

# **Bioculturalism, simulation and satire: the case of *SImOne***

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Promoters: Professor Marc Duby and Dr Pieter Mostert

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## **Declaration**

I, Ania Krajewska declare that this thesis, **Bioculturalism, simulation and satire: the case of *SimOne***, is my own unaided work, except to the extent explicitly acknowledged. All the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

This thesis is being submitted for the Degree of Doctor of Literature and Philosophy in Art History, Faculty of Human Sciences, University of South Africa. It has not been submitted before for any degree or examination by any other University.

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**Ania Krajewska**

**March 2014**

## **Dedication**

This work is dedicated to the memory of my father — an architect, a thinker and  
an imaginative parent — Jerzy Krajewski (1940-2002).

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## **Bioculturalism, simulation and satire: the case of *SImOne***

### **SUMMARY:**

This study offers a close look at Andrew Niccol's (b 1964) satirical film *SImOne* from a biocultural perspective emphasising the technological simulation of a Hollywood celebrity and the farce ensuing from her creation. The film is based on Niccol's assumption that the hypertrophied culture into which he places his cultural object will be one in which human traits of sociality will be well advanced and the highly demanding genre of satire will be entertaining, persuasive, and on occasion punitive in its ridicule of Hollywood.

The study makes a contribution to the idea that a cultural object/text operates as a rapid mechanism for propagating cognition — it shows how Niccol has adapted to less than optimal conditions in his world of Hollywood — in this case he parodies the role of the director of Hollywood films in the figure of Taransky. Cognition is understood as that series of mental processes which include attention, memory, learning (from mimicry as well as other forms), problem solving, ratiocination, and making decisions. Niccol relies on his audience's embodied capacities and skills of recognition, thinking, feeling, remembering, and accounting for his message to be understood. Niccol's technical skill in editing his narrative to emphasise the satire of the narrative of Taransky and Simone is a critical part of the film's success. Interpersonal and social propagation of cognition is achieved through reference to other cultural artefacts recalling a variety of similar ideas used in film and other visual creations. The cultural significance of the simulacrum, Simone, is that she is a *vehicle for* and a *form of* socially propagated cognition.

The powerful imagistic impression of film helps to structure internalised cognitive artefacts in the viewers who are expected to reflect on their habits of viewing and thinking. When a film, artwork, poem or novel is analysed, then such a cultural object becomes a *vehicle of and for* propagating cognition.

**KEYWORDS:**

Biocultural perspective, coupled systems, evolution of culture, framed narrative, narratives, propagated cognition, satire, simulacra, simulation.

## PREFACE

The issue of simulation, paraphrasing the old Shakespearian chestnut, “to simulate or not to simulate”, is contentious in many circles of visual artists. Most of the discussions held privately or publicly about the value of figurative artmaking reach back to the condemnation of imitation by Plato and it is most puzzling that Aristotle, the famous proponent of imitation, is not often appealed to as the justifier of the imitation in those disputes. Aristotle, if he could have had a glimpse at the current scientific views on imitation would — one dares to presume — be very pleased to see the strong circle of scientists who support his ideas formed in the 4th century BC. Meltzoff (1995) with his conclusions about the inborn propensity of humans to imitate, or Rizzolatti and Craighero (2004), Gazzaniga (2005) and Ramachandran (2001) with their research into mirror neurons, all confirm the value of imitation for learning, empathy, transmission of information and knowledge, and mostly for enabling culture and cultural behaviour.

As a visual artist I engage with art objects and often question the validity of financial resources spent on cultural productions in the face of great social poverty. Millions of dollars are spent daily on films and other art projects while millions of humans suffer extreme poverty. In searching for some deeper understanding or even some reconciliation of these phenomena the observations made from the biocultural perspective expose a different view of “resources” and “costs”. Artmaking, play or narratives examined from this perspective are not about financial costs and benefits, as Brian Boyd (2009) reminds his readers, but about evolutionary profits. Antonio Damasio’s explanation (2012:296) that the “arts prevailed in evolution because they had survival value and contributed to the development of the notion of well-being” is useful to understand the human drive to make cultural products. Those products can be understood to nourish our emotional biological base. They have a power to elevate “humans to the

greater heights of thought and feeling” and “become a way into the homeostatic refinement that humans eventually idealized and longed to achieve, the biological counterpart of a spiritual dimension in human affairs”.

The study is situated in an interdisciplinary field and works across the boundaries between disciplines traditionally divided into humanities and sciences. It presupposes that knowledge is propagated across various human activities that have been compartmentalised under such labels as ‘visual communication’, ‘behavioural psychology’ or ‘artificial intelligence systems’. Mindful of the arguments laid out by Sokal and Bricmont in the late 1990s about the incompetent use of scientific language by many humanistic scholars, I abandon the practice of paraphrasing in the places where more precise scientific explanations are required and use complete quotations to provide undistorted views of scientific accounts concerning the discussion of issues at hand.

The examination of the roles framed narratives and human simulacra play in socially propagated cognition serves to emphasise the homogeneity of culture and knowledge and is set against the “great divide in human consciousness” which Latour criticises in his essay *Visualisation and cognition: drawing things together* (1999b). The aim of this investigation is reflected in the second part of Latour’s title: “drawing things together”, where the “things” in this study are narrowed to narratives and simulation while the activity of “drawing together” denotes drawing them through the analytical lens provided by the cognitive sciences and evolutionary biology. Doing this I hope will show that cultural artefacts, human minds and science do not operate separately but together they form a complex system of knowledge that continuously feeds, informs and extends one another or as Andy Clark (2010:xxviii) puts it, they form “inextricable tangles of feedback, feed-forward and feed-around loops [...] loops that promiscuously criss-cross the boundaries of brain, body and world”.

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## **CHAPTER 1: INTRODUCING THE STUDY**

*Human cognition, interaction, and culture are thoroughly intertwined. Without cognition and interaction there would be no culture. Without culture, cognition and interaction would be very different affairs, as they are among other social species.*

Dan Sperber (in Enfield & Levinson 2006:431)

### **1.1 INTRODUCTION**

In this study the focus is on a cultural object, a film. This cultural object, while it showcases some prime examples of human ingenuity in technological development, at the same time relies on our biology to disseminate the cognition of moral values which the director, Andrew Niccol (b 1964), wants to offer viewers. There are many well studied mechanisms to explain how we as humans perceive, appropriate, and understand information about our world. However, as an artist, I use biology to amplify my understanding of the cultural artefact, *SlumOne* — not as a biologist would, but as a visual artist. So, I have used this biocultural study, ranging over culture in a broad sense to narrative, and on to one of the specific genres of humour, namely, satire and the historical treasury of

visual art, to express my understanding of a biocultural approach. The biology, as far as an artist has understood it, or the science behind cognition, as it pertains to perception, appropriation and comprehension of a narrative, is detailed to provide evidence for the *bio*-aspect of the biocultural analysis (Boyd, Carroll & Gottschall 2010). The biocultural approach to date has not been exploited in film to the same degree as it has been in literary studies and that is the particular contribution which this study claims to offer.

Although narrative is one of our basic human methods of creating meaningful interpretations of the world, the biological background and basis for the success of narrative as a way of distributing cognition could not be understood as well as it is now without technological advancements in neuro-imaging made during the 1990s. In particular, functional magnetic resonance imaging (fMRI) allowed scientists to map the brain's structures by measuring fluctuating levels of blood flow while these structures were activated and working. Furthermore fMRI gives scientists a three dimensional map of the inside and outside of the brain (Larson 2009; Mlodinow 2012). These advances and others in evolutionary biology have assisted in making the concept of a mind-body unity important in science and, subsequently, the humanities. Such new understanding has gradually filtered into cultural criticism (Barkow, Cosmides & Tooby 1992; Carroll 1995; Storey 1996; Pinker 2007) and enabled those engaged in critiques of literature, the fine arts and other humanities disciplines to view theoretical and philosophical responses to culture through a new lens, that of biology.

An example of the mode through which a specific cultural object is considered as an opportunity to transmit cognition is a dramatic, satirical narrative, a romantic farce, about simulation. Andrew Niccol's film *SimOne* (Simone henceforth refers to the synthespian character in the film) simulates and satirises the real world of Hollywood. The film relates a story which, through parody, satire and an effortless exploitation of the conventions of film production, points a finger at the film director/producer, Taransky, and the whole industry of film creation.

Taransky becomes entangled with his creation, a digital actress, Simone, to the extent that he becomes a fabulator and confabulator whose lies cause increasingly severe consequences for him as he faces the public and the paparazzi. The film satirises many components, including auteurs, conventions of Hollywood narratives, screen goddess worship, the lack of insight into the meretricious business practices of the film industry, and the extent to which paparazzi are willing to humiliate themselves in the service of an illusion. But the main target of the satire is Taransky, living and working in a highly artificial world of consumerist illusion, who loses his identity to a simulation, almost commits an illusory murder, only to have his daughter resolve the complexities of the plot in the epilogue to give the story a happy ending.

The claim is made in this study that meta-cognition (thinking about thinking), when manipulated through satire, imposes a burden on the satirist to mark the objects of his satire sharply and accurately to encourage reflection on what he is satirising. In film, this requires a comprehension of the conventions of Hollywood scripts, techniques of filming, editing, and editing for continuity on the part of the film makers. The editing is a critical way of involving the spectator in what is happening in the film and to its characters, especially if the intention is to satirise some spectators and the industry itself. Satire is a difficult genre, because it is based on the assumption that readers, spectators or viewers will be moved by reflecting on the satirised behaviour to reflect on their own foibles and faults. In the world of primates it is humans only who appear to have the capacity to reflect on and enjoy satire.

