They are rather latecomers in this trend. However, for precisely this reason they picture the way complex narrative features 'fertilized' a wide range of Hollywood, independent and world cinema filmmaking. In between the prevalence of the complex narrative tendency and its possible future fading, or dissolving into larger, and more complex (in the sense of developed and differentiated) formations, these films are snapshots of a post-'post-narrative' filmmaking that is evolving.

Through a shift from the narratological to the complex systemic framework, I tried to show how three 'post-narrative' characteristics—self-reflexivity, loose causality and description—perform an organizational, rather than disorganizing, function in relation to the diegetic world. I linked these characteristics to processes necessary for the self-organization of complex systems, namely, self-observation/self-reference, aggregation (of units) and emergent pattern formation. Through these characteristics, texts produce wholes that are meaningful and communicate with the recipient in ways that 'partly knock out the conscious mind'.

Literary theory, linguistics and semiotics are fields that study textual characteristics such as the ones I here connected to complex systemic functions. The study of language and texts is certainly not confined to the study of narratives. What I explored are the borders between narrative and these non-narrative forms, when they coexist textually, as in complex narratives. Moreover, I focused on how self-reflexivity, loose causality and description

produce systemic meaning, and by becoming the ordering principles of the film's diegesis, turn the latter into a complex systemic entity.

There exist films that are perhaps even more causally loose, descriptive and self-reflexive and that do not belong in the recent complex narrative tendency. Such films could be—and have been—called *avant-garde*, modernist or postmodern in different socio-historical periods. As to whether the complex systems framework can find a broader application in film analysis and be developed and applied in films and film constellations different from the ones I analyzed here, this is a question that future research could answer. The identification of links between specific textual characteristics and complex systemic functions I made in this dissertation will hopefully be useful to other researchers who are interested in exploring the organizational dynamics of 'non-linear' fictional films and possibly of other kinds of texts. These dynamics transcend the level of individual films, and reach out to their environment, which also becomes, in a process of reciprocal causality between the micro and the macro-level, more complex. The existence of emergent dynamics shows texts not just as cultural products but as living cultural organizations, that determine and transform the cultural structures and the media that host them.

Having identified the links between textual modes and characteristics of complex systemic processes, I took a first step towards drawing a framework for the analysis of complex films. I did not however configure a specific complex systemic methodology for the analysis of individual complex films. This would be a second step worth pursuing in the future. The self-referential moments in a film's plot and the agents' interactions could be isolated in their units and analyzed more systematically in the patterns they form. In this respect, film analysis could borrow from the complex systemic epistemology terms and methods in order to build diegetic models that follow the units and their aggregates and better capture the reciprocal causality between different levels of diegetic organization (similar to the way agent-based approaches to complex systems do). With an eye to the increasing collaborations between film and media theorists and computer scientists, it seems reasonable for media theory to develop adequate tools and models and take advantage of the capability of computer simulations to follow collections of many heterogeneous elements and to foresee, identify or develop further their patterns. Then the nonlinear links between individual films, film tendencies and (changing) cinematic practices, as well as the reciprocal determination of these levels, could be explored, with potentially fascinating results for media and cultural studies.

By posing the question 'before or beyond narrative', already in the title of this dissertation, I do not imply that there is a need to make an exclusive choice between the two,

in an 'either-or' way. Rather, the two options, as I see them, contain and generate one another. Complex films are incomplete and open-ended narratives, as 'before' narrative would imply, but also formations that include and surpass narrative, multiplying it and miniaturizing it (as in *Gomorrah*), driving it out of control and observing it from a mocking distance (as in *Burn After Reading*), making it one instant in an ongoing loop (as in *The Final Cut*), and ultimately moving 'beyond' it. Before and beyond also refer to different but connected levels of analysis, the one of individual films and the other of film networks and networks of practices that constitute cinema as an institution. The complex systems framework allows us to address both levels, and most importantly, the emergent dynamics and feedback loops that connect them.

The narrative structure and analysis is of course still applicable to a large number of texts, and is also able to partially address the cinematic complex narratives that have been my focus here; however, narrative analysis has a blind spot, which becomes visible only from a different standpoint. It does not capture the other kinds of distributed and 'dissipated'—in Prigogine's terms—structures that contemporary society and its cultural products form, structures which follow a different kind of 'order' than narrative does, and envelop narrative in their own self-organizational drift.

I would situate complex films and complex cinema both before *and* beyond narrative, in the space of a temporal fold that every observation creates, as Luhmann would have it. In complex systems, the spatialization of time through the doubling moment of observation makes possible a temporalization of space. With every self-observation, a certain section of the past is selected to relate to the present, and the resulting organization also determines the future selections that a system will make, the paths that it will draw. The fragmented, recomposable and spatialized films of the complex narrative tendency mirror cinema's own recomposable—at the current moment of observation—history. Cinema now 'remembers' its pre-narrative past (since narrative was established as a filmmaking form in the years between 1907 and 1909) and prepares for itself a post-narrative future. It is a similar observation that complex films, the units of the complex organism called cinema, fractally produce and also demand from their viewers: by thematically playing with the idea of surveillance they formally create instances of distributed and multiplied observation. And by systemically observing their own constitution as narratives, they already situate themselves beyond it.

Four years ago, starting this dissertation without having the faintest idea about complex systems theory, and wanting to study contemporary films as cultural formations and not only as films, I decided to first pick certain films and follow their texts closely before linking them to a specific theoretical framework. I tried out many diverse theories, from philosophy to sociology, in order to approach theoretically the cultural function of 'complex'

films, but none of them seemed to fit all the cases; there was always something missing. Without abandoning the films I initially selected as cases, even when the theories I was trying out were failing, I feel like I gradually also witnessed an emergent process. These films seemed totally different at first, and the space they occupied discontinuous. However, the more I engaged in their plots, the more their dynamics showed me a common space, a pattern which all these cases form. The selection of the films was counter-intuitive; not only had these films not been classified under the complex narrative tendency by film theorists, but also they did not seem, at first sight, able to fit in it. However, considering the exceptions more illuminating for the rule than its 'canonical' cases, I believe I stayed truthful to these marginal cases, relating them together but not dissolving them into a unity, and connecting them with the broader cultural tendency of complex narratives in cinema without suppressing their differences from it. This, after all, is what (their) complexity is about: to distinguish some units, follow their aggregation in space and time, and to be ready to capture the pattern before it dissolves to new and unforeseeable shapes.

NOTES

[1] See *Film Criticism*'s special issue "Complex narratives" edited by Janet Staiger (fall 2006). For an overview of the wave of complex narratives in cinema and the theories about them see Simons 2008.

[2] Complex narratives have a long history in literature. Narrative "complexity" has been discussed by literary critics in relation to texts coming from entirely different backgrounds: the tradition of 'metanarration', extending from Cervantes (*Don Quixote*, 1605, 1615) and Lawrence Sterne (*Tristram Shandy*, 1759) to Italo Calvino, the literary modernism of, among others, James Joyce, Marcel Proust and Virginia Woolf, or the late modernist movement of *nouveau roman*, are among the most oft-cited sources of complex narratives.

[3] Other oft-cited examples include: *Twelve Monkeys* (Terry Gilliam, 1995), *Lost Highway* (David Lynch, 1997), *Sliding Doors* (Peter Howitt, 1998), *Fight Club* (David Fincher, 1999), *Code Unknown* (Michael Haneke, 2000), *Donnie Darko* (Richard Kelly, 2001), *The Others* (Alejandro Amenábar, 2001), *Mulholland Drive* (David Lynch, 2001), *Irreversible* (*Irréversible*, Gaspar Noé 2002), *21 Grams* (Alejandro González Iñárritu, 2003), *Babel* (Alejandro González Iñárritu, 2006), etc.

[4] Complex narration is not new in cinema either. Unconventional and 'complex' ways to present stories have proliferated in the various modernist avant gardes, the new waves of the 1960s and 1970s, the art film tradition, and even 'classical' Hollywood films in certain historical eras of "narrative experimentation" (e.g. Orson Welles' *Citizen Kane*, RKO production, 1941). Besides Welles, other contemporary directors have been considered as pioneers of complex narratives in cinema: Alfred Hitchcock (*The Trouble with Harry*, 1955), Alain Resnais (*Last Year at Marienbad* [*L'année dernière à Marienbad*], 1961), Louis Buñuel (*The Obscure Object of Desire* [*Cet obscur objet du désir*], 1977), and Krzysztof Kieślowski (*Blind Chance* [*Przypadek*], 1981) are some oft-cited names. The work of these directors has been recently discussed through the lens of the contemporary complex film tendency: for Welles and Hitchcock, see Bordwell 2006: 74; for Resnais, see Alan Cameron 2008: 34; for Buñuel, see Marsha Kinder 2002; for Kieślowski, see Cameron 2008, Bordwell 2006 and Ruth Perlmutter 2002.

[5] Bordwell refers to three such eras: 1940-1955, mid-1960s – early 1970s and mid-1990s until today (see Bordwell 2006: 72-73).

[6] Two peaks in the debate about these new forms of cinematic narration took place in 2002 and 2006. In 2002, the articles on forking-path narratives that appeared in *Substance#97* (Bordwell's and Branigan's contributions) opened a debate on the level of complexity that narratives can afford. In 2006, apart from the publication of David Bordwell's *The Way Hollywood Tells It*, which contained an extensive discussion of "puzzle" and "network" films, two special issues dedicated to this tendency appeared in the fall of the same year: *Film Criticism*'s "Complex narratives" edited by Janet Staiger and *The Velvet Light Trap*'s "Narrative and storytelling". More recently, in 2009, the edited volume *Puzzle Films* (Warren Buckland) continued the debate and expanded culturally the scope of "complex storytelling" with the addition of many case studies from Asian cinema.

[7] Several *avant-garde* literary movements, with the most striking example being perhaps that of *nouveau roman*, have relied on anti-novelistic and narratively unconventional ways of structuring stories, as prominent literary critics have discussed (see Kermode 2000: 22). The difference of the contemporary "complex narrative" tendency from such *avant-garde* experiments is the popularization and cultural pervasiveness that the traditionally unconventional means of narration now gain.

[8] Post-classical narratology incorporates into the study of narrative influences from post-colonial theory, gender studies, cognitive psychology and philosophy, and gives more emphasis to the medium-specificity of narrative. For recent works that revise the classical narratological tradition see the book series *Frontiers of Narrative* (University of Nebraska Press, edited by D. Herman) and the series *Narratologia*, by the German publisher Walter de Gruyter, edited by Fotis Jannidis, Matías Martínez, John Pier and Wolf Schmid.

[9] According to Kenneth Bailey (1994: 121), the main currents in systems theory have been four: cybernetics, information theory, general systems theory (GST) and nonequilibrium thermodynamics (established through the work of Ilya Prigogine on entropy). According to Melanie Mitchell, the complex systems research has its predecessors in all those theoretical and scientific attempts (in cybernetics, GST, biology—with Humberto Maturana's and Francisco Varela's theory of "autopoiesis"—and physics, with Hermann Haken "synergetics" and Prigogine's "nonequilibrium systems") to find common and universal principles applying to different systems (see Mitchell 2009: 297-298).

[10] For a detailed overview of the precursors of systems theories in Russia of the end of the 19th and beginning of the 20th century, see Tikka 2008:72. Tikka also points to the German organicism of the 1920s as a movement that anticipated systemic self-organization in biology, with a main representator the zoologist Jakob von Uexküll (2008: 73-75).

[11] For the epistemological background of simulation, see Hartmann 1996. For the use of simulation in complex systems modeling, see Law and Kelton 2000.

[12] A constitutive complex is, according to Ervin Laszlo (1972), one that exceeds the mere addition of its parts, acquiring a functional role of its own, and is thus differentiated from a summative complex.

[13] IMDb has been a popular object of research in several studies of systemic (network) complexity in the 2000s (indicatively see Ravasz and Barabási 2003).

[14] Narratives have been thought of in the context of complex systems in the past, and in this respect the work of Hayles in the context of literary texts has been significant. In film theory, this direction has not been pursued as systematically, although there have been theorizations of groups of complex films with an eye to complex systems theories (this is the case in some of Bordwell's writings and also in Wendy Everett's conceptualization of the 'fractal' films). Jan Simons has linked the group of contemporary complex narratives in cinema with narrative as a complex system (2008). Allan Cameron has also referred to the play between contingency and order in his 'modular' films, although he associates this interplay with modernism and not with complexity theory (2008: 26). This dissertation, although posing certain counter-arguments to the association of narrative with complexity, would not have been

possible if the aforementioned but also other scholars had not already opened up a 'space' for the connection between texts and complex systems.

[15] Characteristic of this tendency is Bordwell's discussion of multiple-draft films in his article "Film Futures", which turned the issue of complex films into a point of controversy in contemporary film theory.

[16] Emphasizing their complex function I do not deny the existence of—an often overt— thematic influence by complexity theory on contemporary films. This influence has been stressed by other theorists as well. For instance Wendy Everett provides examples of scenes that directly refer to chaos theory, in films such as *Free Radicals*, *Magnolia*, *Amelie*, *The Butterfly Effect* (see Everett 2005).

[17] Taglines retrieved from IMDb. http://www.imdb.com/title/tt0364343/taglines.

[18] IMDb mentions Vancouver and Berlin as filming locations.

[19] 'Hakman' literally means 'cutter' in German.

[20] According to the *Classic Encyclopedia* (online encyclopedia based on the 11th edition of the Encyclopedia Britannica), a "sin-eater" is "a man who for trifling payment was believed to take upon himself, by means of food and drink, the sins of a deceased person. The custom was once common in many parts of England and in the highlands of Scotland, and survived until recent years in Wales and the counties of Shropshire and Herefordshire."

[21] This happens in *The Final Cut*, but also in various other films, such as *The Sixth Sense* (1999), *Donnie Darko* (2001), *Cypher* (2002), *Casshern* (2004) etc.

[22]As cinema foreboded at the expiration of the 19th century, the objectification of technology does no longer seem manageable. Our time and our perception is cyborgian. The 'machine' is not a graspable thing anymore, it is everywhere and nowhere, but most importantly, it is inside our bodies, it is us, as Donna Haraway would say (see Haraway 1991).