Niccol raises questions about what it is to be human compared to the simulacra of persons who are represented as screen goddesses. Simone, the syntheespian, like Galatea in the Pygmalion myth, represents all those creations of the divine and magical woman of the imagination. A predominant question in the film is that of sexual selection in terms of beauty and which man is to have access to the beautiful Simone. Socially constructed cultural objects such as film, artworks and

literature provide an opportunity for the creators of the objects to spread ideas influencing the behaviour and understanding of the recipients of these objects, provided each of those engaged in the “conversation” has shared mental models (Givón 2005). In the world of satire as an expression of humour three theories about how it functions have been dominant until recently, namely, incongruity, relief, and superiority (Kuipers 2008). Those approaches all have validity and the biocultural approach offered in this study is believed to enhance understanding of satirical ruses to spread comprehension.

The fact that culture is embedded in social structures and spread through society arises in part from the tendency of humans to aggregate in large groups which can facilitate group intentionality. As Tuomela (2007:9) states, “[a]s the disposition to ‘we-mode’ thinking and acting arguably is a stable feature based on culture-gene coevolution (an adaptation), this theory connects to our ancestral history and has a naturalistic basis.” Working with this fact that as cultural actors our ‘we-mode’ of thinking can be influenced, satire as a tool for doing so seems to be very valuable. Of course, whether satire has any lasting effects, or changes the way we think, is part of another discussion.

A cultural problem which has engaged authors, auteurs, playwrights, artists and philosophers has been the imitative nature of humans' interaction with each other, the world around them and their production of simulations of humans in that world. The connotative field concerning the idea of simulation — dissimulation, dissembling, deception, faking, and so on, suggests something is not real and so is morally bad, but this study is not an answer to the moral question of whether simulation is ‘good’ or ‘bad’. It is related to a series of other questions. Those questions can be summed up as, ‘What is the use to which the simulation has been put from a biocultural perspective?’

A clarification of some of the terms used in this study is provided here. “Simulation” (DeLanda 2011) is the technical term for an imitation such as

Taransky is supposed to perform. To simulate Simone he has source information about women, the characteristics which are essential to their being women as well as their key behaviours.<sup>1</sup> With that information he can make a simulation.

Simulation is based on approximations and simplifying to replicate some process, real or non-existent. The fidelity and the validity of the outcome of the simulation depend on the model which is initially developed for the simulation. *SImOne* is about a successful simulation. ‘Mimesis’ is a carry-all term used in this study as in imitation, representation of the real world. Its philosophical implications from the Greeks and Romans of antiquity as ‘imitatio’ to the feminist Luce Irigaray’s (b. 1930) stereotypes are acknowledged as important but are not germane to this biocultural analysis.<sup>2</sup>

The study focuses on the two kinds of simulation that pertain to the analysed film. The first is the cognitive aspect where the speculative, imaginative and hypothetical scenarios of possible outcomes to the encountered problems are played out in the human brain. Such speculative play can result in imagery produced in the visual cortex. The second meaning of simulation, an act of creating a representation or a model of something, is the technological, imitative sense. The view of simulation taken in this study is that it is a premeditated, “outcome-based” behaviour in which both the imaginary (speculative) and imitative (technological) solutions are intimately connected and gradually conflated as portrayed through the increasingly confused behaviour of the character Taransky in the film.

Because this study analyses *SImOne* from a biocultural perspective, different

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<sup>1</sup> The use of the plural ‘behaviours’ comes from biological discourse to underscore the fact that Simone is not a human, but a simulation. Human behaviour refers to the whole range of behaviours, voluntary or involuntary, conscious or subconscious, exhibited by humans who are influenced by biology, culture, values, authority, emotions, and ethics.

<sup>2</sup> μίμησις in Greek and ‘imitatio’ in Latin.

definitions of culture are offered. Culture in an anthropological sense is understood as the “non-genetic transmission of behaviour, including local customs and even fashions” (Tomasello 1999a:4—5). Or, as Sperber (1996:1) says,

Culture is made up, first and foremost, of ... contagious ideas. It is made up also of all productions (writings, artworks, tools, etc.), the presence of which in the shared environment of a human group permits the propagation of ideas.

Culture has been characterised as a rapid method for humans to adapt to their environment (relatively speaking over a vast timeline). Culture in this sense, as adaptation, contrasts with genetic adaptation which is infinitely slower (Orr 2005).<sup>3</sup> Culture as an evolutionary adaptation is well established, although the analogy between culture and genes cannot be taken too far (Boyd & Richerson 2005). There is widespread consensus amongst evolutionary biologists on certain assumptions about the value of culture for human beings, as Boyd and Richerson (2005:44) explain, “[c]ulture increases average fitness if it makes the learning processes that generate new knowledge less costly or more accurate”.

Imitation in this study is examined from the perspective of its being one of a set of animal behaviours used for numerous purposes – survival, problem solving, learning and teaching, acquiring resources, and access to mate selection. It also has a significant impact on the development of pro-social adaptations which lead to sociality (Tuomela 2007). The understanding of biological bases for cultural activities and cognition enables cultural criticism to exist in the widest possible context and allows for new insights into the understanding of culture (Andrews & Andrews 2012). The cognitive sciences include studies of other species and work

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<sup>3</sup> “Adaptation and selection are not the same – adaptation is a process in evolution and through adaptation an organism helps itself to fit into its habitat more successfully. Selection is also an evolutionary term and it refers to genetic development which suggests that successful adaptation might be the reason for selection and the consequences of that will be that adaptive traits which have been selected and are inherited enable more offspring to be produced” (Orr 2005).

across anthropocentric boundaries – looking at culture from such a broad perspective enables fresh insights (Cochran & Harpending 2009).

The transmission of cognition is one of the causes and one of the outcomes of sociality in the sense of cooperation to solve problems, joint intention, joint social action, social institutions, evolution of cooperative social activities and group responsibility (Tuomela 2007). Even if such behaviours are technologically assisted and therefore enhanced, they remain of the same type. Nevertheless, we share many basic behaviour traits with other mammals (Figure 1.1). The Capuchin monkeys use nut-crushing rocks as tools. Culture is conceptualised as having three components — socially learned information, and although this particular component is reported among some primates, the other two components, morality of the social group and communication as rituals are not easily proved to exist in non-human species. As Hill (2007:353) says, “It is unclear (and doubtful) whether any nonhuman species exhibit the second and third components of culture. Until this is established, I believe that it is inappropriate to talk about animal culture”.



Figure 1.1 Capuchin monkeys use stones to crack open nuts.

Not all social animal groups use rocks as tools although they might live in the same territory, similar environments and have access to the same rocks. It is only under certain conditions that imitation of tool use happens. Boyd and Richerson (2005:44) say,

[I]mitation occurs when younger animals observe the behavior of older animals and learn how to perform the behavior by watching them. In this case, the tradition is preserved because young chimpanzees actually *imitate* [my emphasis] the behavior of older chimpanzees.

This act of imitation is significant compared to the ‘social enhancement’ of animals learning on their own but not experiencing selective social or “observational learning” which leads to cumulative cultural change (Boyd & Richerson 2005:56). The reason for distinguishing between imitation and cultural enhancement is based on psychobiological findings. As soon as the animal (or organism) does not have to rely on its own reinvention of the enhanced behaviour and can use observation/imitation as a means of learning there is cumulative cultural change. The biological bases for this behaviour are described more fully in the second chapter.

### **1.1.1 Biocultural approach defined as the “cognitive turn” in film theory**

An increased interest in the findings of science in relation to cognition can be seen in the particular way the film industry has interpreted the last thirty years' scientific findings about the brain, biology and the technology which enabled the profound shift in thinking about the body-mind.

Bordwell (1985) had begun to take into account cognitivism in relation to film theory in the early 1980s. The publication of Lakoff and Turner's (1989) book on the embodiment of metaphor, made scholars of social sciences and film theory more aware of the need for a cognitive framework for their disciplines. The impact of cognitive science on film theory has been rather fragmented, according to Buckland (2003), and there exists a split between North American critics and their European counterparts. Generally, the split can be described as follows (Buckland 2003:1-2):

Despite their similarities, the two groups evidence a marked contrast in their work: Whereas the North American cognitivists decisively

reject the basic doctrines of modern film theory (a.k.a. 'contemporary' film theory, based upon structural linguistics, semiotics, Marxism, and psychoanalysis), the European cognitivists inaugurate a revolution in modern film theory by returning to and transforming its early stage – that is, the semiotic stage. Both groups therefore reject psychoanalysis and replace it with cognitive science. However, the European cognitivists assimilate cognitive science into a semiotic framework, whereas the North American cognitivists work within a pure cognitive framework (one untainted by semiotics).

In Figure 1.2 the development of a cognitive emphasis on film theory is exemplified by how theorists have moved from classical film theory to cognitive film semiotics.

#### **1. CLASSICAL FILM THEORY**

- (a) Montagists (Rudolf Arnheim, Sergei Eisenstein, etc.)
- (b) Realists (André Bazin, Siegfried Kracauer, etc.)

#### **2. MODERN FILM THEORY** (a.k.a. 'contemporary' film theory)

- (a) Film semiotics (Christian Metz of *Film Language, Language and Cinema*)
- (b) Post-structural film theory (a.k.a. second semiotics, psychosemiotics): Marxist and psychoanalytic film theory of Stephen Heath, Colin MacCabe, Metz of *The Imaginary Signifier*, Jean-Louis Comolli, Jean-Louis Baudry, Raymond Bellour, etc.  
(The transition from 2a to 2b was effected by theories of enunciation based on the linguistics of Benveniste).