[23] José van Dijck finds that *The Final Cut* "coveys a philosophical reflexivity based on Deleuze's contention that cinema is not about concepts, but is itself a conceptual tool" (van Dijck 2008). My intention is to use the film as a conceptual tool to rethink the notion of reflexivity.

[24] In the 1990s, with a scholarship by the Fares Foundation, Naim began his studies at the Emerson College, Boston. *The Final Cut*, with a total domestic gross of $551,281 (according to the Box Office Mojo database, see http://boxofficemojo.com/movies/?id=finalcut.htm), had a rather disappointing career at the box office, for a Lionsgate production. It was however nominated in a number of festivals and awarded the prize for "best screenplay" at the Deauville Film Festival, 2004.

[25] *Grand Theater* is a documentary about the Lebanese Civil War.

[26] See also the chapter "VR from Cimnemonics to Digitime" in Stewart 2007: 164- 203.

[27] The faded sepia colors of the scene, as well as its placement in the beginning of the film before the credits, give some indication that it might be temporally situated in the past. The scene thus temporally anchors the film to the past and prepares the viewer for a return to it.

[28] In this respect, the opening of *The Final Cut* brings to mind the self-referential opening of the classical Hollywood films, which, according to Elsaesser and Buckland, suggests a *mise-en-abyme*

"condensation" of the whole film, as well as a "manual" for the viewer's interpretation. (2002: 47). However, in *The Final Cut*, the opening is as much guiding as misguiding.

[29] In his book on modular narratives Cameron emphasizes the elements of redemption in the films *21 Grams* and *Irreversible* (2008: 35). Both Cameron and Sean Cubitt, through the latter's book *The Cinema Effect* and the chapter "Infernal Affairs and the Ethics of Complex Narrative" that they co-wrote (in *Puzzle Films*, 2009), have set the basis for a more elaborate ethical critique of the puzzle/complex film tendency.

[30] The moment when Alan runs away from the 'scene of the crime' and we watch him passing in front of the wall where his name is written with big capital letters, could be seen from a Lacanian perspective as the 'symbolic birth' of the character.

[31] *Johnny Mnemonic* is a film based on the homonymous cyberpunk novel by William Gibson.

[32] According to Stewart, the implant has already a totalizing effect upon consciousness, lived experience and memory: "With no lag time between perception and desire, with all impressions instantaneously retraced in process, such an omnivorous totality has […] excluded from its transcriptive register anything we would really call 'memory' in the first place." (2006: 189)

[33] Retrieved from http://www.investor.amctheatres.com/releasedetail.cfm?releaseid=144188

[34] For the same reason Charles Ramirez-Berg excludes from his taxonomy of alternative plots science fiction films such as *The Matrix*, because he finds that their non-linear temporality is genre-dependent, and fundamentally remains a linear quest for truth (or "for deciphering the mystery") by a single protagonist, without allowing for alternative interpretations (2006: 11-12).

[35] This digital recording eliminates, according to Stewart, the time-lapse characteristic of filmic temporality (linked to the virtualization of the present, according to Deleuze) and leads to the alienation of experience and self-consciousness.

[36] In philosophy, reflexivity has been associated with self-reflection as a generative condition of self-consciousness and subjectivity itself. Since Descartes's *cogito ergo sum*, the subject's critical reflection is the foundation of its relation to the world. However, the "reflexive" turning of the subject upon itself, making itself the object of its own reflection, became more explicitly, after Kant and through German Idealism (Fichte, Schelling, Hegel)—and especially with Hegel and Nietzsche—a procedure not presupposing but constituting subjectivity (Stern 2000: 114). Michel Foucault (1984: 41) considered reflexivity inherent to modernity's *ethos*, which requires from the subject of reason to subject itself to this very reason. According to Foucault, reflexivity, as soon as it embraces the unthought and "articulates itself upon it", is not compatible with Enlightenment and its project (Foucault 1970: 325). This happens because reflexivity shifts the focus on issues of relativity, difference and the "unthought", and constitutes, as scholars like Hilary Lawson have pointed out, "the postmodern predicament" (Lawson 1987). With the circular dynamics it develops, reflexivity becomes, as Dick Pels notes, "a standing critique of linear narratives, both everyday and scientific, which rely upon an objectivist ontology and a conventional logic of representation". The result is "a radical

uncertainty in all our accounts of the world and in all our critical maneuvers in the agonistic space of science" (Pels 2003: 177).

[37] Anthropology and sociology were significantly affected by the impact of reflexivity in the 1970s and 1980s. Particularly these fields tried to render reflexivity into a methodology of research. For the reflexive methods in anthropology see Scholte 1972, and for a critical perspective on them see Salzman 2002. For the discussions over reflexivity in Sociology of Scientific Knowledge (SSK) and its kin field of Science and Technology Studies (STS) see the work of Alvin Gouldner, considered as the founder of "reflexive sociology". In the 1980s Steven Woolgar and Malcolm Ashmore made important contributions in the field of SSK with their declaration that "the exploration of reflexivity is the next natural development of the relativist-constructivist perspective in the social study of science" (Woolgar and Ashmore 1988: 7). Ashmore's work *The reflexive thesis: Wrighting sociology of scientific knowledge,* published in 1989, re-reads the whole recent history of SSK (since the 1970s) through the scope of reflexivity, making links to similar concerns about reflexivity in other fields. Ashmore's book furthermore contains an "encyclopedia of reflexivity", as an attempt to clarify misunderstandings about this complicated term. In the 1990s Barry Sandywell's large-scope work *Logological Investigations* (1996) connected reflexivity not so much with postmodernism, as with the phenomenological, hermeneutic and praxiological traditions. Sandywell's conception of 20th century reflexivity has affinities with Scott Lash's "hermeneutic reflexivity" (1994).

[38] This iterative process tends to be triggered by first-degree self-reference itself. In philosophy, the self-referentiality of the self's constitution is a paradoxical process which has troubled many thinkers. Dieter Henrich's account of Fichte's theory of self-reference reveals a "double aporia": "The double aporia besetting the theory of reflection […] is that, first, the subject must somehow exist prior to the reflexive turn in virtue of which it becomes its own object, but this undermines the assertion that it is reflection itself that constitutes subjectivity; and secondly, in order for the subject to recognize itself as the object of its reflective act, it must presuppose a knowledge of itself that is supposed to be explained by the theory of reflection" (Stern 2000: 114—referring to Dieter Henrich's "Selbstbewußtsein. Kritische Einleitung in eine Theorie", 1970 and "Fichtes ursprüngliche Einsicht", 1970).

[39] Genette's narratological model is considered to be one of the most refined in the study of narrative. It discriminates between three basic entities: story, narrative and narration (*histoire – récit – narration*) and four analytical categories: mood, narrating instance, level, and time.

[40] The debate over the role of the narrating instance in narrative dates back to proto-narratological concerns such as the one expressed by the critics Friedrich Spielhagen and Käte Friedemann. The former declared, anno 1883 (*Beiträge zur Theorie und Technik des Romans*), that "the ideal narrative never alerts the reader to the ongoing process of narration" while the latter (*Die Rolle des Erzählers in der Epik*, 1910) considered the narrating instance an indispensible feature of narrative (Meister 2010).

[41] Here 'purity' is not meant as qualitative category; it rather refers to the linguistic 'autonomy' of narrative in relation to other modes of linguistic expression.

[42] According to Nünning's classification (as summarized by Monika Fludernik, 2003: 4), metanarrative remarks in different media include: "stage directions, references to previous or later sections of narrative, and self-reflexive passages – these all invoke the narrator figure and the act of narration as well as the very process of narration."

[43] Christian Metz, drawing on Benveniste, related the absence of self-referential discourse in (classical) film with ideology (when the purity of *histoire* gives the impression of objectivity) and employed psychoanalysis to explain the workings of filmic enunciation (see Metz 1985).

[44] Early "rube films", such as *Uncle Josh at the Moving Picture Show* (Edwin S. Porter/ Edison, 1902), displayed self-reflexivity, most of the times involving situations of "film within a film", as Elsaesser points out (2006). Elsaesser considers rube films symptomatic of a transition from cinema of attractions to cinema of narrative integration, but also as characteristic illustrations of his expanded notion of diegesis, which incorporates the deictic dimensions of discourse, still apparent in early cinema, with the temporal and spatial markers of narrative.

[45] Barthes' text has also been influential for the theory and practice of hypertext literature; see the "Electronic Labyrinth" project (Keep, McLaughlin and Parmar 1995).

[46] In addition, Ruby mentions that (self-)reflexivity is not always a product of the "intentionality and deliberateness" of the makers, mentioning examples of "accidental reflexivity" in documentary films, which he regards as "narcissistic", because of the lack of any intention to 'arouse' the spectator's consciousness in them.

[47] Lash here refers to Umberto Eco's *A theory of semiotics*, 1976.

[48] Here there is an echo of the distinction between the "two avant-gardes" that Peter Wollen made in the 1970s, one represented by the—mostly New York-based—"co-opt" movement and mainly focusing on the "play of the signifier" remaining indifferent to signification, and the other by European modernist filmmakers such as "Godard, Straub and Huillet, Hanoun, Jancso", who remained to some extent devoted to a 'mission' of constructing a new cinematic language, which would break with older bourgeois chains of signification but still maintain a dialectical relationship between signifier and signified. See Wollen 1975.

[49] Cameron, who finds that contemporary "modular" narratives in cinema display mainly "an analytic perspective on *time*" rather than "an analytic perspective on *narrative*" (2008: 25), appears reluctant to regard the traditional notion of self-reflexivity as a key feature of these films. He thus finds that "the precursor to the contemporary modular narrative is not so much the self-reflexive games of such French New Wave directors as Jean-Luc Godard, but more the contemporaneous 'New Cinema' of Alain Resnais" (1998: 34). However, the play with time in films such as *Last Year at Marienbad* is also self-reflexive in a metanarrational sense.

[50] In his *Figures III*, parts of which compose the translated book *Narrative Discourse*, Genette made a complex analysis of a paradigmatic complex novel, Proust's *À la recherche du temps perdu.*

[51] As Frank notes (1978: 278), more developments in the coming decades after WWII (especially the influence of linguistics and structuralism) attracted the attention of subsequent critics and narratologists on how the relations in a text are spatial rather than temporal.

[52] Ludwig von Bertalanffy in his *General system theory: Foundations, development, applications* (first published in the U.S.A. in 1969) refers to the "systems science" of his times as being centered in "computer technology, cybernetics, automation and systems engineering" (2001: vii).

[53] Steven J. Bartlett has been the first editor who, together with Peter Suber, contributed to the publication of an interdisciplinary historical overview of the concept of reflexivity: *Self-reference: Reflections on reflexivity* (1987).

[54] The most significant inconsistencies appeared in the gulf of mathematical set theory as paradoxes, just a few of the most well-known of which are Cantor's paradox (1899), Russel's paradox (1901), and the Zermelo-Konig paradox (1905). The culmination of reflexive undermining of the "formal deductive systems" came, according to Bartlett (1992: 6), with Godel's "incompleteness theorem" (1931), and the research that it triggered that brought about even more 'proofs' of undecidability.

[55] The Macy Conferences on Cybernetics, sponsored by the Josiah Macy Foundation, took place on an annual base between 1946 and 1953, and many prominent scientists of the period took part in them, like Claude Shannon, Norbert Wiener, John von Neumann and Warren McCulloch (Hayles 1999: 7). The development of systems theoretical thinking in the specific time period and geocultural area can be traced through the history of the conferences.

[56] Other participants in the Macy conferences had also made contributions towards the same direction; for instance psychoanalyst Lawrence Kubie suggested to combine systems theory with the psychoanalytic approach to language (Hayles 1995: 84).

[57] Hayles is critical towards this shift in the conceptualization of reflexivity, which, as she argues, came at a high cost: the "erasure of the environment", reducing it to the status of a medium with which the organism effectuates "structural couplings". This is a point of criticism that Hayles addresses to Luhmann's epistemology too, which is based on Maturana's theory of autopoiesis. Hayles implies that what Maturana started (a tendency of systemic closure and erasure of environment) continued in the work of Luhmann. The closure of the autopoietic theory downplays, according to her, the importance of the "living systems' explosive potential for transformation" (Hayles 1999: 147). In this way, the theory might gain in epistemology, but is not capable of accounting "for dynamic interactions that are not circular in their effects" (*ibid*), that is, that do not have as their only goal the homeostatic preservation of the organism's structure. According to my opinion, this criticism is partially valid: indeed Luhmann's systems theory is not yet influenced by the complex systems developments in other fields like physics and thermodynamics. It also tends to exclude the not-meaningful information as "noise" (see Leydesdorff 2000: 277, 286). Still, the criticism does not do full justice to Luhmann's approach, because Luhmann's theory contradicted the sociological Parsonian model of social systems (based on equilibrium), and emphasized the increasing complexity and thus evolution that a system achieves through structural coupling. As Kenneth Bailey suggests, in the context of cybernetics and

systems theory, Luhmann's theory of social systems can be seen as an attempt, parallel to those of Ludwig von Bertalanffy and Ilya Prigogine, to couple the second law of thermodynamics (increase of entropy) with organizational complexity (see Bailey 1994: 150).

[58] Systems theory had already a background in sociology, mainly through Talcott Parson's functionalism. Although Luhmann has been a student of Parsons, the latter's (Parson's) account of social systems emphasized equilibrium and its 'automatic' restoration in social systems. For a discussion of the differences between the Parsonian and the "new" systems theory in sociology (under which Luhmann's work can also be classified)—see Bailey 1994.

[59] Hayles notes that Maturana distinguishes between the functional circularity of systems in themselves and the inferences that an external observer (scientist) makes about them, studying them in the context of their environment. In Maturana's epistemology, reflexivity seems to rely on the self-awareness of the borders between the observer and what is being observed, borders that also define the object of study (organism) as separate from the scientific subject (scientist) (Hayles 1999: 142).

[60] In order to provide an answer to "the Kantian quest for the condition of possibility of experience", traditional ontology had to invent the subject-observer (Luhmann 1995b: 50). On the contrary, in social systems theory, there can be no systemic Subject, observing itself from a transcendental vantage point. The subjective moment becomes duplicated, because the subjective pole is already induced as being observed by another system——which need not be only human but also animal, machinic, social… (Katti 2002: 63); and the only sense of individuality that can remain lies in the functioning of systems as "closed, circular, self-referential network[s]" (Luhmann 1990: 18).