#### **3. COGNITIVE FILM THEORY**

David Bordwell, Noël Carroll, Edward Branigan, Joseph Anderson, Torben Grodal, Ed Tan, Murray Smith

#### **4. COGNITIVE FILM SEMIOTICS**

- (development from 2a)
- (a) New theories of enunciation (Francesco Casetti, Metz of *The Impersonal Enunciation*)
- (b) Semio-pragmatics of film (Roger Odin)
- (c) Transformational generative grammar and cognitive semantics of film (Michel Colin, Dominique Chateau).

Figure 1.2 Development of cognitive/biocultural emphasis in film studies (Buckland 2003:3)

It is Buckland's intention to show the value of the semiotic approach to film theory in arguing for bridging the gap between cognitive film theory and cognitive

film semiotics. He arrives at the following conclusions (2003:5):

Film semiotics is a project that does not consider 'film' to be an unproblematic, pre-given entity, but reflects on the very nature of film's existence, together with the consequences it has on culture and society. Semioticians challenge the commonsense ideological understanding of film as a mere form of harmless entertainment, maintaining that it is a system of signification that articulates experience.

It is not the intention in this study to take up Buckland's challenge and enter the semiotic discussion. That film is a "system of signification that articulates experience" seems to be Niccol's intention in *SIMONE*. Approaching the film through a biocultural critique enables research in the disciplines of the fine arts to be included beyond the peripheries of cognitivism. Thus it becomes possible to include some discussion on aspects of sociality and evolution, not excluding any semiotic understandings.

### **1.1.2 Niccol's reception in the academic literature**

The lack of attention to Niccol's *SIMONE* is exemplified by the coverage his other films have had but to date there has been no biocultural examination of the film. Niccol's *SIMONE* has not received much academic attention apart, perhaps, from Michael Foley's "Plato, Christianity, and the cinematic craft of Andrew Niccol" (2006:43-67) in which the emphasis is primarily on Niccol's two other films, *Gattaca* (1997) and *The Truman Show* (1998). *Gattaca* has attracted most of the scholarly attention and has been analysed from a variety of perspectives. The urgent issues concerning genetic and sociobiological determinism are taken up in "Genetic coming of age: genomics, enhancement and identity in film" by Kirby and Gaither (2005), while Banner's (2011) essay, "The postracial imagination: Gattaca's imperfect world", examines the film's representation of the world. Kirby's (2004) focus is on the ethical values and discriminatory practices addressed through the film in his essay, "Extrapolating race in GATTACA: genetic passing, identity and the science of race". Other noteworthy essays

addressing *Gattaca* are Briggs and Kelber-Kaye's (2000) "There is no unauthorized breeding in Jurassic Park: gender and the uses of genetics", in which the body politics and the cultural anxiety about biological technologies in *Gattaca* are examined. There is Wood's (2003) "Genes and human potential: Bergsonian readings of *Gattaca* and the human genome", in which he demonstrates the possible alternative interpretation of the film compared to the prevailing analysis through the dystopian lens which targets deterministic trends in contemporary societies by Kirby or Banner.

These articles are, however, focused on *Gattaca* and *The Truman Show* and do not address the concerns presented in *SimOne*. The issue of manipulation of reality in *SimOne* is seemingly of lesser urgency than that of gene manipulation in *Gattaca* and apparently carries much less emotional weight.

## 1.2 PROBLEM STATEMENT

There has been no serious critique from directors, actresses, pressmen to financiers which Niccol presents that has been given any coverage from a biocultural perspective. It is Simpson (2003:1) who enunciates the value of humour in human interactions in a nutshell, "Skill in the delivery of humour, in whatever its precise style or genre, is a prized asset in human societies and cultures". Although Branigan (2006) explicitly uses cognitive science terminology and speaks about the cognitive turn in film theory, works such as *SimOne* are not mentioned in his publication. Satire is a type of humour reserved perhaps for TV and cartoon rather than a full length film, Goldmark and Keil (2011) suggest. Comedies abound in the Hollywood annals, but satire about Hollywood is less easy to discover (Horton 1991, 2003; Goldmark 2005). However, in his review of the life of Henry Bumstead, Hollywood director, Horton, suggests that *Slaughterhouse Five* (1974) consisted of a

challenge ... to create a satirical look to contemporary American culture, to come up with an exaggerated 'futuristic' world on another

planet (Tralfamadore) and, most difficult of all, to recreate the city of Dresden before, during and after the Allied firebombing attack.

This was not about Hollywood, though. Although the satirical view of American politics and the politics of war under President Bush in *Fahrenheit 9/11* (2004) is another look at American society it is not a cameo of Hollywood. Satire and comedy are easily confused in the lay public's vocabulary. Horton (1991:4) says of the genre of satire as compared with that of comedy,

[i]f the comic can represent the purest form of laughter, then satire ... is by general consensus a form of purposeful laughter. Voltaire ends his satiric novel *Zadig* with the words "Yes, but....". In a real sense, any satirist ... works within such a double awareness of the need to suggest a 'but', an alternative vision/perspective/reality. But ... satire is perhaps the slipperiest of genres, the one most misunderstood, abused, and in danger of falling into something else, be it pathos, bathos, self-pity, farce, or pure propaganda.

But scarce interest in the biological bases of humour has kept discussion of the genre of satire in film firmly in the camp of the humanities despite the revolution wrought by findings in biology in terms of culture and humour. At the risk of repetition, findings in biology have only lately begun to filter down into the humanities (Boyd & Richerson, 2005) and these illuminating insights of biology's impact on culture are only gradually being taken up from various perspectives into the discourse of the humanities (Barkow, Cosmides & Tooby 1995; Carroll 1995; Storey 1996; Damasio 2003; Eakin 2004; Boyd & Richerson 2005; Pinker 2007; Boyd 2009, 2012; Dancygier 2011).

This study, then, is a close look at the satirical film *SlumOne* from a biocultural perspective. It makes a small contribution to the idea that a cultural object/text operates as a rapid working mechanism for propagating cognition, especially when it exploits narrative, embedded narrative, social criticism in the form of satire, parody and irony, perception, and appropriation and comprehension as fine-tuned to our biological make-up. The interpersonal and social transmission (or scaffolding) of cognition is also achieved through reference to other cultural

artefacts recalling a variety of similar ideas used in the film world and other visual creations. The producer of the film relies on his audience's embodied capacities and skills of recognition, thinking, feeling, remembering and accounting for his message to be understood. The powerful imagistic impact of film helps to structure internalised cognitive artefacts for the viewers about to reflect on their habits of viewing and thinking. When a film, artwork, poem or novel is put through the process of close criticism and analysis then such cultural object/text or film becomes a vehicle *of* and *for* transmitting cognition.

Although the nature of simulation and mimesis has been scientifically examined in fields such as neuroscience, cognitive sciences and the new philosophy of mind in the last three decades, there has been an on-going “simulation practice” or repetitive acts of representation/mimesis ever since the Middle/Upper Palaeolithic transition (Mithen 1996:152). Cultural objects are understood as outward representations of internalising processes in relation to environment and ideas. Mimesis and simulation do not only underpin certain productions of cultural objects but also serve to frame episodic, individual and collective memory into propagated cognition (Donald 1991; Mithen 1996; Dennett 2000; Stafford 2007). This study examines how cultural objects pull mimesis and simulation out of episodic memory and push them into the field of transmitted cognition.

The study argues that simulation, vital for production of narratives and the creation of forms of human simulacra, is rooted in biology, and its cultural existence is not only the reflection of that biological wiring, but also a vehicle for and a form of socially transmitted cognition. The claim that the brain can seemingly experience sensations where there are no sense receptors (Békésy 1974; Goldstein 2001), as well as ideas about the extended mind (Menary 2010), poses questions about the role and function of simulations, such as: Can simulation act as an extension of human perception, how it is processed by the brain and what emerges out of human interactions with simulations? However, these questions are not pursued in this study. Clark (2010:xxvii), convincingly, in any case, presents an objection, when

he sees the “separation between the mind, the body and the environment as an unprincipled distinction”. Because external objects play a significant role in aiding cognitive processes, the mind and the environment act as a “coupled system”.

### **1.2.1 Aims**

The aims of this study are as follows:

- To show the links between biology and culture from an artistic understanding of evolutionary biology;
- To analyse Niccol’s film from the perspective of biology and as a cultural object;
- To show that the genre of satire is a successful mechanism for providing an opportunity for propagating cognition;
- To make a contribution to the body of knowledge in the humanities through biocultural analysis of a specific film.

### **1.2.2 Objectives**

The study is undertaken to achieve the following objectives:

- To review the literature on the topic of how human sociality has a biological background for the propagation of culture and ideas;
- To show that the old divide between the humanities and sciences can be fruitfully reviewed to enable fresh perspectives on cultural objects;
- To show how, through the analysis of certain cultural products, the biocultural approach to film criticism might be useful.

### **1.2.3 Domain of the study**

The domain of the study is the field of narrative, film, satire and biology as it

pertains to human deception and the consequences for violators of the norm of fairness, especially in the use of human simulacra. Satire is understood as a particular vehicle for the transmission and spreading of cognition.

#### **1.2.4 Limitations of the study**

The study is conducted from the perspective of the humanities and no claims are made as to a deep understanding of evolutionary biology or the functions of cognition from a scientific viewpoint. Studies of cognitive processes are complex and are informed by research made in a variety of fields and perspectives. In Chapter 4 the biocultural analysis of a cultural object, the film *S1mOne*, is carried out according to the general and current understanding of how human evolution, culture and cognition operate.