[61] In his book *The Reality of the Mass Media* (2000b—originally published in German in 1996 by Westdeutscher Verlag), Luhmann emphasizes the systemic processes involved in the way media double and construct reality.

[62] Here, meaning has a systemic sense. It has to do with a selection according to the system's organization and internal coherence, rather than with a rational form of intelligibility that the common sense of the word meaning implies.

[63] *Social Systems* was originally published in German in 1984, as *Soziale systeme: Grundriß einer allgemeinen theorie* (Frankfurt: Suhrkamp Verlag).

[64] In Bal, *fabula* (defined as "a series of logically and chronologically related events that are caused or experienced by actors", Bal 1985: 5) is distinguished from 'story', which is the particular way in which the *fabula* is presented through a text. Bal here combines Genette's distinction between story and discourse (*histoire*/*récit*) and the earlier one by the Russian Formalists, between *fabula* and *syuzhet*.

[65] By contrast, Katherine Hayles stresses the difference between narratives and autopoietic systems, having particularly in mind Maturana's and Luhmann's theories. According to her, narrative is a contextual form of meaning-making, which always exceeds the "closed" borders of autopoietic systems, and implies the existence of a future goal and a sense of past and present that systems do not have (see Hayles 1995). Nonetheless, Hayles finds more connections between narratives and other, not autopoietic, strands of systems theory, such as chaos theory (see Hayles 1991).

[66] Basal self-reference is the self-referential observation upon the way a system selects its elements in a contingent way, out of the unorganized and noisy complexity of its environment.

[67] In his 1966 article "*Reflexive Mechanismen*" Luhmann "introduced the distinction between reflexivity and reflexion depending on whether an act refers to another act of similar kind or to the system which it is part of respectively" (Rossbach 2000: p. 11 notes). Rossbach indicates pages 99-100 in Luhmann's untranslated article.

[68] As Luhmann notes, "Here the self that refers itself is not an aspect of the distinction but a *process* constituted by it" (1995a: 443).

[69] Every selection made by the system—which can be binary codified in relation to the options that were not selected—feeds back upon the system becoming a new selector and making the system more complex (see Leydesdorff 2000: 286). Reflexivity is related to feedback but also to "feed-before" mechanisms (see Ciborra 2004).

[70] Apart from Luhmann, Francisco Varela and mathematician Louis Kauffman have also developed the notion of re-entry, extending it into a "calculus of self-reference". See Kauffman and Varela (1980).

[71] "A distinction discriminates; its mere occurrence creates a difference. To become relevant as form, the occurrence must be observed (retrospectively by the same system, simultaneously or later by another system); only then does the unity of the distinction become apparent as the blind spot that enables observation. This unity remains invisible while the distinction is used—this holds for all distinctions. It is as indisputable as our certainty about the world, a certainty based on inaccessibility." (Luhmann 2000a: 32)

[72] Here Luhmann's conceptualization of reflexive temporality could be paralleled to Augustine's idea of distensio (a mode of temporally distended attentiveness, explained in Augustine's *Confessions*), which Paul Ricoeur applied to the analysis of narrative—as well as Frank Kermode and Joseph Frank did earlier, the latter in the context of his theory of the "spatial form of narrative" (Frank 1977: 246). Ricoeur finds that in Augustinian time, as opposed to Aristotelian time, "the future and the past exist only in relation to a present, that is, to an instance indicated by the utterance designating it. The past is before and the future is after [not by means of movement from cause to effect, as in Aristotle, but] only with respect to this present possessing the relation of self-reference, attested to by the very act of uttering something" (Ricoeur 1988: 19). As Haridimos Tsoukas and Mary Jo Hatch note in their narrative approach to complexity, *distensio* creates the experience of temporality, when past and future are bridged in the present moment: "it is the relationship between expectation, memory and attention forged by *distensio* that gives us the experience of time" (Tsoukas and Hatch 2001: 1005). However, Ricoeur finds that "Augustine's attempt to found the measurement of time in the distension of the mind alone" (15) does not suffice to solve what Ricoeur calls the "aporia of temporality", as the latter needs a combination of the human and the cosmological time (14), which narrative poetics effectuate, "between internal time-consciousness and objective succession" (22).

[73] Luhmann notes that every event is a self-referential element because it reflexively refers to other events (1995a: 509n).

[74] Luhmann stressed the factor of contingency in systems. As he writes, "action cannot be temporalized, cannot be anchored to a specific temporal point, without a certain component of surprise, without deviation from what is factually fixed. Therefore without an aspect of surprise there would be no structural formation because nothing would happen for other things to link onto." (Luhmann 1995a: 288)

[75] Joel and Ethan Coen refer to these "two worlds" in their interview at about.com guide (see Bibliography). Although it received mixed critiques, *Burn After Reading* was a financial success, and became "the second highest-grossing [Coen] film to date" (Doom 2009: 174), with a $37 million budget, and over $60 million gross.

[76] Commenting on the music score by Carter Burwell in *Burn After Reading*, Joel Coen mentions: "We wanted something big and bombastic, something important sounding but absolutely meaningless" (Coen 2008).

[77] According to Edward Branigan, "surface" POVs are point-of-view shots representing what the character sees. Borrowing the distinction between intenal and external focalization by Genette, Branigan notes that surface POVs form part of *internal* focalization, but they are contrasted to other, "deep" types of it, which reproduce the character's mental state (see Branigan 1992: 112, 179). In Branigan's classification, internal focalization differs from the external one; the latter is achieved through eyeline matches (shots following the direction of the character's look and establishing continuity through reverse shots), and not through POVs (*ibid*: 179). Thus, all POVs are instances of internal focalization.

[78] Sandy's plotting, concealed in the most part of the film, becomes disclosed only near the end. Her secret plan, however, has been one of the most important for the cultivation of *Burn After Reading*'s paranoid atmosphere.

[79] The comment, reproduced from prejudicemadeplausible.wordpress.com, appears under the title "The Coens' funniest film since 'The Big Lebowski'" in the *IMDb user reviews for Burn After Reading* (posting date 12 September 2008).

[80] The emphasis upon positive feedback is what differentiates, according to Maruyama, the first from the "second cybernetics".

[81] In this context, Robert Detmering hints at the importance of informational networks in *Burn After Reading* and considers the film as a useful example for information literacy education. According to him, "*Burn after Reading* becomes a satire of information literacy and the political information networks that dictate what can be known and by whom" (Detmering 2010: 273).

[82] The same pattern on zooming-in and out of the globe is found also in other films, such as *Men in Black* (Sonnenfeld 1997) and *Night on Earth* (Jarmusch 1991)—with the latter offering a lower-tech version of this shot.

[83] Although the role of causality in narratives is very important, for some narratologists it is not the defining characteristic of narrative. Coste maintains that "nontransactive narratemes", which do not involve a change of state brought by a subject to an object (or another subject), are "narratemes of

simple 'becoming'" and do not need an "external agent of change" (Coste 1989: 42). Change may as well be internal, without being non-narrative. Thus, elements that for other narratologists are not included in the narrative, such as descriptive texts or passages within a text, or "nontransactive narratemes" and "descriptemes" for Coste, are still parts of the narrative, as "they make use of some temporal coordinates without necessarily inferring any form of causality" (*ibid*: 51). This view, however, is already oriented, through the notion of "narratemes", to narrative pieces or units instead of narrative as a whole.

[84] For an analytic description of these five stages through examples such as *The Swan-geese* fairy tale (also analyzed by Vladimir Propp) and Henry James's *In the Cage*, see Todorov 1971.

[85] With regard to the static and dynamic nature of motifs, Todorov draws on the Russian Formalist Boris Tomashevsky.

[86] Berg notes that, although Robert Altman's *Nashville* (1975) has been considered as a characteristic—and pioneer—example of the revival of this type of plot, its origins are to be found in the big studio practices of the 1930s. For instance, MGM launched the trend of 'all star casts' in multiple-character films such as *Grand Hotel* and *Dinner at Eight*. According to film theorist Paul Kerr, these multiple-protagonist films continued being produced after the war in many different countries, from Japan to Mexico, and became again popular in the mid-1990s (Kerr 2010: 38). Other authors give more emphasis to the differentiation of contemporary complex films from older 'ensemble' films, which they consider more traditional. For instance, Evan Smith (2000) points at contemporary complex films that contain fragmented "thread structures", as their characters do not necessarily form part of the same "single dramatic journey", but have independent trajectories.

[87] Kerr has also referred to network narratives as "tales of interlocking lives and converging fates" (2010: 38). According to him, the popularization of this narrative strategy is relevant to the transnational networks imposed by the fiscal strategies of film production, and reflects the cross-cultural and cross-national mobilization of directors (many of whom belong to an emerging 'social class' of expatriates), crew, and funds. He considers Alejandro González Iñárritu's film *Babel* as a paradigmatic case of this filmic tendency.

[88] Convergences and connections are sometimes technologically mediated and sometimes not. Wesley Beal, who finds network narratives to be "the narrativized theorization of connectivity", or a way of "narrating the network", distinguishes two axes along which this connectivity becomes manifest: "a characterological axis that sketches connectivity along unmediated links of human relationships" and "the material axis, which sketches interrelationships according to concrete systems—the internet, the radio, the railroad, etc." (2009: 405). We saw both these axes being present in *Burn After Reading*, where the lives of the individual characters get entangled through 'acquaintances of acquaintances' or through technological means such as a CD, and the internet.

[89] In *Physics II 3* and *Metaphysics V2* Aristotle defined four categories of causes of change in nature: the material cause (the matter of an object), the formal cause (its shape), the efficient cause (the agency

that triggers a change of state in an object), and the final cause (the end-state of the change, or its purpose).

[90] Following a categorical form of organization, a film provides different examples/categories of the same subject.

[91] Branigan differentiates narratives from heaps, considering the two as different types of data organization: "The film's events are linked together [as "focused causal chains"] by probability whereas elements of a heap or a catalogue are all equally likely with no single element necessary" (1992: 26).

[92] The type of communication to which I am referring here is the systemic communication of the film at the level of its components, and not the narrational "communication" between narrator and narratee through the film's text (which has to do with the amount of information that is shared with the viewers).

[93] Branigan points out that it is information's disparity that makes narrative possible. In a world where all information is "equally available" there is no need for narrative (1992: 66). He describes narratives in dynamic terms, as "a rapid oscillation in the balance of knowledge" between viewer, focalizer and narration (81). However, communication that makes a system more knowledgeable as a whole than it is when its units are taken independently, does not necessarily have to be called narrative, especially when the latter refers to a type of cognitive organization which boils down, according to Branigan himself, to a "cause-effect chain of events with a beginning, middle, and end".

[94] "Agent-based" simulations of complex systems, also referred to as "multi-agent approaches", are used in the study of natural, economical and social systems. Referring to such simulations, computer scientist Pierre Marcenac distinguishes between "micro-agents" who lack knowledge of global constraints, "medium-agents" who model the interactions of micro-agents and who feed back (through a process called "back-propagation") upon the micro-agents's behavior, introducing constraints to it, and lastly, "macro-agents", who observe self-organization and "generate" the medium-agents that model it (1998).

[95] Strong emergence holds that the new properties of a system are not connected to the system's previous states but rather consist in ontologically novel properties. Thus, although it shares the attributes of "supereminence" and "downward causation" with weak emergence, strong emergence denies the existence of any kind of link between "the aggregation of the micro-level potentialities" and "the supervenient downward causal powers" upon them (Bedau 1997: 377). However, as Jaegwon Kim stresses (2006: 200-201), talking about human consciousness as an emergent property (based on the complex interactions of the brain's neural network), this negative—because of the absence of causal links—definition of irreducible, "strong" emergence tells nothing about what emergence is, and about the relations that connect the different levels with each other. Thus he poses the challenge for the researchers of emergence "to show that emergent properties do not succumb to the threat of epiphenomenalism, and that emergent phenomena can have causal powers vis-à-vis physical phenomena."

[96] Chalmers (2006) has suggested the term "intermediate emergence" to describe systems "in which high-level facts and laws are not deducible from low-level laws (combined with initial conditions)" and in this case, a change of level is necessary in order to understand the emergent procedure, a level in which combinations not deducible from the basic laws but only effectuated with a change of initial conditions occur.

[97] There is also critique to this 'synthetic' approach. It has been argued that simulation already creates a somewhat isolated system in the beginning. According to Katherine Hayles, similar bottom-up approaches in the field of Artificial Life remain reductionist: "In place of predictability, which is traditionally the test of whether a theory works, they emphasize emergence. Instead of starting with a complex phenomenal world and reasoning back through chains of inference to what the fundamental elements must be, they *start* with the elements, complicating the elements through appropriately nonlinear processes so that the complex phenomenal world appears on its own" (Hayles 1999: 231-232). According to Hayles, the "analytic approach" of breaking down reality into more and more simple constituent parts that could be treated mathematically, in Artificial Life is supplemented by a "synthetic approach", according to which the system is able to generate "complexities" spontaneously, in a procedure of emergence (234). However, both the analytic and the synthetic aproach, Hayles maintains, are just the two sides of the same coin, as synthesis presupposes analysis, and emergence presupposes reduction. Hayles' criticism is not unjustified. As computer scientist Ashok Sengupta also notes, adding complexity to the so far mainly linear scientific approaches "seeks to break down natural systems to their simple constituents whose properties are expected to combine in a relatively simple manner to yield the complex laws of the whole" (2006: vii-viii). However, the benefits of simulation and bottom-up approaches to complexity should not be dismissed altogether. My position is closer to the one of philosopher Manuel De Landa, who shares some of Hayles' concerns but still finds value in bottom-up approaches. According to him, "emergent […] properties belong to the *interactions between parts*, so it follows that a top-down analytical approach that begins with the whole and dissects it into its constituent parts (an ecosystem into species, a society into institutions), is bound to miss precisely those properties. In other words, analyzing a whole into parts and then attempting to model it by *adding up* the components will fail to capture any property that emerged from complex interactions, since the effect of the latter may be multiplicative (e.g., mutual enhancement) and not just additive" (2009: 17-18). The determining factor here is the degree of *spontaneity* with which the properties emerge in simulations. In De Landa's own emergent approach to the historical development of societies, starting from the basic subsets of geological and organic materials, each layer co-exists and interacts with others in a nonlinear fashion. So, viewed from the scope of emergence, the units and the subsets they form are not closed entities anymore, but open to interaction, re-negotiation and mutation (De Landa 2009: 21).