I do not suggest that the interpretation presented here has a value over and above other critical approaches, nor does it necessarily provide a scientific, reliable or accurate account of interactions with cultural objects. The value of the biocultural approach is that it bridges the humanities and sciences divide and because it is biocultural, it does not take issue with many contemporary “-isms” (such as masculinity in some areas of feminism, or authorship in Barthes’ postmodern notions of originality). The biocultural approach is inclusive in bringing together biology and culture and enables cultural critics’ focus to move more freely between cultural universalities and cultural differences.

### **1.3 RESEARCH METHODOLOGY**

This section expands on 1.1.1 *Biocultural approach defined as the “cognitive turn” in film theory*, in terms of the worldview which underlies that interpretation and the theoretical considerations which have informed that view.

### **1.3.1 Worldview/paradigm**

The methodology of this study is qualitative in nature because it is undertaken as an interpretation of a cultural object.

This study has been undertaken from the viewpoint that Darwin's (1809-1882) conclusions about natural selection as an evolutionary drive are fundamentally significant methods of understanding the world and natural life. In addition, the idea that the body and mind are not separate but are intimately connected (Varela 1992; Damasio 2010) is a tacit premise. The third assumption in the paradigm which has driven this research is that culture and the gene pool co-evolve (Boyd & Richerson 2005), however differently the two systems might operate at the micro level.

### **1.3.2 Theoretical background**

The critical approach to the cultural objects under discussion is from a biocultural perspective. That perspective has been called the “cognitive turn” in film theory (Buckland, 2003). This section contains a general overview of what the “cognitive turn” has come to mean to the social sciences in general and what the significance of that turn might be. One of the characteristics of culture among humans is the manufacture of cultural objects, art objects, serving as one of the key indicators of sociality (Tuomela 2007). With the blossoming of cognitive studies over the last three decades (Longuet-Haggins 1973; Churchland 1986; Dennett 1988; Minsky 1988; Turner 1991; Fireman, McVay & Flanagan 2003; Gazzaniga 2005; Keysers 2011; Ramachandran 2011) a biocultural approach to the study of works of art which differs from previous approaches has been enabled through the work of such scholars as Lopreato (1990), Tooby and Cosmides (1992), Mithen (1996), Carroll (1995), Sperber (1996), Tomasello (1999a), Sterelny (2003), Dutton (2009) and Boyd (2009, 2012). To some degree in film studies there are Branigan (1992), Currie (1995), Buckland (2002, 2003), Bordwell (2006) and Andrews and Andrews (2012).

Each discipline has to incorporate cognitive science findings according to its own theoretical base. Different design layouts for biocultural analysis target different domains of such analysis and are outcomes of the relationships between the interests and intentions of the maker of an object or creator of a text and those of the cognisant. The biocultural analysis of cultural objects involves both complex volitional actions and, simultaneously, quite simple volitional actions. For instance, to make a film which correlates with our visual, perceptual, cognitive apparatus as human beings, the film maker has to take account of the way the human brain processes visual information through the analysis of certain cultural products. As a consequence, film relies on a running rate of twenty-four frames per second, an obvious example of how film makers have matched our biology to our own benefit in understanding the cultural object. Another of the strategies film makers exploit is the use of narrative as a way of making sense of the world.

A biocultural analysis of cultural texts and objects relies on a combination of actions that simultaneously deal with cultural and biological phenomena which enable and facilitate human understanding of the particular object under such analysis. To define relationships between biological and cultural agents in a cultural object in terms of its form and content, actions like perception, appropriation, pattern recognition and interpretation play important roles. The forms of cultural objects are a direct outcome of human cognitive functions. The content of cultural objects is typically thought of as open for interpretative actions, but those actions in turn also rely on cognitive processes like anticipation, mind-reading and pattern recognition.

Traditional humanistic critiques of cultural objects have not taken into account the biological bases for the development of those objects, nor for the reception of those objects. This is true of film scholarship (Andrews & Andrews 2012). Indeed, the vertical, in-depth magnifications used in science to examine biological and non-living agents and environments when annexed for use in humanistic critiques, amplify the intimate connectedness between human culture and human

biology and account for cultural actions as being biologically emergent. As Gay (2009:33) explains, the vast majority of humanistic study is horizontal. An inspection of “Michelangelo’s genius by examining his marbles with a microscope” would seem questionable. But a biocultural approach to the discussion of cultural objects which takes into account scientific findings over the last half century about human nature and behaviour and the homeostatic necessities underlying the very existence of a self — relating to culture (Damasio 2010), enriches cultural and literary theories and prevents them from being a deadly malaise which might stultify and nullify collaboration, cognition and creativity.

The popular view that the adoption of the biological approach towards culture and human characteristics leads to biological determinism is misleading. This misconception has been dealt with by many scientists and thinkers such as Chomsky (1980), Mithen (2000, 2005) and Smail (2008). Midgley (1980: xviii), as early as the 1980s, argued that human biological nature is paramount even for such an ideal as human freedom in saying,

The notion that we have a nature, far from threatening the concept of freedom, is absolutely essential to it. If we were genuinely plastic and indeterminate at birth, there could be no reason why society should not stamp us into any shape that might suit it. The reason people view suggestions about inborn tendencies with such indiscriminate horror seems to be that they think exclusively of one particular way in which the idea of such tendencies has been misused, namely, that where conservative theorists invoke them uncritically to resist reform. But liberal theorists who combat such resistance need them as much, and indeed usually more.

Boyd (2009:339-340) draws critics’ attention to the benefits of biocultural approaches to the analysis of cultural objects, texts and beliefs. He juxtaposes the tenets of postmodernism (which he terms “Cultural Critique”) with corresponding biological findings which can be shown to enable the evolution of culture. For example, the famous postmodern stress on the “difference” is counterbalanced in

bioculturalism by the inclusion of human commonalities and Boyd (2009:338-9) also says that it is owing to those commonalities that human culture is transferable. Otherwise it “could not pass from one person to another or from one tradition to another”.

The range of approaches to a biocultural interpretation of humans and their culture is qualified by the specific field from which they originate. Ramachandran (2011:117-35), for example, focuses on mirror neurons in the brain and explains how, by equipping us with the ability to imitate, they are responsible for the shaping of human civilisation. He sees mirror neurons as biological agents performing cultural actions. Damasio (2003) and Linden (2007), by contrast, stress the importance of the narrative—constructing function of the left frontal cortex in the manufacture of fiction, narratives and the self. Adjacent to these two major views that come from hard neuroscience, an anthropological perspective on culture and biology is represented by Mithen (2000) who argues that biology and language alone cannot be credited for the dissemination of human intelligence and that material culture and social structures play a crucial role in cognition. A similar view, namely that cognition originates in culture, is advocated by the cognitive linguist, Tomasello (1999; 2010).

Ramachandran’s (2011:117-135) perspective on bio-culture seems to encompass all the other views in that mirror neurons enable a variety of cultural and behavioural acts that range from “mind reading”, empathy and the belief in other mental agents to the making of assumptions and formation of beliefs about other mental agents. In Ramachandran’s view mirror neurons are directly related to simulation/imitation. He explains that mirror neurons are the main enablers for extending ideas from one mind to another. However, the views of Mithen and Tomasello are important for this study as they validate cultural objects as tools for transmitting cognition. Damasio’s “movie-in-the-brain” (2003:198) concept supports the continuity of the construction of the self and emphasises the role narratives play in the assembling of identity.

The origins of cultural artefacts and the meaning of those artefacts in terms of the society in which and for which they are produced can be clarified with reference to biology. Such an approach ratifies the significance of the individual author and provides an opportunity for sharing cognition throughout society. It is in these instances, in which the analysis of cultural and biological patterns is revealed as overlapping and validating one another, that the depth of co-dependence can be grasped. Culture in this dissertation is understood as all that constitutes human knowledge — the sciences, technologies and humanities, values, belief systems, and norms. Biology is understood as the physical, organic structure of living things which can be explored through science.

Although the biocultural approach is used, in which critics (Carroll 1995; Sterelny 2003; Stafford 2007; Boyd 2009; Dutton 2009) acknowledge biology in the formation of culture, it remains a relatively new method of analysing art objects and artefacts. But as Lehrer (2011:xii), in praise of art and artists, says,

[i]t is ironic but true: the one reality science cannot reduce is the only reality we will ever know. This is why we need art. By expressing our actual experience, the artist reminds us that our science is incomplete, that no map of matter will ever explain the immateriality of our consciousness.

In terms of artificial intelligence Herman (2003:11) reports that stories and cultural objects can be construed as the “pairing or blending of (certain kinds of) semiotic structures [or certain kinds of systems of signs] with (certain kinds of) cognitive resources”. Because the pairing or coupling of biological and cultural agents can be understood from the perspectives of so many different disciplines, according to the extended mind theory, there is no received formula for embarking on criticism using a biocultural approach.

#### **1.4 OUTLINE OF THE CHAPTERS**

Chapter 1 acts as an introduction to the entire study, besides making the problem

statement, identifying the scope and domain of the study, and briefly referring to the qualitative nature of the study. As a background and contextualisation of the particular style of criticism, the biocultural one, the chapter includes a discussion of this approach and its value to the humanities. The entwined nature of biology and culture is discussed as giving rise to and promoting ever further the evolution of culture.

Chapter 2 is a review of the crucial literature for the study, although Chapter 1 also contains many citations of significant figures in the fields of culture, evolution, cognition, satire and the biocultural approach to the critique of the film *SImOne*. As this study is qualitative and based largely on literary sources, amplified by experience in teaching multimedia studies over ten years, it is not always possible to cite precisely the origin of the ideas which have crystallised into this study.

Chapter 3 encapsulates a brief discussion of satire over its very long history from the earliest Aristophanic comedies/satires, Roman satire to the Commedia dell'Arte, Rabelais, Cervantes, English dramatic satirists and some artworks. The chapter also includes a short history of the film industry as the “what” of the satire in the film *SImOne* to contextualise the discussion in the next chapter.

Chapter 4 is a lengthy and detailed analysis of the film *SImOne* from a biocultural point of view. The technicalities of film making are described so as to emphasise Niccol's satirical points. The farcical characters, turns in the plot and Niccol's skilful deployment of the “Hollywood arc” for narrative are referred to.

Chapter 5 constitutes the conclusion of the study and makes some recommendations as to the further application, in an academic learning and teaching environment, of the biocultural basis and approach in multimedia studies.

## **CHAPTER 2: REVIEW OF THE LITERATURE**

*The human brain is nature's great mental chameleon. Pumped and primed by native plasticity, it is poised for profound mergers with the surrounding web of symbols, culture, and technology. Human thought and reason emerges from a nest in which biological brains and bodies, acting in concert with nonbiological props and tools, build, benefit from, and then rebuild an endless succession of designer environments.*

Andy Clark (2003:197)

### **2.1 INTRODUCTION**

The aim of this chapter is to ground the discussion which follows by reviewing literature pertinent to the related topics of simulation, mimicry, mimesis and human simulacra as cultural objects which in social situations can propagate cognition and can deceive. The discussion of the satirical film, *Smash*, Niccol's cultural object, is approached from the social sciences' perspective as worthy of serious criticism. If, as Sperber (1996:1) says, “[c]ulture is made up, first and foremost, of ... contagious ideas” then Niccol's “contagious” idea in his film can

be described as a satire on unmasking the ‘make-believe’ strategies among humans and the consequences of those strategies for all involved through the invention of a technically new Galatea and a more foolish Pygmalion. Since deception is as old as sociality in evolutionary terms (or perhaps older in organism terms), Niccol must rely on his narrative to capture the attention of his spectators. He does this through the use of technology to cause wonder, the arousal of curiosity about the plot, the elicitation of humour at the stupidity of grown-up people, and the astonishing capacity that he hints at for an endless development of an avatar (even of the opposite gender) which are the trappings of his story about deception.

How humans as primates use forms of deception to conceal the truth — dissimulation — as a strategy for survival, control of/ access to resources and reproduction is a biological fact well researched and documented (Higley 2003; Maestripieri 2003; Wallen, Zehr, Herman & Graves 2003). Niccol’s meditation on a particular version of dissimulation — a simulated heroine in a celluloid story — enables him to draw the attention of his viewers to the parody of solving those primary biological problems in a late twentieth century social system in which the values of the portrayed characters can be satirised with as sharp a wit as Alexander Pope’s (1688-1744) or Charlie Chaplin’s (1889-1977).

To discuss the strategy of dissimulation as a biologically based behaviour, because the critical standpoint adopted in this study is a biocultural one, it has been necessary to examine literature in the biological sciences based on primate and human studies. That Niccol’s purpose in making a satire about dissimulation, as it has been carried to extremes by current technology, has a reflexive quality about it when the medium he himself uses for the spread of his ideas — film is itself a species of dissimulation — is another of his subtle jokes.

This chapter outlines the biocultural approach to extend the discussion already

presented in sections 1.1.1 and 1.3.2 on the findings in science and the ensuing appropriation of these findings by humanities scholars who use this approach. This discussion contextualises the analyses of cultural objects in Chapter 4 and distinguishes the particular form of criticism used in the study to analyse cultural objects. The next section of this chapter is about simulation and dissimulation, in terms of its biological basis as well as its significance in human behaviour. The section that follows this is a review of literature pertaining to cognition in relation to its propagation through culture. The final section is about narratives and the devices at play in satirical narratives.

## **2.2 BRIEF OUTLINE OF RELATIONSHIP BETWEEN HUMANITIES AND SCIENCES**

Historically the sciences-humanities relation was perceived as severed during the mid-twentieth century. Snow (1963:20) is the main proponent of the view that humanities and sciences have no common ground — in his work, *The two cultures and a second look*, he points to the disparity between these fields. Sokal and Bricmont (1988) support Snow's line of thought in their article 'Transgressing the boundaries: an afterword' and they invite the readers of the humanities to sit through lectures of Physics I to illustrate the vast abyss between these two different disciplines.

Philosophers such as Derrida (1976; 1982; 1994), Latour (1993; 1999) and Newman (1997), among others, were drawn into the debates about the relationship between the sciences and humanities adding their views on the issues — especially after the publication of Sokal and Bricmont's 'Fashionable nonsense: postmodern intellectuals' abuse of science' (1999), the focus of which is the incorrect use of scientific metaphors as scientific concepts by humanists. Mindful that the differences and likenesses between science and philosophy have a long tradition in epistemology, Derrida's response to and Sokal and Bricmont's claim

was that postmodern intellectuals were abusing science. Although Latour's (1993) evaluation of the scientific method and the work of scientists brought about a realisation that the distinctions between various disciplines and fields are fuzzy, it is Edward O. Wilson's idea of consilience that asserts that "the loom is the same for both enterprises, for science and for the arts and [that] there is a general explanation of its origin and nature thence of the human condition, proceeding from the deep history of genetic evolution to modern culture" (1999:13). Wilson goes on to suggest that "consilience of causal explanation is the means by which the single mind can most swiftly and surely from one part of the communal mind to the other" (*ibid*).

Newman (1997) in his defence of postmodernism points out that critiquing science in general is not the goal of postmodernism, but it is important to expose, in his view, the inappropriateness of applying the scientific paradigm to psychology and as his conclusion he proposes that science and postmodernism should not work against each other but combine their forces and unify. The calls for unification of the sciences and humanities (Newman 1997), pointing to the blurred boundaries across different fields (Latour 2005), or exposing the similarities between the epistemological methods in science and philosophy (Derrida 2005) are useful for fuelling and dissecting the debates within different disciplines on this topic and for practising cognitive prowess.

However it is the biological approach to culture which unveils the intimate interconnections between nurture and nature and its value lies in providing scientific insights into the phenomenon of human culture itself by bringing into our mental landscape the very factor, the leading 'actor' that enables the very existence of mental processes — our biology. But, as Boyd and Richerson caution, (2005:376-377), biology cannot be successful when understood in terms of "universals" as Dawkins's (1976) famous "memes" proclaim as if the analogy between genes and culture were a very deep one:

... [t]he two are similar in that important information is transmitted between individuals. Both systems create patterns of heritable variation, which in turn implies that the population-level properties of both systems are important. Population-level properties require broadly Darwinian methods for analysis. But this just about exhausts the similarities. The list of differences is much larger. Culture is not based on direct replication but upon teaching and imitation. The transmission of culture is temporally extended. It is not necessarily particulate. Psychological processes have a direct impact on what is transmitted and remembered. These psychological effects can produce complex adaptations in the absence of natural selection (Boyd & Richerson 2005:376-377).

The portrayal of the relationships between the humanities and sciences during the last three decades of the last century provided above is necessarily brief and sketchy. It purposefully does not focus on the nuances and detailed contributions brought to the debates by, for example, Sokal and Bricmont's opponents, among others, Gabriel Stolzenberg, Stephen Hilgartner or Bruce Fink, or their supporters like Richard Dawkins, Barbara Epstein, Thomas Nagel or Rob Willer. Willer<sup>4</sup> in 1997, through the sociological follow-up laboratory study, had confirmed one of Sokal's premises about the different natures of the humanities and sciences, targeting particularly their methods — in which the humanities are exposed as being vulnerable to intellectual bias that directly corresponds to the status of the academic individual and is opposed to the scientific practice of rationally weighing up data.

The reason for including this brief outline of sciences versus humanities 'wars' is not so much to provide a historical background to views of cultural and scientific frameworks but mainly to enunciate the differences between the concerns these debates and the biocultural approaches to culture are focused on. While Snow's

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<sup>4</sup> See Willer's 'The effects of author's status on the evaluation of unintelligible texts' (1997) for detailed discussion on this issue.

and Sokal and Bricmont's debates operate within the paradigm that is focused on clarification of scientific and cultural methods, the biocultural approach targets the essence of life management as an adaptive organisation of a variety of behaviours. These behaviours include such strategies as problem solving, provision of access to resources, reproduction and status seeking, and are fundamental in biology and therefore in culture too. The debates about the compatibility of the humanities and sciences are rendered marginal when culture is revealed as having a biological centre.

In current discussions on the relationship between the humanities and the sciences, the question of their mutual support for each other is a convenient start to many cognitive literary critics' writings. For example, Richardson (2010:ix), before launching his arguments about the neural sublime, uses such an opening to provide the backdrop of science/humanities interactions and to ground the 'new interdisciplinarity', also referred to as a 'biocultural criticism' or the 'cognitive turn', as a bridge between "the notorious but increasingly narrow 'gap' between the humanities and the sciences". Despite Sokal's 1996 article, 'The science wars', used to introduce the field of debate on the topic by Labinger and Collins (2001), the editors of the collection of discourse and essays, there is a growing confidence in the circles of the 'cognitive turn'.

Lehrer (2007:xi) in the introduction to *Proust was a neuroscientist*, while he briefly contrasts Snow's laments over the separation of two cultures with works of art that stemmed directly from the involvement of their makers with scientific fields, does not feel compelled to make lengthy historical elaborations on the topic of bridging the gap between the humanities and the sciences. Varela (1992) observes that the so-called 'problem' between the sciences and humanities has more to do with the binary approaches to subjectivity and objectivity.