[98] According to Peter Corning (2002: 22), synergy refers to "the combined (cooperative) effects that are produced by two or more particles, elements, parts or organisms—effects that are not otherwise attainable."

[99] John Holland maintains that complex adaptive systems have four properties: aggregation—sometimes also referred to as the "synergistic" attribute of emergence—diversity, flows, and nonlinearity (1995: 10-37).

[100] This mathematical model is an alternative to the thermodynamical model of Ilya Prigogine.

[101] Instability, appropriation of randomness, as well as "the actualization of potentials" are also causally related to emergence in dynamical systems —the latter being the effect of the former three attributes (*ibid*).

[102] With 'retrospectively' here I do not refer so much to a temporal but to a structural category. It is not necessarily after the film/narrative that causality is established as a top-down process, but also during the film/narrative, through a process of trial and error of different, tentative narratives and causal-logical sequences, characteristic of which is the process followed by the recipient in the case of detective stories.

[103] The phrases in quotation marks are Nietzsche's formulations in *The Will to Power* (1967, section 477, p. 551). Boje also quotes Nietzsche's phrase that causality is "an invention, a projection of our will onto an event, making some other event responsible for something that happens" (Boje 2001: 93).

[104] The citation is from Ann Langley's article "Strategies for Theorizing from Process Data" (*The Academy of Management Review*, 24(4), 1999).

[105] Sengupta notes that in fact these two factors are the prerequisite for complexity: "In the vision proposed by complexity, we can identify forms and evolutive characteristics common to all, or almost all, systems that are made up of numerous elements, between which there are reciprocal, nonlinear interactions and positive feedback mechanisms. These systems, precisely for this reason, are generally called complex systems." (Sengupta 2006: 269).

[106] Marion makes reference to Stuart Kauffman's *The Origins of Order* (1993, p. 37).

[107] Network science (as opposed to network theory) is a relatively recently scientific field devoted to the study of networks as complex systems. Although the study of networks preexisted in various disciplines, from mathematics to sociology, it is only in the last decade that a unified science of networks made its appearance, with "a growing group of applied mathematicians and physicists [who] have become interested in developing a set of unifying principles governing networks of any sort" (Mitchell 2009: 230). The development of network science moves beyond the static (or reductive) graphic depiction of networks and considers how emergence takes place in them. The science of networks as complex systems uses models from statistical physics in order to analyze networks as dynamical processes, and not anymore as "haphazard sets of points and connections" (or "nodes"/"vertices" and "edges"/"links", in the language of graph theory). As Barrat, Barthelemy and Vespigniani point out, dynamical and statistical approaches to complex phenomena are similar, in that their aim is "to predict the large-scale emergent properties of a system by studying the collective dynamics of its constituents" (2008: 64).

[108] Emirbayer and Goodwin also refer to a model of "structuralist constructionism" as the one that achieved some relative balance in its payment of attention both to individual agency and cultural

determinations. However, this model also again fails—according to the writers— to adequately deal with the "interconnections among culture, agency, and social structure" (1994: 1436).

[109] Todorov formulated this model through his analysis of Boccacio's *Decameron* in the 1960s, a period when the popularity of functionalism in sociology had started fading, but not the interest in equilibrium.

[110] Research in the field of nonequilibrium thermodynamics contributed to a paradigm shift with regard to entropy, which was initially considered to indicate the gradual disorganization and 'death' of a system. Out-of-equilibrium processes maximize entropy but also create—in open systems—an order that is different from the one of systems in equilibrium. This order is produced by the self-organization of a system in a "state of *increased complexity*" (Prigogine and Stengers 1997: 64). Thus nonequilibrium and entropy can be considered forms of organization.

[111] Beyond the Parsonian tradition, social systems theory also engaged with Maturana's and Varela's research on self-organization and autopoiesis. Here the social domain is viewed as composed by "networks and hierarchies of intersecting systems of operationally closed and structurally coupled individuals"—such as biological organisms (in the case of autopoiesis) or social systems. According to the social systems theory, each agent makes its unique "structural adjustment", depending on its particular ontogenetic history, in order to contribute to the overall pattern, the "structure" or "norm" (Goldspink and Kay 2007: 51).

[112] According to Bailey (1994: 121), there are four main currents in systems theory: nonequilibrium thermodynamics (established through the work of Prigogine on entropy), cybernetics, information theory and general systems theory (GST). These currents with their combined principles generate the transdisciplinary field of "new", as Bailey calls it, complex systems theory.

[113] Albert Einstein and Josiah Willard Gibbs used the word "ensemble", although they ended up with a model of "superimposition of trajectories", as Prigogine and Stengers note (1997: 34).

[114] "The System" ("O Sistema") is the title of a documentary by Matteo Scanni and Ruben Holiva (2006) that also deals with the issue of Camorra. The organization of Camorra, which operates in the wider area of Naples, should be distinguished from the Sicilian Cosa Nostra (widely known as Mafia). The latter has a more hierarchical structure, while the former has a looser distribution. Camorra is structured as a network of semi-autonomous clans, which makes it more flexible and adaptable to new constellations of power. In this respect, it is a model for various contemporary mob organizations, which also operate in a less hierarchical way. In his book *Mc Mafia: Crime without frontiers* (2008), the British journalist Misha Glenny describes the effects of globalization on organized crime, and explains how crime also takes the form of a network: "What is important to understand is that the organized crime is a phenomenon without central coordination, but in the same time, a global phenomenon" (Glenny 2009). Control does not come from a sovereign centre but is instead materialized in local commercial transactions in every part of the world. Glenny also speaks about "mob franchising" that takes place across countries, with clans lending their 'brand name' to other emerging groups that extend the network of their business. Organized crime (itself far from a unified

object with similar tactics in every place and every time) can now be seen as operating through these 'glocal' networks, with older organizations trying to track, patronize and exploit the new ones, but without creating them.

[115] The character of Maria is based on the true story of Carmella Attrice, who died in a similar way in January 2005 in Scampia (see Williams 2005).

[116] As Saviano mentions in the book *Gomorrah*, this parable from *Genesis* was used by a priest in Saviano's hometown (Casal di Principe) in a speech he addressed to the locals. The priest urged particularly the local 'bosses' of Camorra to look behind and face the monstrous artifice of their conduct, like Lot's wife did in the Biblical story.

[117] For a journalistic account of this feud see the article "Naples police in huge mafia swoop" from that period, available at the BBC online archive: http://news.bbc.co.uk/2/hi/europe/4075269.stm

[118] The place, although seldom named, is inevitably betrayed by the use of language. To an external observer, the recognition of the Italian language situates the action somewhere in Italy. An Italian observer would possibly locate the place with more precision, because of the use of a very strong Neapolitan dialect. In Italy the film was released with Italian subtitles, and, as the director comments in an interview, the language spoken in the film was a shock even to the people of Naples, who found themselves unfamiliar with the slang spoken in the most part of the film, as well as with Camorra's activity (Garrone 2009b). Commenting on the use of dialect in *Gomorrah* Mario Pezzela (2009) notes: "The Neapolitan dialect spoken by the bosses and, especially, by the younger boys is a sort of neo-language—broken, guttural, elementary, barely deciphered by the subtitles."

[119] This may also be seen as part of a strategy that made it possible for Garrone to shoot on location and to use locals as walk-ons. The local people would probably be more hesitant to participate if anonymity was not kept.

[120] *Gomorrah* does not make exclusive use of non-professional actors. For instance Toni Servillo who plays the role of Franco is a well-known Italian actor. The mixing of professional and non-professional actors was a practice common in Italian neorealism; for example Roberto Rossellini's *Rome, Open City* (*Roma Città Aperta*, 1945) starred Anna Magnani and Aldo Fabrizi among other non-professional actors.

[121] Apart from a number of short films, Garrone, who was initially trained as a painter, directed the following feature films before *Gomorrah*: *Terra di mezzo* (1996), *Ospiti* (1998), *Estate romana* (2000), *L'imbalsamatore* (2002) and *Primo amore* (2003).

[122] However, some neorealist films like *How to Kill Bad People* and *Miracle in Milan* overrule this 'general principle' (see Bondanella 2000).

[123] This multiplicity has been a characteristic of the book as well. Particularly about Saviano's narrative style in *Gomorra*, writer Wu Ming 1 observes: "C'est toujours 'Roberto Saviano' qui raconte, mais 'Roberto Saviano' est une synthèse, un flux imaginatif qui se propage d'un cerveau à l'autre, qui emprunte le point de vue d'un être multiple […] 'Je' recueille et fusionne les mots et les sentiments d'une communauté, bien des personnes ont façonné – dans des camps opposés, dans le bien et dans le

mal – la matière du récit. La voix de *Gomorra* est une voix collective […]" (2008: 8-9). ["It's always 'Roberto Saviano' who narrates, but 'Roberto Saviano' is a synthesis, an imagined flux that spreads from one brain to the other, that adopts the point of view of a multiple being. […] 'I' collects and merges the words and sentiments of a community, [in the sense that] many persons have shaped—from opposite camps, for good or evil, the story's material. The voice of *Gomorra* is a collective voice […]." (Translation mine)]

[124] Something similar happens in the end of the film *Babel*, when a scene with a phone call re-structures the temporal order of the episodes and turns *Babel*, as Cameron notes, from just a multiple-protagonist film into a modular one (2008: 24).

[125] In this respect the people from Campania resemble the inhabitants of the Biblical *Gomorrah*, out of whom God was not able to find even ten righteous men (see Curi 2009: 241-242).

[126] This view is complicit with Curi's alternative reading of *Gomorrah*, according to which, the film stresses the agency of its characters against the established order (or 'State') of Camorra, as it becomes particularly apparent in the story of Ciro and Marco (see Curi 2009).

[127] It is worth noticing that the director of *Gomorrah* mentions in an interview that this 'final information' was the only thing he was uncertain about when the film was over: "As we mentioned before, the film is less journalistic than the book and goes in a different direction. But at the end, we thought, yes, it's important to point out that this situation is something more universal. It's just not that there have been a handful of people killed; there have been thousands. To be honest, I don't know if including these titles at the end were the right decision. And putting them at the beginning would have predetermined the audience's response; another kind of film would have been expected. A change of register might be jarring. It's the only thing about the film I'm not sure about." (Garrone 2009a)

[128] Both Saviano and Garrone, as they stress in their interviews, tried to highlight the universality of the Camorra situation. Rather than a local phenomenon, Camorra represents the hidden side of the European economy, which is supported by criminal organizations such as the one of Camorra.

[129] It has been argued that due to financial restrictions and international co-productions world cinema favors the network narrative form (see Bordwell 2007:197-198; Kerr 2010).

[130] 'Wu Ming' is pseudonym for a collective of five Italian writers (see the official website of Wu Ming foundation: http://www.wumingfoundation.com). The names of the writers are known, but they prefer to call themselves Wu Ming 1…5. The real name of Wu Ming 1 is Roberto Bui.

[131] With the term 'New Italian Epic' Wu Ming 1 refers to the literary tendency that appeared in the first half of the 1990s in Italy with writers such as Valerio Evangelisti, Gianfranco de Cataldo, Andrea Camilleri, Carlo Lucarelli, Helena Janeczek, Roberto Saviano and Wu Ming. The novels participating in this tendency are "hybrid novels", according to Wu Ming 1, based on participation, not only of writers from different generations and literary backgrounds, but also of different genres, styles and *voices* into the narrative itself. Thus, the novels of the New Italian Epic contain "unexpected and uncommon points of view, including those of animals, objects, places and also immaterial fluxes" (Wu

Ming 1 2008; translation from French mine). As Wu Ming 1 adds, these new Italian novels are not based on the traditional ontological grounds of realism, but on those of multiplicitous forms of being.

[132] What has also been stressed in the theorization of the New Italian Epic by Wu Ming 1 (2008) is the narrative 'complexity', both in terms of structure as well as in terms of content. These novels have high cognitive demands from the readers (thus rejecting the assumption that the audience is composed by passive receptors), but also offer them reading pleasure, as the readers become active participants in the solution of narratological problems and the decompression of tension. Often their texts are based on a "what if" assumption, a "non-time" (*unchronie*), where historical events are revisited to be imagined as proceeding differently (as it happens in 'multiple-draft' films, or counterfactual stories).

[133] *Gomorrah*'s transmediality is not to the same degree market-driven as that of most of the cases Jenkins discusses (for example, *The Matrix* or *The Lord of the Rings*). *Gomorrah* participates not only in wider narrative and media tendencies but also in an emerging political movement, which has been inspired—among others—by Saviano and his book, and has been finding expression in the anti-Berlusconi protests in Italy. This movement has also presence at online communities such as various Facebook groups, blogs etc. (for example see http://www.antiberlusconi.it, http://www.facebook.com/pages/Anti-Berlusconi/98138518859). It is worth noticing that Berlusconi has publically opposed Roberto Saviano for glorifying Camorra through his book (see Popham 2010; the video is also available on Saviano's official website at: http://www.robertosaviano.it/rassegna/berlusconi-mafia-famosa-grazie-a-gomorra/). Indicative of this opposition is also the tension that has been created between the producers of the cultural show "Vieni Via Con Me" (that Saviano currently presents on Italian television (RAI3) together with the journalist Fabio Fazio) and the general management of RAI (see the article of *Corriere della Serra* "Fini e Bersani da Saviano: è scontro. 'Masi : Invitare anche Berlusconi e Bossi'", 12 November 2010. Available online at: http://www.corriere.it/politica/10_novembre_12/fazio-bersani-fini_679f6e24-ee46-11df-8dee-00144f02aabc.shtml).

[134] From an autopoietic systems theoretical perspective, such a move would be seen as drawing a line between the film as a system and its environment of other films and media systems.

[135] According to the now classic model that philosopher and linguist Alexander Bain proposed in his *English Composition and Rhetoric* (1866), there are four main modes of discourse: narrative (narration), description, exposition, and argument (persuasion).

[136] For a discussion of the role of space particularly in European cinema see the recent publications *Spaces in European Cinema* (2000, edited by Myrto Konstantarakos) and *Space and Place in European Cinema* (2005, edited by Wendy Everett and Axel Goodbody).

[137] Borwell defines this space as "the imaginary space of fiction, the 'world' in which the narration suggests that fabula events occur" (1985: 113).

[138] Editing space can be distinguished in "continuity" and "contiguity" space, depending on whether the editing is continuous or parallel. Michael Wedel indicates this duplicity of the editing space, as well as a number of other spatial layers, such as the "filmic space of the screen", including the "shot space"

in its "left-right division", "the story space of the narrative", referring to the location where the story takes place and also to the location of shooting, the performative space of the acting, and the "imaginary space" that results for the audience in the cinema (Wedel 1996: 209, 212).

[139] Gabriel Zoran, literary professor in Tel Aviv University and author of the article "Towards a theory of space in narrative", uses the term "complex of space" to refer to the multi-level constitution of space in—mostly literary—narratives. His analytical model of space in narrative distinguishes between three different spatial levels, the topographical, the chronotopical and the textual, across which "scenes"—the units of narrative space—are distributed, in the form of "places", "zones of action" and "fields of vision", respectively (see Zoran 1984: 323).

[140] Everett quotes Foucault from his article "Of Other Spaces", published in *Diacritics* (1989: 25).

[141] This is despite Bordwell's analysis of the film in "Film Futures" (2002: 100), where he argues that the last version of Lola's story becomes the most 'valid' one in the eyes of the viewer, and is the "least hypothetical one". Thus, Tykwer's film as well as other multiple-draft films provide a "final draft", according to Bordwell.

[142] The spatial attributes of poetry have been highlighted by linguist Roman Jakobson. Jakobson argued that, in the poetic message, equivalence is of greater importance than selection—which prevails in ordinary language (see Frank 1978: 280-281).

[143] In the original French "Frontières du Récit", we read: "la narration réstitue, dans la succession temporelle de son discours, la succession également temporelle des événements, tandis que la description doit moduler dans le successif la représentation d'objets simultanés et juxtaposés dans l'espace" (Genette, 158). In my text I use the translation of Frank (1978: 286) because I find it more accurate and less confusing than that of Levonas in *New Literary History*: "narration, by the temporal succession of its discourse, restores the equally temporal succession of events, while the description most successively modulate the representation of objects simultaneously juxtaposed in space" (1976: 7).

[144] In the original: "la diffusion de voyages et la création de la notion de 'site' (classés dans les Guides, objets culturels a visiter Baedeker à la main)". Here Hamon refers to the Baedeker travel guides, published by the homonymous German publishing house founded by Karl Baedeker in 1827.

[145] Our perception of place affects our spatial thinking, in a way reminiscent of the connection between space and place in film theory, discussed above. Geographers and philosophers have been playing an important role in the theorization of space in the second half of the 20th century. The influence of the ideas developed in France in the 1960s, by thinkers such as Gaston Bachelard, Michel Foucault and Henri Lefebvre (see *The Production of Space*, 1974/1991) where the first "spatial turn" in philosophical thought took place, according to political geographer Edward Soja (2009: 20), is carried until the recent—after the mid-1990s—'re-turn' of theory, especially in the social sciences, arts and humanities, to spatial concepts. Since the mid-1990s there have been other influential thinkers of space such as geographer David Harvey, cultural theorist Fredrik Jameson, anthropologist Marc Augé and Soja himself (see *Postmodern Geographies*, 1989) who played a major role in this spatial re-turn (for

an overview of this turn see Barney Warf and Santa Arias 2009). This new spatial turn of theory can also be considered as a reason why description, as a concept associated with space in literature, becomes again—also in this dissertation—worth of attention. Moreover, not only theory but also new types of media and informational networks transform and 'spatialize' our conception of place, and arguably affect the contemporary texts, such as the so-called complex narratives in cinema.

[146] "Le référent à décrire est considéré comme une surface, comme un espace, rationalisé-rationalisable, articulé, découpé, segmenté […]."

[147] "Le descripteur, c'est donc à la fois le périégète, le voyageur, aussi bien que Bouvard et Pécuchet, l'arpenteur d'espace comme l'arpenteur de bibliothèques. D'où, textuellement, nous l'avons vu, une esthétique du 'fragment', du 'morceau', de la 'tranche de vie', du 'tableau' (étymologiquement : idylle), du 'cas', de la 'coupure' (de presse, ou autre), du 'lambeau', de la 'classe', du 'détail', etc., et symétriquement une tendance à mettre en scène un discours de parcours, où des personnages mobiles viendront traverser et relier ces espaces juxtaposés".

[148] See, among others, Don Paul Fowler ("Narrate and Describe: The Problem of Ekphrasis", 1991), Peter Klaus ("Description and Event in Narrative", 1982) and Ruth Ronen ("Description, Narrative and Representation", 1997).

[149] Bogost proposes the term "unit operation" as an amalgam referring to procedures also found in physics and cybernetics, apart from software technology; see Bogost 2006: 1.

[150] In part 2, I mentioned that in nonequilibrium thermodynamics, through an analogous shift of perspective, entropy became an organizing force instead of a sign of disintegration.

[151] In *Narration in the Fiction Film*, a book that is not primarily addressed to undergraduate students like *Film Art*, Bordwell seems to associate pattern making with "schema driven perception" (1985: 102). Thus he draws on Constructivist Psychology, which connects perception and cognition and renders the former into a process of "active hypothesis-testing" (31). In the same book, Bordwell maintains that stylistic patterning plays a significant role in the type of narration that he calls "parametric", and he finds prominent in the work of directors such as Bresson and Ozu, but also in the novels and films of Robbe-Grillet. Bordwell considers parametric narration the only case where style becomes equally significant or even dominates narrative in films that involve storytelling. He also emphasizes the spatial effect that this type of narration has, due to motifs of repetition and difference of stylistic elements that structure the syuzhet. Pattern making as I will discuss it in the context of contemporary complex films lacks the parametric precision of the avant-garde works that Bordwell discusses; moreover, it does not result from the composition of elements of style distict from the narrative elements. Nonetheless, the complex systemic function of parametric narration and the applicability of this type of narration to contemporary complex films would be hypotheses worth of future research.

[152] Especially the neuroscientific complex systemic theories, which are not the ones that Bordwell and Thompson refer to, conceive pattern making as fundamental in the brain activity. According to Varela, the brain is always found in a process of "drift", which drives it towards the creation of patterns,

through "fast oscillations between neuronal populations" (Varela 1995: 333), which happen independently of the stimulus that is each time being processed. For Varela, the process of pattern formation is emergent as long as it is the product of the coordination and co-resonance of a number of individual and distributed units/neurons, which are never found in a state of 'rest'. Rather, a drift keeps the brain activity in a continuous dynamic state. Varela takes from biology the notion of "genetic drift" and resituates it in the context of cognition dynamics. Therefore, drift is for him the driving force that keeps the mind in perpetual movement. Not only Varela but also Scott Kelso, psychologist and researcher at the Center for Complex Systems at Florida Atlantic University, who introduced the approach of "dynamic patterns" to cognitive self-organization, considers the brain as a complex system. The brain, according to Kelso, possesses a "tremendous heterogeneity of structure" and is characterized by "nonstationary dynamics", which are inherently kept in constant instability, ready to respond with pattern formation when encountered with a meaningful task (1995: 283-284). It is this chaotic "dynamic instability" in the neuronal activity (manifested by the increase of fluctuations) that gives rise to pattern formation, which involves synergetic coordination of ensembles of neurons (276). Kelso's theory of cognitive pattern formation does not only refer to the level of neurons and the patterns emerging from their synchronized firing but also to the (organizationally) higher level of consciousness and sensorimotor behavior. The formation of thoughts is, according to him, a distributed and nonlinear process. Thus, thoughts are emergent patterns, just like neural aggregations.

[153] Holtz notes: "The guiding principle here is Ezra Pound's definition of the image as 'that which presents an intellectual and emotional complex in an instant of time'." (1977: 273)

[154] The logic of description has been associated, as both Chatman and Hamon mention, with that of metonymy in rhetoric. Metonymy is, according to Meir Sternberg, "a strong ordering principle [which] drives the contents of the descripta" (Sternberg, as cited by Chatman 1990: 24). The relation "container-contained" is prevailing in metonymy (*ibid*).

[155] Tolva, with a background in English literature, was until recently the manager of the cultural program of IBM, working in the construction of 3-D environments such as virtual cities and museums.

[156] In *Convergence Culture* Jenkins suggests that contemporary films, especially those that can fall under the category of complex narratives, from *The Matrix* and *The Sixth Sense* to *Fight Club* and *Run Lola Run*, involve the creation of a world before that of a story (2006: 119). He considers this to be a result of corresponding pressures from the film industry. Filmmakers are nowadays encouraged—and expected—to "pitch" worlds rather than characters or stories, in order to attract the interest of the producers, who have an eye for the potential transmediality of their film product (Jenkins 2006: 114). It is easier to create a new film or other media products such as video games out of the idea of Zion in *The Matrix* or out of Tolkien's fantasy worlds rather than out of a completed, finite story.

[157] Wagstaff refers to the 'garden' comparing neorealism with the melodramatic genre, which seems to be metaphorically based on the "lost idyll" of a "Garden of Eden" (2007: 64), and thus focusing on the characters' suffering this loss. Although neorealism has some common characteristics with melodrama,

its stance differs from the melodramatic one, as neorealist films tend to (re-)discover a garden in the contingency of everyday life.

ENGLISH SUMMARY

In this dissertation three films are used as lenses in order to approach the complexity inherent in contemporary 'complex' films and to revisit three 'anti-narrative' notions: self-reflexivity, loose causality and description. The framework of complex systems theory and philosophy is used to show how these notions are textual organizing principles, corresponding to processes at work in complex systems and their organization and evolution, namely, self-observation/self-reference, aggregation (of units) and emergent pattern formation. Time, causality and space, the traditional axes along which narratives are organized, become the products, rather than the starting points, of these self-organizing functions.

Part 1 puts into focus the growing tendency for self-reflexive narration that has been observed in complex narrative and 'post-classical' films. In my consideration of self-reflexive narration, I adopt the perspective of (post-)classical cinema by using the film *The Final Cut* (Omar Naim, 2004) as a starting point. *The Final Cut* is an 'experimental' Hollywood film, as it coincided with the attempt to popularize digital film distribution. Combining this 'top-down' form of self-reference with a plot-oriented bottom-up investigation of the self-referential moments in *The Final Cut* as well as in other complex films (as pointed out by other scholars), I show how the time-juggling they perform through flashbacks, flashforwards and *mise-en-abyme* structures can be considered moments of self-observation and self-organization of the diegesis along the dimension of time. Although self-reflexive moments have traditionally been considered disruptive for the smooth constitution of narrative, and have acquired an 'anti-narrative' status in this respect, I argue that through a shift from the narratological to the complex systemic framework these same self-reflexive gestures may be re-appreciated as organizational, rather than disorganizing, devices.

In Part 2, I further engage in the nonlinear, emergent dynamics of complex films. The particular issue I address in this part of the dissertation is the nature of causality that the diegesis of complex films shows when conceived as a complex system. In order to highlight this causal function of complex films, I distinguish it from the representational causality that connects the events depicted in the film, which, in complex and especially 'network' films, appears to be rather loose. Using the film *Burn After Reading* (Joel and Ethan Coen, 2008) as the primary point of reference, I show that the application of the complex systems framework to complex films allows us to connect causally, by way of 'emergence', the representational with the non-representational levels of the diegetic organization. In between the two levels, multiple and distributed elements (such as the multiple characters and agents of 'ensemble' or 'network' films) form aggregates through nonlinear connections, and thus generate causal dynamics that shape the structure of the plot. This dynamic movement drives the *syuzhet* into a

type of organization that is different from narrative, as long as it rejects the causal-logical attempts of interpretation and opens out instead of closing into a beginning-middle-end schema.

The analysis of individual films through the complex systemic framework, as I further argue in Part 3, 'opens out' to the function of cinema as a complex system, and the way the contemporary complex film tendency, combining characteristics of older waves and traditions, transforms the current and future practices of film production, distribution, and reception. As a particular case of this transition I take the film *Gomorrah* (Matteo Garrone, 2008), which 'belongs' to contemporary world cinema and shares common characteristics with various classes of complex narratives. What is striking in *Gomorrah* is the bottom-up and 'obscure' way through which the film constitutes its diegetic world, as a space that, in order to be weaved, demands from the viewer to invest sensorimotor and cognitive effort. With *Gomorrah* as a point of reference, and also referring to other films of the complex narrative tendency, I suggest that description, as a mode of discourse traditionally subordinated to narrative, becomes more pertinent in complex films, which are characterized by a discontinuous (and in this sense spatial) distribution of their diegetic and filmic elements—elements that description aggregates in a bottom-up way. In the concluding chapter I argue that, from the complex systems perspective, these aggregates are emergent patterns, instantiations and agents of an interplay between order and randomness, contingency and structure, through which every complex system, like cinema, creates its world.

NEDERLANDSE SAMENVATTING

In deze dissertatie worden drie films gebruikt als lenzen, met als doel het behandelen van de complexiteit inherent aan hedendaagse 'complexe' films en het herzien van drie bekende 'anti-narratieve' begrippen: zelf-reflexiviteit, losse causaliteit en beschrijving. Binnen een kader van complexe systeemtheorie en filosofie wordt aangetoond dat deze begrippen fungeren als tekstuele organisatieprincipes, corresponderend met complexe systeemprocessen en hun organisatie en evolutie: zelfobservatie/zelforganisatie, de aggregatie van eenheden, en emergente patroonformatie. Tijd, causaliteit, en ruimte (de traditionele organisatiebeginselen van narrativiteit) zijn in dit perspectief niet de beginpunten maar juist de resultaten van zelf-organiserende functies.