### **2.2.1 Intuitions in previous centuries about cognition and culture**

Sperber (1996:1) in expanding on culture as “contagious ideas” says,

... an idea, born in the brain of one individual, may have, in the brains of other individuals, descendants that resemble it. Ideas can be transmitted, and, by being transmitted from one person to another, they may even propagate. Some ideas — religious beliefs, cooking recipes, or scientific hypotheses, for instance — propagate so effectively that, in different versions, they may end up durably invading whole populations.

That earlier intuitions about nature and culture have led to the findings of many current theories about the relationship of cognition and culture is without question — we are dwarves standing on the shoulders of the giants of the past<sup>5</sup>. The “contagious ideas” intuited earlier will be the basis for many modern developments. But it is technology, which illuminates biology at the microbiological level, that has been the vehicle and tool for new understanding in biology.

Earlier voices in philosophy, art and literature intuited the close connection between biology and culture, the evolution of culture through biological processes and the idea that the biological basis for personality is deeply related to the malleability of the neurology of the brain. For Aristotle (384-322 BCE), concerned with the vexing topic of mimesis in relation to drama, mimesis was an “inborn gift” manifesting itself in every human (Aristotle 2000:7). Intuitions similar to those of Aristotle, before the advent of the discipline of the cognitive sciences, by numerous poets, philosophers and authors about the role of biology in the formation of culture are common.

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<sup>5</sup> The phrase is attributed to Bernard of Chartres in John of Salisbury’s 1159 *Metalogicon*.

Lehrer (2007:25-52) speaking about George Eliot (1819-1880), for instance, who while writing *Middlemarch* in an age in which predetermined character traits were believed to determine the outcome of behaviour, anticipated that human minds are malleable. Eliot's main character Dorothea is allowed to evolve and recover from the mistakes she has committed earlier and is shown to adapt to the new insights she has formed in the light of her experiences. Thomas Hardy's (1840-1928) *Tess of the D'Urbervilles* shows much less capacity to escape the pessimistic determinism of Hardy's outlook on human nature.

Damasio's (1994) publication of his findings about the unity of body, brain and mind were intuited in Walt Whitman's 19<sup>th</sup> century publication *Leaves of grass*, in which he draws readers' attention to body and mind as one entity. Damasio's claim (2006:226) that the body "contributes more than life support and modulatory effects to the brain ... [it] contributes a content that is part and parcel of the workings of the normal brain" has already been expressed in 1855 in Whitman's words as "Your very flesh shall be a great poem" (2004:77) and "Seeing, hearing and feeling are miracles, and each part and tag of me is a miracle... the scent of these arm-pits aroma finer than a prayer" (2004:124).

*Nebuchadnezzar* (Figure 2.1), a 1795 watercolour by William Blake (1757-1827) can be interpreted from a biocultural perspective as an inkling of ideas about the biological emergence of the human mind. It corresponds to the observations made by Mithen (in Carruthers & Chamberlain 2000:208) about the "most striking pattern in the archaeological record is that modern human brain sizes are reached long before there is any trace of modern human thought and behaviour". It is this event before the formation of the extended mind, before the emergence of the "mental exoskeleton" that Blake represents in his watercolour.

*Nebuchadnezzar* is alone in his surroundings where there are no cultural objects, no tools and the only a hint at some kind of communication is the facially

expressed angst as if in an attempt to form the first guttural sounds or a sign of surprise, or unease at the awakening of self-awareness. Blake acknowledges the biology of the emerging human by portraying a complex vascular system of the lower limbs of the being and it is echoed in the execution of the patterns forming the cave environment as if hinting at the development of biological solutions throughout strata of different species. The animal qualities of Nebuchadnezzar are emphasised by his claws, his mane and mostly by his crawling position that is earth-bound and insecure, and further accentuated by the choice of the horizontal format. The gaze directed toward the viewer seems to carry the self-contemplative, introspective weight exerted by an attempt at performing cognitive actions.



Figure 2.1        William Blake, *Nebuchadnezzar*, 1795—1805. Watercolour on paper. Tate Gallery, London.

Another example of an early intuitive insight into human cognition is provided by Lehrer (2007:97) who observes that Cezanne “believed that light was only the

beginning of seeing. ‘The eye is not enough’, he declared. [...] Cezanne’s epiphany was that our impressions require interpretation”. Cezanne’s statement is congruent with the biological view of visual perception which is enabled through sensory responses that occur in different areas of the brain ranging from the visual cortex to the medial temporal lobe where interpretation of the received images takes place. A new theory has emerged from the biological ruminations about biology and mind since the 1990s and that is described as the “extended mind”, an idea from scientists working on artificial intelligence.

### **2.2.2 Extended mind theory**

Human brains use a variety of external cultural tools, symbol systems and artefacts to enable, share and spread knowledge. Clark’s hypothesis of the extended mind (Clark 1997; Clark & Chalmers 1998; Wilson 2004) is one of the contributory bases of the understanding of transmission of cognition, namely, that humans are “essentially incomplete creatures [who] naturally use [...] neural resources in part to parasite, lean on, and incorporate those external cultural—technological resources which have become apt for incorporating” (Dror & Harnad 2007:47). Clark (2003) and Wilson (2004) describe shared cognition in terms of the “extended mind” hypothesis.

Chambers (in Clark 2010) suggests that hints of the idea of the extended mind are already found in Dewey, Heidegger and Wittgenstein. The view that biology and culture (and technology as part of human cultural development) are intertwined is not new but it is only in recent decades that it has been so extensively acknowledged (Tuomela 2007). Although this is an interesting study in itself it is not the main focus of this study and belongs more to research on cyborgs and robot hybrids.

### **2.2.3 Relationship between biology and culture**

Boyd and Richerson (2005:44) describe how culture and biology are entwined in evolutionary terms as a result of imitation:

Culture increases average fitness if it makes the learning processes that generate new knowledge less costly or more accurate. Culture may do this in at least two ways: first, social learning allows individual learning to be selective. Individuals can learn opportunistically when it is likely to be more accurate or less costly and imitate when conditions are less favorable. Second, social learning allows learned improvements to accumulate from one generation to the next. When learning in small steps is less costly per unit improvement in fitness than learning in large steps, the cumulative learning over many generations can increase average fitness. ... These results help us understand the importance of the evolution of true imitation.

Imitation is then one of the mechanisms of our biology intimately connected to the evolution of culture. It is from such mechanisms of our biological make-up as described as “cooperation, commensality, morality [...] capacity for intention attribution, planned deception, and the highly structured nature of social interaction” that we form interdependent networks (Enfield & Levinson 2006).

To understand the interconnectedness of biology and culture there are several ideas which have developed over the last century which, although observed by scholars and thinkers before, have not necessarily been discussed from a scientific point of view (Boyd & Richerson 2005). The model for cultural evolution which Boyd and Richerson (2005:289) favour is a Darwinian one which they define as,

... [t]he idea that unifies the Darwinian approach is that culture constitutes a system of inheritance. People acquire skills, beliefs, attitudes, and values from others by imitation and enculturation (social learning), and these ‘cultural variants’ together with their genotypes and environments, determine their behaviour. Since determinants of behaviour are communicated from one person to another, individuals sample from and contribute to a collective pool of ideas that changes

over time. In other words, cultures have similar population-level properties as gene pools, as different as the two systems of inheritance are in the details of how they work.

That human evolution is an important factor in a discussion of culture is what is assumed in this study. Trying to find out what happened to make humans capable of culture and prosociality in their evolutionary trajectory is the business of scientists from a wide range of scientific disciplines. What is significant to understand, is what Nesse (2010:137) explains as follows,

... [s]omething extraordinary happened on the evolutionary path that gave rise to creatures capable of culture. The changes are so profound it is as if we humans were somehow domesticated. Levels of violence are drastically lower than for the other great apes. We are born helpless, we require extended care, and we actively teach each other. We pay exquisite attention to each other's wishes and emotional states. We not only cooperate in ways other great apes cannot, we also form deep attachments to nonrelatives and groups that result in altruistic behaviors obviously harmful to fitness. Even our bones are different from our ancestors in ways typical of a domesticated species.

So, from a biologist's point of view, although the basics are generally agreed on, the selection pressures are innumerable in their details and we are "domesticated". Nesse (2010:137) explains that

... [s]election has shaped many traits closely related to culture, including bipedality, hunting, language, tool making, manual dexterity, agriculture, cooperation, emotions, facial expressions, foresight, inhibition, guilt, conformity, imitation, social learning, norm enforcement, morality, empathy, and theory of mind, among others .... Many selection forces have been proposed to shape these traits, including kin selection, group selection, sexual selection, cultural group selection, and the benefits of exchange relationships....

Without drawing up a hierarchy of the traits which might have been selected for and thus given rise to culture, cooperation seems a useful place to start. Cooperation is a most vital trait for social interactions and for culture. However,

Nesse (2010:138-139) sums up one of the problems as, “[p]rior to 1966, capacities for cooperation were explained as obviously beneficial for groups, but everything changed when Williams (1966) pointed out and Dawkins (1976) emphasized that selection would tend to eliminate genes that resulted in greater fitness benefits to others than the self”. As a consequence of these insights, current discussions centre on reciprocity, mutual benefits and, importantly, kin selection. So, even if the genes selected are not necessarily the best, amongst kin, cooperation is beneficial. Amongst strangers it is a matter of exchange — who benefits from the cooperation? What happens if one party defects on the cooperative endeavour then the other contributor is left without benefits?

Fairness violations are not easily handled amongst humans, ranging from stinging words to violent revenge (the Norse and Icelandic sagas are excellent examples). Non-relatives also work on the idea of mutually beneficial exchanges. But a point of the greatest importance for the proposition that culture and cooperation are intimately entwined is that, “Human patterns of exchange, and the associated fitness benefits, are not found in other animals. They may be crucial steps on the road to culture” (Nesse 2010:139). To sum up, Nesse (2010:142) argues that “competition within groups, rituals and displays, divisions of labour, and social integration — this list could hardly be more germane to the origins of human capacities for culture”.

Nesse’s next major point about traits that might be essential for culture to develop opens with the question, “What kinds of traits should we expect social selection to shape?” In answer to the question he brings together areas of research which have provided some answers to that question of social selection:

It should shape traits that make an individual preferred as a social partner, including (a) high levels of resources (health, vigor, personal skills, powerful allies, status, territory, and other resources), (b) tendencies to share those resources reliably and selectively with relationship partners, (c) accurate intuitions about what others are

seeking in a partner, and (d) strong motivations to please partners and other in-group members (2010:143).

Although all of these traits are not reducible to culture itself they begin to make a sufficient basis for the development of culture. Culture must surely have emerged from human cognitive capacities and evolved and is acted upon by motivational and cognitive factors, new selection forces and so on.

One such factor of social selection is “status displays” whether it enables increasing fitness to attract or keep social partners. On the other side of this tendency is our need to preserve social norms and that violators deserve some punishment or exclusion from the group. However, because deception is ubiquitous and our desire to please others is in direct opposition to this trait, there is great vigilance in society to detect deception. Naturally different cultures use very different strategies to keep cooperation going amongst members of groups and respond to norm or unfair violators (Nesse 2010:143-144).

For Nesse (2010:144) the products of selection and their utility are not the most significant part of the argument for prosociality given that “one process ... shapes a whole suite of traits ... toward the process that influences the fitness for individuals who vary on certain behavioral traits”. That process is all about what happens inside the minds of others in the group who will judge fitness of the individual and reject or accept, leave or provide help. In fact, according to Nesse (2010:145), “A variety of other mental traits give advantages when social selection influences fitness” — abilities in facial recognition to remember violators of norms, predict what might happen in complex social situations, conformity to norms, exclusion of outsiders and language. With language it becomes possible to promise and to threaten.

Social selection leads to human “domestication” (of sorts) as social choices enabled our ancestors who were not so aggressive but more generous and intuitive

of what was in others' minds to have selective advantages. Then prosociality as a process “ran away”. Nesse (2010:146) suggests, “[e]ach lifetime recapitulates the process; tiny social cues act on mechanisms shaped by selection to detect and respond to them, steadily but firmly rewarding increasingly prosocial behaviour”. Naturally, there are innumerable failures, but social selection affords a convincing underpinning to prosociality. Once complex culture is launched it becomes a selection force of its own and becomes “a system of inheritance” (Boyd & Richerson 2005:4).

Over the last three decades Boyd and Richerson (2005:3-5) have worked on the problem of the evolution of culture in humans in terms of how culture works, and what the interaction is between cultural evolution and genetic evolution. Their key findings can be summarised as follows,

1. Culture is information that people acquire from others by teaching, imitation, and other forms of social learning...
2. Culture change should be modelled as a Darwinian evolutionary process ...
3. Culture is part of human biology ...
4. Culture makes human evolution very different from the evolution of other organisms...
5. Genes and culture co—evolve.

In the graphic (Figure 2.2) the relationship between culture and biology as a feedback loop between the “sophistication of the stone tools and brain development” as an accepted scientific theory (Nicholson 2013, Kindle, loc.271) is presented. Tools and cultural objects (or manufactured objects) extend the reach and capacity of our mind-body’s limitations.

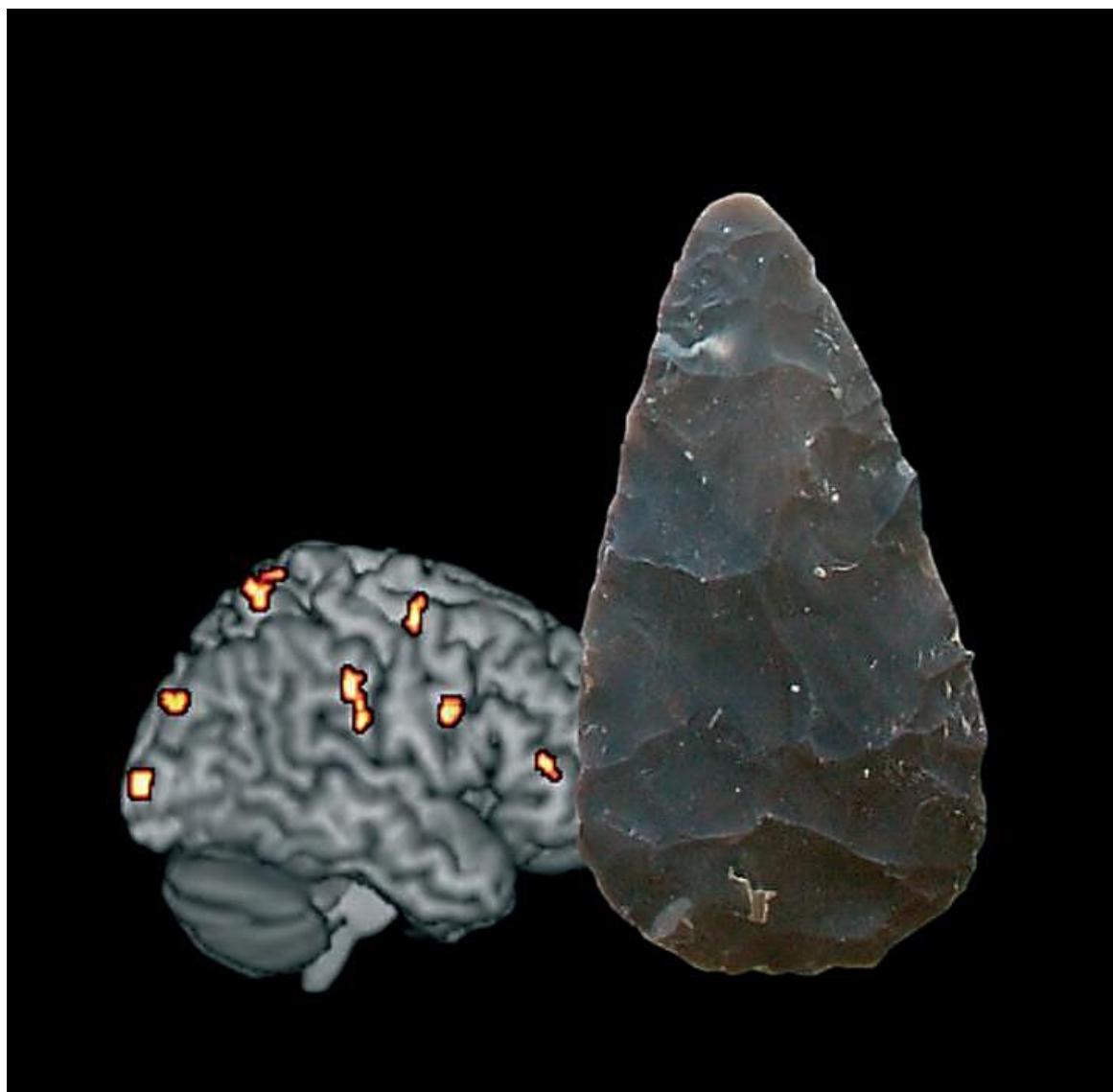


Figure 2.2

Symbolic illustration of relationships between biology and culture – a coupled system. (Source: the cover of Philosophical Transactions of the Royal Society – The Biological Sciences Journal, vol. 363, no. 1499).

This point encapsulates a very significant question which the social sciences have not taken up in a way that is illuminating for themselves. From a biologist's point of view it is not the old nature (biology)-nurture (culture) argument which suggests that first we developed brains big enough to accommodate culture, then we 'got' culture (Boyd & Richerson 2005:9), but something else. That crucial deduction about the relationship between culture

and genetic evolution is that culture and genes co-evolve, so our genetic evolution happens in a *constructed* environment. The argument which is not clearly understood about culture is that it is an adaptation by natural selection which gives rise to certain traits. Boyd and Richerson (2005:8) make it clear where to place the emphasis because

... every bit of the behavior (or physiology or morphology, for that matter) of every single organism living on the face of the earth results from the interaction of genetic information stored in the developing organism and the properties of its environment, and if we want to know why the organism develops one way in one environment and a different way in a different environment, we have to find out how natural selection has shaped the developmental process of the organism. This logic applies to any trait, learned or not. Moreover, biologists have been quite successful in applying adaptationist reasoning to explain learned behaviour.

#### **2.2.4 Cognition and culture: a summary of scholarship**

The next illustration (Figure 2.3) provides a mind map of the key issues in biological terms that are significant for cognition, the other part of the discussion in this study. These are gesturing, pointing, problem solving through competitive or cooperative approaches and sociality. They work in a feedback loop impacting our cognition and transmitting and spreading it in a multiplicity of ways. The biologically significant activities are indicated with some of the names of the significant scholars working on the issues from a very wide variety of cognitive disciplines — the network of scientists.