Deel 1 adresseert de groeiende tendens van zelf-reflexieve narratie die breeduit wordt waargenomen in complexe narratieven en 'post-klassieke' films. Ik behandel zelf-reflexieve narratie volgens het perspectief van (post)-klassieke cinema, met de film *The Final Cut* (Omar Naim, 2004) als vertrekpunt. *The Final Cut* is een 'experimentele' Hollywoodfilm, die samenviel met pogingen om digitale filmdistributie aan populariteit te doen winnen. Door deze 'top-down' vorm van zelfreferentie te combineren met een plot-georienteerde 'bottom-up' analyse van de zelf-referentiële momenten in deze film en andere voorbeelden (zoals door andere onderzoekers behandeld), toon ik aan hoe het spel met temporaliteit in deze en andere complexe films door middel van flashbacks, flashforwards en *mise-en-abyme* structuren kan worden beschouwd als momenten van diëgetische zelfobservatie en zelforganisatie via de dimensie van tijd. Hoewel momenten van zelf-reflexiviteit traditioneel beschouwd zijn als verstorende elementen in de vloeiende totstandkoming van een verhaal (en in die zin een 'anti-narratieve' reputatie hebben verworven), stel ik dat zulke zelf-reflexieve gebaren een herwaardering verdienen: in de verschuiving van een narratologisch naar een complex-systemisch denkkader fungeren ze niet als verstorende, maar juist als organiserende elementen.

In Deel 2 richt ik mij verder op de nonlineaire, emergente dynamiek van complexe films. Het centrale aspect in dit deel van de dissertatie is het soort causaliteit dat zich manifesteert in de diëgese van complexe films, wanneer die als een complex system beschouwd worden. Om deze causale functie te belichten onderscheid ik die van de representationele causaliteit waardoor filmische gebeurtenissen aan elkaar worden verbonden (welke in complexe, en vooral 'netwerk-gestructureerde' films, vaak nogal losjes schijnt). Aan de hand van de film *Burn After Reading* (Joel en Ethan Coen, 2008) als centraal referentiepunt toon ik aan dat de toepassing van het complexe systemen-denkkader op complexe films het

mogelijk maakt om—via het concept ‘emergence’—de representationele niveaus van diegetische organisatie causaal te verbinden met de niet-representationele. Tussen deze twee niveaus in formereren veelvoudige en gedistribueerde elementen (zoals de vele personages in een ‘ensemble-’ of ‘netwerkfilm’) zich tot aggregaten via nonlineaire connecties, en genereren zo causale dynamieken die de plotstructuur vormgeven. Deze dynamische beweging vormt het *syuzhet* tot een organisatietype dat verschil van narratief, zolang het proces zich niet conformeert aan causaal-logische interpretatiemogelijkheden en zich opent of vertakt, in plaats van zich naar een begin-midden-einde schema te voegen.

Zoals ik beargumenteer in Deel 3 baant het analyseren van individuele films door middel van een complex-systemische benadering een pad naar het beschouwen van cinema zelf als een complex systeem, waarin de huidige tendens van complexe films (die karakteristieken van eerdere tradities en stromingen combineren) hedendaagse en toekomstige filmpraktijken transformeert in termen van productie, distributie, en receptie. Als specifiek voorbeeld van deze overgang neem ik de film *Gomorrah* (Matteo Garrone, 2008), welke ‘behoort’ tot de hedendaagse wereldcinema en karakteristieken deelt met verscheidene soort complexe narratieven. Opvallend aan *Gomorrah* is de ‘bottom-up’ en ‘obscure’ manier waarop de film zijn diegetische wereld vormgeeft als een ruimte die een senso-motorische en cognitieve investering vereist van de kijker om deze compleet te maken. Met *Gomorrah* als referentiepunt, maar met inbegrip van andere films uit deze categorie, suggereer ik dat beschrijving (een discours-modus die vooralsnog als ondergeschikt aan narratief werd beschouwd) meer pertinent aanwezig is in complexe films, die worden gekenmerkt door een discontinue (en daarmee samenhangend, een ruimtelijke) distributie van diegetische en filmische elementen—elementen die door beschrijving op een ‘bottom-up’ wijze worden samengevoegd.

In het concluderende hoofdstuk stel ik dat, vanuit een complexe systemen-benadering, zulke aggregaten emergente patronen zijn; instanties en agenten van een samenspel tussen orde en toevalligheid, contingentie en structuur, waardoor elk system, zoals cinema, zijn wereld vormt.

Vertaling Laura Schuster

BIBLIOGRAPHY

Abbott, Porter H. (2008). Narrative and emergent behavior. *Poetics Today*, *29*(2), 227-244.

Andrew, Alex M. (2008). Digital patient; CYBCOM discussion. *Kybernetes*, *37*(2), 212-214. Retrieved from http://www.emeraldinsight.com/0368-492X.htm

Argyros, Alex (1992). Narrative and chaos. *New Literary History*, *23*(3), 659-673.

Ashmore, Malcolm (1989). *The reflexive thesis: Wrighting sociology of scientific knowledge.* Chicago: Chicago UP.

Augé, Marc (1995). *Nonplaces: Introduction to an anthropology of supermodernity*. (John Howe, Trans.) London: Verso.

Bailey, Kenneth (1994). *Sociology and the new systems theory: Toward a theoretical synthesis*. Albany: State University of New York Press.

Bain, Alexander (2005). *English composition and rhetoric*. (First Edition 1877). Boston, NY: Adamant.

Bal, Mieke (1985). *Narratology: Introduction to the Theory of Narrative*. Toronto: University of Toronto Press.

Bar-Yam, Yaneer (2000). Concept: Patterns. *New England Complex Systems Institute* [Website]. Retrieved from http://necsi.edu/guide/concepts/patterns.html

Barrat, Alain, Barthelemy, Marc and Vespigniani, Alessandro (2008). *Dynamical processes on complex networks*. Cambridge: Cambridge UP.

Bartlett, Steven (1987). Varieties of self-reference. In Steven Bartlett and Peter Suber (Eds.), *Self-reference: Reflections on reflexivity* (pp. 5-28). Dodrecht: Martinus Nijhoff.

Bartlett, Steven (1992). The role of reflexivity in understanding human understanding. In S. Bartlett (Ed.), *Reflexivity: A source-book in self-reference* (pp. 3-18). Amsterdam: Elsevier.

Beal, Wesley (2009). Theorizing connectivity: The form and ideology of the network narrative. In Fiona Hackney, Jonathan Glynne and Viv Minton (Eds.), *Networks of Design: Proceedings of the 2008 Annual International Conference of the Design History Society* (pp. 406-410). Boca Raton: Universal Publishers.

Bedau Mark (1997). Weak Emergence. In James Tomberlin (Ed.), *Mind, causation, and world* (pp. 375-399). Oxford: Blackwell.

Bertuglia, Cristoforo Sergio and Vaio, Franco (2005). *Nonlinearity, chaos and complexity: The dynamics of natural and social systems*. Oxford: Oxford University Press.

Bissonnette, Sylvie (2009). Cyborg brain in Robert Lepage's Possible Worlds. *Screen*, *50*(4), 392-410.

Bogost, Ian (2006). *Unit Operations: an approach to videogame criticism*. Cambridge, MA: The MIT Press.

Boje, David M. (2001). *Narrative Methods for Organizational and Communication Research*. London: Sage.

Bolter, Jay David and Grusin, Richard (1999) *Remediation: Understanding new media*. Cambridge MA: MIT Press.

Bonabeau, Eric (2002). Agent-based modeling: Methods and techniques for simulating human systems. *PNAS*, *99*(3), 7280-7287.

Bondanella, Peter (2000). Neorealist aesthetics and the fantastic: *The Machine to Kill Bad People* and *Miracle in Milan*. In Howard Curle and Stephen Snyder (Eds.), *Vittorio de Sica: Contemporary Perspectives* (pp. 172- 179). Toronto: University of Toronto Press.

Bordwell, David (1985). *Narration in the fiction film*. Madison, Wisconsin: University of Wisconsin Press.

Bordwell, David (2002). Film Futures. *Substance#97*, *31*(1), 88-104.

Bordwell, David (2006). *The Way Hollywood Tells It: Story and style in modern movies*. Berkeley and Los Angeles, CA: University of California Press.

Bordwell, David (2007). *Poetics of cinema*. New York: Routledge.

Bordwell, David and Thompson, Kristin (2008). *Film art: An introduction* (8th ed.). New York, NY: McGraw-Hill.

Branigan, Edward (1992). *Narrative comprehension and film*. New York, NY: Routledge.

Branigan, Edward (2002). Nearly True: Forking Paths, Forking Interpretations. *Substance#97*, *31*(1), 105-114.

Bruner, Jerome (1986). *Actual minds, possible worlds*. Cambridge, MA: Harvard UP.

Buckland, Warren (2009). Introduction: Puzzle plots. In Warren Buckland (Ed.), *Puzzle Films: Complex Storytelling in Contemporary Cinema* (pp. 1-12). Chichester: Blackwell.

Burch, Noel (1981). *Theory of film practice*. Princeton, New Jersey: Princeton UP.

Byrne, David (1998). *Complexity and the social sciences: An introduction*. London: Routledge.

Cameron, Allan (2008). *Modular narratives in contemporary cinema*. Houndmils: Pallgrave Macmillan.

Campbell, Donald (1974). "Downward causation" in hierarchically organized biological systems. In F. Ayala and T. Dobzhansky (Eds.), *Studies in the Philosophy of Biology* (pp. 179-186). Berkeley, CA: University of California Press.

Cavell, Stanley (1979). *The world viewed: Reflections on the ontology of film*. (Enlarged edition) Cambridge MA: Harvard UP.

Chalmers, David (2006). Strong and weak emergence. In Philip Clayton and Paul Davies (Eds.), *The Re-emergence of emergence: The emergentist hypothesis from science to religion* (pp. 244-253). Oxford: Oxford UP.

Chatman, Seymour B. (1978). *Story and discourse: Narrative structure in fiction and film*. Ithaca, NY: Cornell UP.

Chatman, Seymour B. (1990). *Coming to terms: The rhetoric of narrative in fiction and film*. Ithaca, NY: Cornell UP.

Ciborra, Claudio (2004). Digital technologies and the duality of risk. ESRC Centre for Analysis of Risk and Regulation, Discussion Paper 27. London: London School of Economics. Retrieved from http://eprints.lse.ac.uk/id/eprint/36069

Clarke, Bruce (2008). *Posthuman metamorphosis: Narratives and systems*. New York, NY: Fordham UP.

Cleyton, Philip (2006). Conceptual foundations of emergent theory. In P. Clayton and P. Davies (Eds.), *The Re-emergence of emergence: The emergentist hypothesis from science to religion* (pp. 1-30). Oxford: Oxford UP.

Coen, Joel. Joel and Ethan Coen discuss Burn after Reading. Interview by Rebecca Murray, *About.com guide* [Website]. Retrieved from http://movies.about.com/od/nocountryforoldmen/a/countryjc111307_2.htm.

Coen, Joel (2008). TIFF: Burn After Reading with the Coen brothers, Brad Pitt, Tilda Swinton, and John Malkovich. Press conference, 2008 Toronto Film Festival. Reproduced by Jordan Riefe, *The Dead Bolt.com* [Website]. Retrieved from http://www.thedeadbolt.com/news/104984/burnafterreading_interview.php

Cook, Pam and Bernink, Mieke (1999). *The Cinema book: 2nd edition*. London: BFI.

Corning, Peter (2002). The re-emergence of "emergence": A venerable concept in search of a theory. *Complexity*, *7*(6), 18-30.

Coste, Didier (1989). *Narrative as communication*. Minneapolis: University of Minnesota Press.

Coveney, Peter V. (2003). Self-organization and complexity: A new age for theory, computation and experiment. From Proceedings of the Nobel Symposium on Self-organization held at Karolinska Institutet, Stockholm, August 25-27, 2002. *Phil. Trans. R. Soc. Lond. A.*, 361, 1057-79.

Covino, Michael (2009). La malavita: *Gomorrah* and Naples. *Film Quarterly*, *62*(4), 72-75.

Crosson, Frederick J. and Kenneth M. Sayre (Eds.) (1967). *Philosophy and Cybernetics: Essays delivered to the Philosophical Institute for Artificial Intelligence at the University of Notre Dame*. London: University of Notre Dam Press.

Cubitt, Sean (2004). *The cinema effect*. Massachusetts, MA: MIT Press.

Cubitt, Sean and Allan Cameron (2009). *Infernal Affairs* and the ethics of complex narratives. In Warren Buckland (Ed.), *Puzzle films: Complex storytelling in contemporary cinema*. Chichester: Blackwell.

Curi, Umberto (2009). Not against, but beyond the State. In "Umberto Curi and Mario Pezzela on Matteo Garone's *Gomorrah*". *Iris*, *I*, 241-249.

Deacon, Terrence W. (2006). Emergence: The hole at the wheel's hub. In P. Clayton and P. Davies (Eds.), *The Re-emergence of emergence: The emergentist hypothesis from science to religion* (pp. 111-150). Oxford: Oxford UP.

Dennett, Daniel C. (1991). Real patterns. *The Journal of Philosophy*, *88*(1), 27-51.

De Landa, Manuel (2009). *A thousand years of nonlinear history*. Cambridge, MA: The MIT Press.

Detmering, Robert (2010). Exploring the political dimensions of information literacy through popular film. *Portal: Libraries and the Academy*, *10*(3), 265-282.

diCarmine, Roberta (2010). The Cinema of Matteo Garrone. *Wide Screen*, *2*(1). Retrieved from http://widescreenjournal.org/index.php/journal/article/view/61

Doom, Ryan P. (2009). *The brothers Coen: Unique characters of violence.* Santa Barbara, CA: Greenwood Publishing Group.

Doreian, Patrick (2001). Causality in social network analysis. *Sociological Methods & Research*, *30*(1), 81-114.

Duckworth, A.R. (2008). Shallow focus and the aura of authenticity in Gomorra. *The Motley View*. Retrieved from http://ardfilmjournal.wordpress.com/2008/10/29/shallow-focus-and-the-aura-of-authenticity-in-gamorra

Elsaesser, Thomas (2006). Discipline through diegesis: The rube film between "attractions" and "narrative integration". In Strauven, Wanda (Ed.), *The cinema of attractions reloaded* (pp. 205-223). Amsterdam: Amsterdam UP.

Elsaesser, Thomas (2009a). Freud as media theorist: Mystic writing-pads and the matter of memory'. *Screen*, *50*(1), 100-113.

Elsaesser, Thomas (2009b). Tales of epiphany and entropy: Paranarrative worlds on youtube. In Warren Buckland (Ed.), *Film theory and contemporary Hollywood movies* (pp. 150-172). New York, NY: Routledge.

Elsaesser, Thomas (2009c). The Mind-Game Film. In Warren Buckland (Ed.), *Puzzle films: Complex storytelling in contemporary cinema*. Chichester: Blackwell.

Elsaesser, Thomas (2009d). World cinema: Realism, evidence, presence. In Lucia Nagib and Cecilia Melo (Eds.), *Realism and the Audiovisual Media*. Houndmills: Palgrave Macmillan.

Elsaesser, Thomas and Buckland, Warren (2002). *Studying contemporary American film: A guide to movie analysis*. London: Arnold.

Elsaesser, Thomas and Malte Hagener (2010). *Film Theory: An introduction through the senses*. New York, NY: Routledge.

Evans, Russell (2005). *Practical DV Filmmaking*. Burlington MA: Focal Press.

EMIL Project, Public Deliverable 2.1 (2007). Histories of the example of the emergence of open source norms: case selection and histories. Retrieved from http://emil.istc.cnr.it/

Emirbayer, Mustafa and Goodwin, Jeff (1994). Network analysis, culture, and the problem of agency. *The American Journal of Sociology*, *99*,6, 1411- 1454.

Everett, Wendy (2005). Fractal films and the architecture of complexity. *Studies in European Cinema*, *2*(3), 159-171.

Everett, Wendy and Goodbody, Axel (Eds.) (2005). *Revisiting space: Space and place in European cinema*. Bern: Peter Lang.

Fludernik, Monika (2003). Metanarrative and metafictional commentary: From metadiscursivity to metanarration and metafiction. *Poetica 35*, 1–39.

Foucault, Michel (1984). What is Enlightenment? In Paul Rabinow (Ed.), *The Foucault Reader* (pp. 32-50). New York: Pantheon Books.

Foucault, Michel (1970). *The order of things*. London: Tavistock.

Fowler, Don Paul (1991). Narrate and describe: The problem of ekphrasis. *The Journal of Roman Studies*, *81*, 25-35.

Frank, Joseph (1945). Spatial form in modern literature: An essay in two parts. *The Sewanee Review*, *53*(2), 221-240.

Frank, Joseph (1977). Spatial form: An answer to critics. *Critical Inquiry*, *4*(2), 231-252.

Frank, Joseph (1978). Spatial form: Some further reflections. *Critical Inquiry*, *5*(2), 275-290.

Galloway, Alexander and Eugene Thacker (2007). *The exploit: A theory of networks.* Minneapolis, MN: University of Minnesota Press.

Gardies, André (1993). *L'espace au cinéma*. Paris: Méridiens Klincksieck.

Garrone, Matteo (2008, December 17). Interview: Matteo Garrone. By Guy Lodge. *In Contention* film blog. Retrieved from: http://incontention.com/2008/12/17/interview-matteo-garrone/

Garrone, Matteo (2009a). Inside "the System": An interview with Matteo Garrone. Interview to Richard Porton. *Cineaste*, 34(2). Retrieved from http://www.cineaste.com/articles/inside-the-system-an-interview-with-matteo-garrone.

Garrone, Matteo (2009b). Interview to Katey Rich. *Cinema Blend*. Retrieved from http://www.cinemablend.com/new/Interview-Gomorra-Director-Matteo-Garrone-11537.html

Genette, Gérard (1966). Frontières du récit. *Communications*, *8*, 152-163.

Genette, Gérard (1976). Boundaries of narrative. (Ann Levonas, Trans.) *New Literary History*, *8*(1), 1-13.

Genette, Gérard (1986). *Narrative discourse: An essay in method*. Ithaca: Cornell UP.

Gianetti, Louis (2005). *Understanding modern movies*. New Jersey: Pearson.

Glenny, Misha (2008). *Mc Mafia: Crime without frontiers*. London: The Bodley Head.

Glenny, Misha (2009, 26 April). Franchising crime: Interview to Apostolos Maggiriadis. *BHMagazino*. Athens: Lambrakis Press Group.

Goldspink, Chris and Kay, Robert (2007). Social Emergence: Distinguishing Reflexive and Non-reflexive Modes. Paper presented at the AAAI (Association for the Advancement of Artificial Intelligence) Fall Symposium, Washington.

Goldstein, Jeffrey (1996). Causality and emergence in chaos and complexity theories. In William Sulis and Allan Combs (Eds.), *Nonlinear dynamics in human behavior* (pp. 161-190). Singapore: World Scientific.

Hamon, Philippe (1981). *Introduction à l'analyse du descriptif*. Paris: Hachette.

Hamon, Philippe (1981). Rhetorical status of the descriptive. (Patricia Baudoin, Trans.) In *Yale French Studies No. 61: Towards a theory of description* (pp. 1-26). Yale UP. Retrieved from http://www.jstor.org/stable/2929875

Haraway, Donna (1991). *Simians, cyborgs and women: The reinvention of nature*. New York, NY: Routledge.

Hartmann, Stephan (1996). The world as a process: Simulations in the natural and social sciences. In R. Hegselmann, U. Mueller and K. G. Troitzsch (Eds.), *Modelling and simulation in the social sciences from a philosophy of science point of view* (pp. 77-100). Kluwer: Dordrecht.

Hayles, Katherine N. (1991). *Chaos and order: Complex dynamics in literature and science*. Chicago, IL: The University of Chicago Press.

Hayles, Katherine N. (1994). Boundary disputes: Homeostasis, reflexivity, and the foundations of cybernetics. *Configurations 2*(3), 441-467.

Hayles, Katherine N. (1995). Making the cut: The interplay of narrative and system, or what systems theory can't see. *Cultural Critique*, *30* (I), 71-100.

Hayles, Katherine N. (1999). *How we became posthuman: Virtual bodies in cybernetics, literature and informatics*. Chicago, IL: The University of Chicago Press.

Herman, David (2000). Lateral reflexivity: Levels, versions, and the logic of paraphrase. *Style*, *34*(2): 293-306.

Herman, David (2002). *Story logic: Problems and possibilities of narrative*. Lincoln, NE: University of Nebraska Press.

Herman, David (2009). *Basic elements of narrative*. Chichester: Wiley-Blackwell.

Holland, John H. (1995). *Hidden order: How adaptation builds complexity*. Reading, MA: Helix Books.

Holtz, William (1977). Spatial form in modern literature: A reconsideration. *Critical Inquiry*, *4*(2), 271-283.

IMDb, The Internet Movie Database. Taglines of the movie *The Final Cut*. Retrieved from http://www.imdb.com/title/tt0364343/taglines

IMDb User Reviews for Burn After Reading (2008, 12 September). The Coens' Funniest Film Since "The Big Lebowski". Comment reproduced from the blog

prejudicemadeplausible.wordpress.com. Retrieved from http://www.imdb.com/title/tt0887883/usercomments.

Jenkins, Henry (2006). *Convergence culture: Where old and new media collide*. New York, NY: New York University Press.

Jenkins, Henry (2007). Transmedia storytelling 101. *Confessions of an aca-fan: the official weblog of Henry Jenkins*. Retrieved from http://www.henryjenkins.org/2007/03/transmedia_storytelling_101.html

Johnson, Steven (2002). *Emergence: The Connected Lives of Ants, Brains, Cities, and Software*. New York, NY: Touchstone.

Kafalenos, Emma (2006). *Narrative causalities*. Columbus, OH: Ohio State UP.

Katti, Christian (2002). "Systematically" observing surveillance: Paradoxes of observation according to Niklas Luhmann's systems theory. In Thomas Y. Levin, Ursula Frohne, and Peter Weibel (Eds.), *Ctrl [space]: Rhetorics of Surveillance from Bentham to Big Brother* (pp . 50-63). Cambridge, MA: MIT Press.

Kauffmann, Louis H. and Varela, Francisco J. (1980). Form Dynamics. *J. Social Biol. Struct., 3*, 171-206.

Kauffman, Stuart A. (1993). The origins of order: Self-organization and selection in evolution. New York: Oxford UP.

Keep, Christopher, McLaughlin, Tim and Parmar, Robin (1995). The electronic labyrinth. Retrieved from http://elab.eserver.org/hfl0250.html

Kelso, Scott J.A. (1995). *Dynamic patterns: The self-organization of brain and behavior*. Cambridge, MA: MIT Press.

Kerr, Paul (2010). Babel's Network Narrative: Packaging a globalized art cinema. *Transnational Cinemas*, *1*(1), 37-51.

Kim, Jaegwon (2006). Being Realistic about Emergence. In P. Clayton and P. Davies (Eds.), *The Re-emergence of emergence: The emergentist hypothesis from science to religion* (pp. 189-202). Oxford: Oxford UP.

Kinder, Marsha (2002). Hot spots, avatars, and narrative fields forever: Buñuel's legacy for new digital media and interactive database narrative. *Film Quarterly 55*(4), 2-15.

Klaus, Peter (1982). Description and event in narrative. *Orbis Litterarium*, *37*(3), 201-216.

Kleinhans Chuck (1974). Types of audience response: From tear-jerkers to thought-provokers. *Jump Cut: A review of contemporary media*, *4*, 21-23.

Konstantarakos, Myrto (Ed.) (2000). *Spaces in European Cinema*. Exeter: Intellect.

Kozloff, Sarah (1988). *Invisible Storytellers: Voice-over narration in American fiction film*. Berkeley, CA: University of California Press.

Lash, Scott (1994). *Reflexive Modernization: Politics, tradition and aesthetics in the modern social order*. Co-authored with Ulrich Beck and Anthony Giddens. Cambridge: Polity Press.

Laszlo, Ervin (1972). *Introduction to systems philosophy: Towards a new paradigm of contemporary thought*. New York, NY: Gordon and Breach.

Lavik, Erlend (2006). Narrative structure in The Sixth Sense: A new twist in "twist movies"? *The Velvet Light Trap*, *58*(1), 55-64.

Lavik, Erlend (2007). Changing Narratives: Five Essays on Hollywood History. (Doctoral dissertation). Retrieved from Bergen open Research Archive, https://bora.uib.no/handle/1956/3183?mode=full

Law, Averill M. and Kelton, David W. (2000). *Simulation modeling and analysis*. Boston: Mc Graw Hill.

Lawson, Hilary (1987). *Reflexivity: The postmodern predicament*. London: Hutchinson.

Lefebvre, Henri (1974). *The Production of Space*. (Donald Nicholson-Smith, Trans.) Malden, MA: Anthropos.

Lerner, Aleksandr Yakovlevich (1972). *Fundamentals of cybernetics*. London: Chapman and Hall.

Leydesdorff, Loet (2000). Luhmann, Habermas and the theory of communication. *Systems Research and Behavioral Science*, *17*, 273-288.

Luhmann, Niklas (1986). The autopoiesis of social systems. In Felix Geyer and Johannes van der Zouwen (Eds.), *Sociocybernetic paradoxes: Observation, control and evolution of self-steering systems* (pp. 181-182). London: Sage.

Luhmann, Niklas (1990). *Essays on Self-Reference*. New York, NY: Columbia UP.

Luhmann, Niklas (1995a). *Social Systems.* (John Bednarz Jr. with Dirk Baecker, Trans.) Stanford: Stanford UP.

Luhmann, Niklas (1995b). The paradoxy of observing systems. *Cultural Critique*, *31*(II), 37-55.

Luhmann, Niklas (2000a). *Art as a social system*. Stanford CA: Stanford UP.

Luhmann, Niklas (2000b). *The reality of the mass media*. Stanford CA: Stanford UP, Cambridge: Polity Press.

Manovich, Lev (2001). *The language of new media*. Cambridge, MA: MIT Press.

Manson, Steven M. (2001). Simplifying complexity: A review of complexity theory. *Geoforum*, *32*(3), 405-414.

Marcenac, Pierre (1998). Modeling multiagent systems as self-organized critical systems. Proceedings from HICSS-31: *31st Annual Hawaii International Conference on System Sciences*). IEEE Computer Society Press, vol.5, 86-95.

Marion, Russ A. (2006). Complexity in organizations: A paradigm shift. In Ashok Sengupta (Ed.), *Chaos, nonlinearity, complexity: The dynamical paradigm of nature* (pp. 247-269). Springer: Berlin.

Maruyama, Magoroh (1963). The second cybernetics: Deviation amplifying mutual causal processes. *American Scientist*, *5*(2), 164-179.

Meister, Jan Christoph (2010). Narratology. In Peter Hühn et al. (Eds.), *The living handbook of narratology* (Paragraph 80). Hamburg: Hamburg UP. Retrieved from http://hup.sub.uni-hamburg.de/lhn/index.php?title=Narratology&oldid=850

Metz, Christian (1985). Story/discourse: Notes on two kinds of voyeurism. In Bill Nichols (Ed.), *Movies and methods Vol. II* (pp. 543-548). Berkeley, CA: University of California Press.

Metz, Christian (1991). *Film language: A semiotics of the cinema.* (Michael Taylor, Trans.) Chicago, IL: The University of Chicago Press.

Ming, Wu 1 (2008). New Italian Epic: Memorandum 1993-2008: Littérature narrative, point de vue oblique, retour vers le future. (Estelle Paint, Trans.). Retrieved from http://www.wumingfoundation.com/italiano/new_italian_epic_traduction_fra.pdf

Mitchell, Melanie (2009). *Complexity: A guided tour*. Oxford: Oxford UP.

Mittell, Jason (2006). Narrative complexity in contemporary American television. *The Velvet Light Trap*, *58*, 29-40.

Nadeau, Barbie (2008, December 13). Streets of "Gomorrah". *Newsweek*. Retrieved from http://www.newsweek.com/2008/12/12/streets-of-gomorrah.html

Naim, Omar (2004a). Interview to the *Daily Star* of Lebanon. Reproduced in Robin Williams' fansite. Retrieved from http://www.robin-williams.net/interviews/finalcut/naim.php

Naim, Omar (2004b). Interview with Jim Caviezel to Sean Clark. *Dread Central.com* [Website]. Retrieved from http://www.dreadcentral.com/interviews/naim-omar-caviezel-jim-the-final-cut

Naim, Omar (2004c, October 12). Interview to Michael J. Lee. *Radiofree.com*. Retrieved from http://movies.radiofree.com/interviews/thefinal_omar_naim.shtml

Ndalianis, Angela (2005). *Neo-baroque aesthetics and contemporary entertainment*. Cambridge, MA: MIT Press.

Neumann, Birgit and Nünning, Ansgar (2010). Metanarration and metafiction. In Peter Hühn et al. (Eds.), *The living handbook of narratology* (Paragraph 20). Hamburg: Hamburg UP. Retrieved from: http://hup.sub.uni-hamburg.de/lhn/index.php?title=Metanarration and Metafiction&oldid=806

Nicolis, Grégoire (1995). *Introduction to Nonlinear Science*. Cambridge, MA: Cambridge University Press;

O'Connor, Timothy and Wong, Hong Yu (2005). The metaphysics of emergence. *Noûs*, *39*, 658-678.

O'Connor, Timothy and Wong, Hong Yu (2009). Emergent properties. In Edward N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy*. (Spring 2009 Edition) Retrieved from http://plato.stanford.edu/archives/spr2009/entries/properties-emergent/

O'Donnell, Patrick (1996). Speed, metaphor, and the postmodern road novel: Stephen Wright's *Going Native* and others. *Missisipi Review Online*. Retrieved from http://www.mississippireview.com/1996/odonnell.html

O'Donnell, Patrick (2000). *Latent destinies: Cultural paranoia and contemporary U.S. narrative.* Durham, NC: Duke UP.

Panek, Eliot (2006). The poet and the detective: Defining the psychological puzzle film. *Film Criticism*, *31*(1/2), 62-88.

Papadopoulos, Dimitris (2008). In the ruins of representation: Identity, individuality, subjectification. *British journal of social psychology, 47*, 139–165.

Pels, Dick (2003). *Unhastening science: Autonomy and reflexivity in the social theory of knowledge*. Liverpool: Liverpool UP.

Perlmutter, Ruth (2002). Multiple strands and possible worlds. *Canadian Journal of Film Studies*, *11*(2): 44-61.

Perlmutter, Ruth (2005). Memories, dreams, screens. *Quarterly Review of Film and Video*, *22*(2): 125-134.

Pezzela, Mario (2009). Seeing evil: Notes on Matteo Garrone's *Gomorrah*. In "Umberto Curi and Mario Pezzela on Matteo Garone's *Gomorrah*". *Iris*, *I*, 241-249.

Plantinga, Carl (1994). Movie pleasures and the spectator's experience: Toward a cognitive approach. *Film and Philosophy*, *2*, 3-19.

Polan, Dana B. (1974). Brecht and the politics of self-reflexive cinema. *Jump Cut: A review of contemporary media*, *1*. Retrieved from http://www.ejumpcut.org/archive/onlinessays/JC17folder/BrechtPolan.html

Polkinghorne, Donald E. (1988). *Narrative knowing and the human sciences*. Albany, NY: State University of New York.

Popham, Peter (2010, 19 April). Berlusconi family takes on mafia critic. *The Independent*. Retrieved from http://www.independent.co.uk/opinion/commentators/peter-popham-berlusconi-family-takes-on-mafia-critic-1948226.html

Pottage, Alain (1998). Power as an art of contingency: Luhmann, Deleuze, Foucault. *Economy and Society*, *27*(1), 1-27.

Prigogine, Ilya and Stengers, Isabelle (1997). *The End of Certainty: Time, chaos, and the new laws of nature.* New York, NY: The free press.

Radovic, Rajko (2009). McMafia rising. *Film International*, *7*(1), 6-11.

Ramirez Berg, Charles (2006). A taxonomy of alternative plots in recent films: Classifying the "Tarantino Effect". *Film Criticism*, *31*(1/2), 5-61.

Randall, William L. (2007). Narrative and chaos: Acknowledging the novelty of lives-in-time. *Interchange*, *38*(4), 367-389.

Ratner, Megan (2009). The Gomorrah doctrine. *Film Quarterly*, *62*(4), 77-79.

Ravasz, Erzsébet and Barabási, Alberto-László (2003). Hierarchical organization in complex networks. *Physical Review*, *67*(2), 026112.

Richardson, Brian (1997). *Unlikely Stories: Causality and the nature of modern narrative*. Newark: University of Dalaware Press.

Ricoeur, Paul (1988). *Time and Narrative vol. 3*. (Kathleen Blamey and David Pellauer, Trans.) Chicago, IL: The University of Chicago Press.

Ronen, Ruth (1997). Decription, narrative and representation. *Narrative*, *5*(3), 274-286.

Rossbach, Stefan (2000). The myth of the system: On the development, purpose and context of Niklas Luhmann's systems theory. ECPR Joint Session of Workshops, Copenhagen: ECPR. Retrieved from http://www.essex.ac.uk/ecpr/events/jointsessions/paperarchive/copenhagen/ws9/rossbach.PDF

Rowell, Erica (2009). Burn After Reading: Film review. *Film International*, *37*(1), 74-77.

Ruby, Jay (1988). The image mirrored: Reflexivity and the documentary film. In Alan Rosenthal and John Corner (Eds.), *New Challenges for Documentary* (pp. 64-77). Manchester: Manchester UP.

Ryan, Marie-Laure (2011). Space. In: Hühn, Peter et al. (Eds.), *The Living Handbook of Narratology*. Hamburg: Hamburg University Press. Available online at: hup.sub.uni-hamburg.de/lhn/index.php?title=Space&oldid=888

Salzman, Philip Carl (2002). On Reflexivity. *American Anthropologist*, *104*(3), 805-813.

Sandywell, Barry (1996). *Logological investigations vol. I: Reflexivity and the crisis of western reason*. London: Routledge.

Sandywell, Barry (1996). *Logological Investigations vol. II*: *The Beginnings of European Theorizing: Reflexivity in the Archaic Age.* London: Routledge.

Sandywell, Barry (1996). *Logological Investigations vol. III: Presocratic Reflexivity: The Construction of Philosophical Discourse c. 600-450 BC*. London: Routledge.

Sandywell, Barry and Beer, David (2005). Examining reflexivity: An interview with Barry Sandywell. *Kritikos*, *2*. Retrieved from http://intertheory.org/Beer-Sandywell.htm

Saviano, Roberto (2007). *Il Contrario della Morte*. Milano: Corriere della Sera.

Schlitz, Michael (2007). Space is the place: The *Laws of form* and social systems. *Thesis Eleven*, *88*(8), 8-30.

Scholte, Bob (1972). Toward a reflexive and critical anthropology. In Dell Hymes (Ed.), *Reinventing Anthropology* (pp. 430-457). New York, NY: Pantheon.

Sengupta, Ashok (Ed.) (2006). *Chaos, nonlinearity, complexity: The dynamical paradigm of nature*. Springer: Berlin.

Shiel, Mark (2006). *Italian neorealism: Rebuilding the cinematic city*. London: Wallflower.

Silvey, Vivien (2009). Not Just Ensemble Films: Six degrees, webs, multiplexity and the rise of network narratives. *University of Edinburgh Postgraduate Journal of Culture and the Arts*, *8*.

Simons, Jan (2008). Complex narratives. *New Review of Film and Television Studies*, *6*(2), 111-126.

Sin-eater. (n.d.). In *Classic Encyclopedia*. Retrieved from http://www.1911encyclopedia.org/Sin-eater

Smith, Edward (2006). *Complexity, networking, and effects-based approaches to operations.* Washington, DC: CCRP (Command and Control Research Program) Publication Series.

Smith, Evan (2000). Thread structure: Rewriting the Hollywood formula. *Journal of Film and Video*, *51*(3/4), 88-96.

Soja, Edward W. (1989). *Postmodern geographies: The reassertion of space in critical social theory*. London: Verso.

Soja, Edward W. (2009). Taking space personally. In Barney Warf and Santa Arias (Eds.), *The Spatial Turn: Interdisciplinary Perspectives* (pp. 11-35). Oxon: Routledge.

Stam, Robert (1985). *Reflexivity in film and literature: From Don Quixote to Jean-Luc Godard*. Ann Arbor, MI: UMI Research Press.

Stern, David (2000). The return of the subject? Power, reflexivity and agency. *Philosophy and Social Criticism*, *26*(5), 109-22.

Stewart, Garrett (2006). Vitagraphic time. *Biography*, *29*(1), 159-192.

Stewart, Garrett (2007). *Framed time: Toward a postfilmic cinema*. Chicago, IL: The University of Chicago Press.

Stoicheff, Peter (1991). The Chaos of Metafiction. In Katherine Hayles (Ed.) *Chaos and order: Complex dynamics in literature and science* (pp. 89-90). Chicago, IL: The University of Chicago Press.

Suber, Peter (1987). A bibliography of works on reflexivity. In Bartlett, Steven and Suber, Peter (Eds.), *Self-reference: reflections on reflexivity* (pp. 259-362). Dodrecht: Martinus Nijhoff.

Tabbi, Joseph (2002). *Cognitive fictions*. Minneapolis, MN: University of Minnesota Press.

Thanouli, Eleftheria (2006). Post-classical narration: A new paradigm in contemporary cinema. *New Review of Film and Television Studies*, *4*(3), 183-196.

Thanouli, Eleftheria (2008). Narration in world cinema: Mapping the flows of formal exchange in the era of globalization. *New Cinemas: Journal of Contemporary Film*, *6*(1), 5-15.

Tikka, Pia (2008). *Enactive Cinema: Simulatorium Eisensteinense*. (Doctoral dissertation). Helsinki: University of Art and Design Publication Series.

Todorov, Tzvetan (1971). The 2 principles of narrative. *Diacritics*, *1*(1), 37-44.

Todorov, Tzvetan (1977). *The Poetics of Prose*. Ithaca, NY: Cornell University Press.

Tolva, John (1996). *Ut pictura hyperpoesis*: Spatial form, visuality, and the digital word. Proceeding from Hypertext '96: *The seventh ACM conference on Hypertext*. New York, NY: ACM.

Tricomi, Antonio (2008, 17 May). Gomorra un film? No è così Anzi succedono cose più brutte. *La Repubblica*. Retrieved from http://www.repubblica.it/2008/05/sezioni/spettacoli_e_cultura/gomorra-film/proiezione-casalprincipe/proiezione-casalprincipe.html

Tsoukas, Haridimos and Hatch, Mary Jo (2001). Complex thinking, complex practice: The case for a narrative approach to organizational complexity. *Human Relations*, *54*(8), 979–1013.

Van Dijck, José (2008). Future memories: The construction of cinematic hindsight. *Theory, Culture & Society*, *25*(3): 71-87.

Varela, Francisco J. (1990). *On the conceptual skeleton of current Cognitive Science.* In *Beobachter: Konvergenz der Erkenntnistheorien?* (pp. 13- 24). Munich: Wilhelm Fink.

Varela, Francisco J. (1995). The reenchantment of the concrete. In Luc Steels and Rodney Brooks (Eds.), *The Artificial Life Route to Artificial Intelligence* (pp. 11-21). Hove, UK: Lawrence Erlbaum.

Varela, Francisco J. (1999). The specious present: A neurophenomenology of time

consciousness. In Jean Petitot, Francisco Varela J., Bernard Pachoud and Jean-Michel Roy (Eds.), *Naturalizing phenomenology: Issues in contemporary phenomenology and cognitive science* (pp. 266-329). Stanford, CA: Stanford University Press.

Varela, Francisco J., Thompson, Evan and Rosch, Eleanor (1993). *The Embodied Mind: Cognitive science and human experience.* Cambridge, MA: MIT Press.

Von Bertalanffy, Ludwig (2001). *General system theory: Foundations, development, applications*. (13th edition) New York, NY: George Braziller.

Von Foerster, Heinz (2003). *Understanding understanding: Essays on cybernetics and cognition*. New York, NY: Springer.

Wagstaff, Christopher (2007). *Italian neorealist cinema: An aesthetic approach*. Toronto: University of Toronto Press.

Warf, Barney and Santa Arias (2009). Introduction: The reinsertion of space into the social sciences and humanities. In Barney Warf and Santa Arias (Eds.), *The Spatial Turn: Interdisciplinary Perspectives* (pp. 1-10). Oxon: Routledge.

Wedel, Michael (1996). Max Mack: The invisible author. In Thomas Elsaesser with Michael Wedel (Eds.), *A second life: German cinema's first decades* (pp. 205-212). Amsterdam: Amsterdam UP.

Wedel, Michael (2009). Backbeat and overlap: Time, place and character subjectivity in *Run Lola Run*. In Warren Buckland (Ed.), *Puzzle films: Complex storytelling in contemporary cinema* (pp. 129-150). Chichester: Blackwell.

Williams, Daniel (2005, February 8). In Naples, a mob family feud. *Washington Post Foreign Service*. Retrieved from

http://www.washingtonpost.com/wp-dyn/articles/A6310-2005Feb7.html.

Williams, Jeffrey (1999). *Theory and the novel: Narrative reflexivity in the British tradition*. Cambridge, MA: Cambridge UP.

Wilson, Rawdon R. (1995). Cyber(body)parts: Prosthetic consciousness. In Mike Featherstone and Roger Burrows (Eds.), *Cyberspace/cyberbodies/cyberpunk: Cultures of technological embodiment* (pp. 239-260). London: Sage.

Wollen, Peter (1975). The two avant-gardes. *Studio International*, *190* (978), 171-175.

Woolgar, Steven and Ashmore, Malcolm (1988). The next step: An introduction to the reflexive project. In Steven W. Woolgar (Ed.), *Knowledge and reflexivity: New frontiers in the sociology of knowledge* (pp. 1-11). Beverly Hills, CA: Sage.

Zoran, Gabriel (1984). Towards a theory of space in narrative. *Poetics Today*, *5*(2), 309-335.