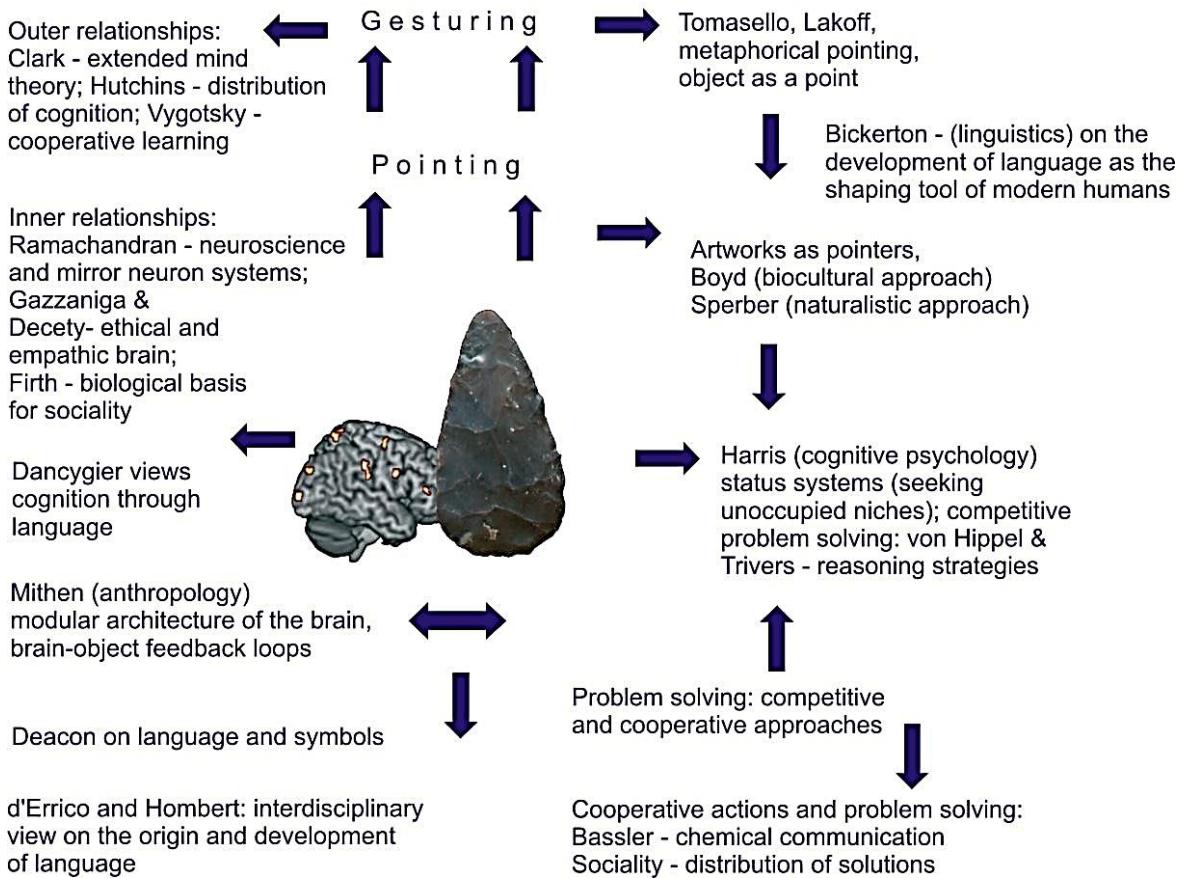


Figure 2.3

An example of a mind map for investigating the relationships between biology and culture targeting particular biological ground for pointing and problem solving.

## 2.3 HUMAN SOCIALITY AND BIOLOGY

Human sociality is the necessary ground for all areas of human social interactions (Enfield & Levinson 2006:2). But the range and variety of human societies with habits, norms, ecologies, institutions and so on is dizzyingly diverse. Altruistic behaviour in social groups continues to be a much debated question and is set against the selfishness axiom. But research has shown that prosocial behaviour is rewarded in society, even at great cost as is its opposite, anti-social behaviour which is punished. The question currently being asked

has to do with motives and cost. Henrich, Boyd, Bowels, Camerer, Fehr and Gintis (2004:9) remark that,

... [a] vast amount of ethnographic and historical research suggests that social preferences are likely to be influenced by the economic, social, and cultural environment. Humans live in societies with different forms of social organization and institutions, different kinship systems, and diverse ecological circumstances; varying degrees of market integration demonstrate quite different kinds of social behavior. Many of these behavioral patterns do seem to reflect local context, circumstances, and culture. However, while ethnographic and historical methods provide rich contextualized details about the lives of individuals and the practices of groups, they can only yield circumstantial evidence about human motives. As the longstanding, fundamental disagreements within the cultural and historical disciplines attest, many different models of human action are consistent with the ethnographic and historical record.

An investigation into human sociality as it currently operates is often, in academic contexts, focused on Westerners. In the experiments conducted by Henrich et al. (2004:16-18) they do not. They distinguish between different societies all of which exhibit characteristics of sociality, but have different environments, access resources in various ways, speak totally different languages, have different economic bases, style of residence, size and arrangement of cooperation in terms of social institutions and settlement sizes. These range from horticulturalists, horticulturalists/foragers, agro-pastoralists, nomadic groups, sedentary nomadic groups, to semi-nomadic groups. The complexity of their societies also differs widely. Henrich et al. (2004:18) use well established anthropological classifications to explicate the variety of possible ways to live together; they explain how decision-making happens in the various groups currently from family to multiclan chiefdoms,

... [f]amily-level societies consist of economically independent families that lack any stable governing institutions or organizational decision—making structures beyond the family. Societies classified as Family plus extended ties are similar to family-level societies,

except that such groups also consistently exploit extended kin ties or non-kin alliances for specific purposes such as warfare. In these circumstances decision-making power is ad hoc, ephemeral, and diffuse, but high status males often dominate the process.

In terms of bands, the next stratum, Henrich et al. (2004:16) say,

Bands consist of both related and unrelated families that routinely cooperate in economic endeavors. Decision-making relies heavily on group consensus, although the opinions of high status males often carry substantial weight.

The next grouping which Henrich et al. (2004:17-18) examine in terms of sociality are clans and villages:

Clans and villages are both corporate groups of the same level of complexity, and both are usually larger than bands. Clans are based on kinship, tracked by lineal descent from a common ancestor. Decision-making power is often assigned based on lineage position, but prestige or achieved status may play a role .... Villages operate on the same scale of social and political organization as clans, but consist of several unrelated extended families. Decision-making is usually vested in a small cadre of older, high-status men who may compete fiercely for prestige.

Clans can be grouped into multiclan corporations (*ibid*):

At a larger scale of organization, multiclan corporate groups are composed of several linked clans, and are governed by a council of older high-status men – assignment to such councils is often jointly determined by lineal descent and achieved prestige. Multiclan corporations sometimes act only to organize large groups in times of war or conflict, and may or may not play an important economic role.

The largest non-Western groupings which Henrich et al. (2004:18) investigated, on the assumption they would exhibit sociality traits were chiefdoms, described thus,

Often larger than multiclan corporations, Chiefdoms [sic] are ruled by a

single individual or family and contain several ranked clans or villages. Rank of individuals, clans, and villages usually depends on real or customary blood relations to the chief. Economic organization and integration in chiefdoms are more intense than in multiclan corporate groups, and chiefs usually require subjects to pay taxes or tribute. Such payments allow for the large-scale construction of irrigation works, monuments, and public buildings, as well as the maintenance of standing armies.

We cannot presume that this reflects the earliest way human sociality developed or that we can make assumptions about the dimmest biological beginnings. Certainly Niccol's satire is not about groups smaller than chiefdoms. But from a biological view, the collective intentionality, the capacity to categorise and process information and joint problem solving related to pattern recognition underpin all these societies. The unique human characteristics of sociality — “cooperation, commensality, morality [...] capacity for intention attribution, planned deception, and the highly structured nature of social interaction” to form interdependent networks (Enfield & Levinson 2006:2) is evident in any human society.

In biological terms human sociality is characterised by the tendency of individuals to form communities, to engage in interactions, to share problems, solutions and decisions and to collectively focus on securing a goal. These complex processes in sociality are enabled by extensive biological underpinning.

### **2.3.1 Collective intentionality**

Tuomela (2007:217), citing Tomasello, Carpenter, Call, Behne, and Moll (2005) as well as Tomasello and Rakoczy's (2003) findings about collective intentionality says,

[t]hey ... discuss and, to an extent, defend the phylogenetic hypothesis, according to which, based on group selection, humans evolved skills and motivations not only for competing but also for collaborating with

each other in activities involving shared goals and joint intention and attention. ... [T]hey also argue, in part on the basis of their experimental work, that selection for good collaborators requires capacity for intention reading and motivation for sharing psychological states with others.

Competing as opposed to collaborating suggests little collective intentionality. As soon as cooperation becomes important many things can happen. Significantly there seems to be a consensus on the development of language beginning to appear, as Tuomela (2007:217) notes, “They have recently argued ... that the capacity for collective intentionality is required to account for language capacity and cooperativeness in humans”. Bickerton (2007:167-168) places the development of language within the field of collective intentionality, arguing that over hundreds of thousands of years our early ancestors needed to cooperate with a collective intentionality to work on “recruitment for carcass-exploitation”. His argument for how humans made language and language made humans fits neatly into the idea of co-evolving culture and genes.

A further spin off of adaptations like cooperation in terms of cultural evolution is that there are benefits (this especially so in the Pleistocene era — 2,588,000 to 11,700 years ago — when climatic conditions favoured cooperation for survival). There is also room for enormous variation between groups so, as Boyd and Richerson (2005:143) say, “... group selection is a much more important force in human cultural evolution than it is in genetic evolution. We think the best evidence from archaeology suggests that humans first began to rely on cumulative cultural adaptations roughly a half million years ago”. That is a long time to contemplate.

Other traits in social behaviour are also important. One such is pattern recognition.

### 2.3.2 Pattern recognition and episodic or autobiographical memory

Pattern recognition is another of the biological prerequisites that facilitates sociality. The primary function of pattern recognition for humans involves identification of faces among mammals (Meltzoff 1995). The ability to recognise faces is expanded with further brain development in children allowing them to identify objects, differentiate between objects and symbols, so making use of their capacity for abstract thinking (Figure 2.4).

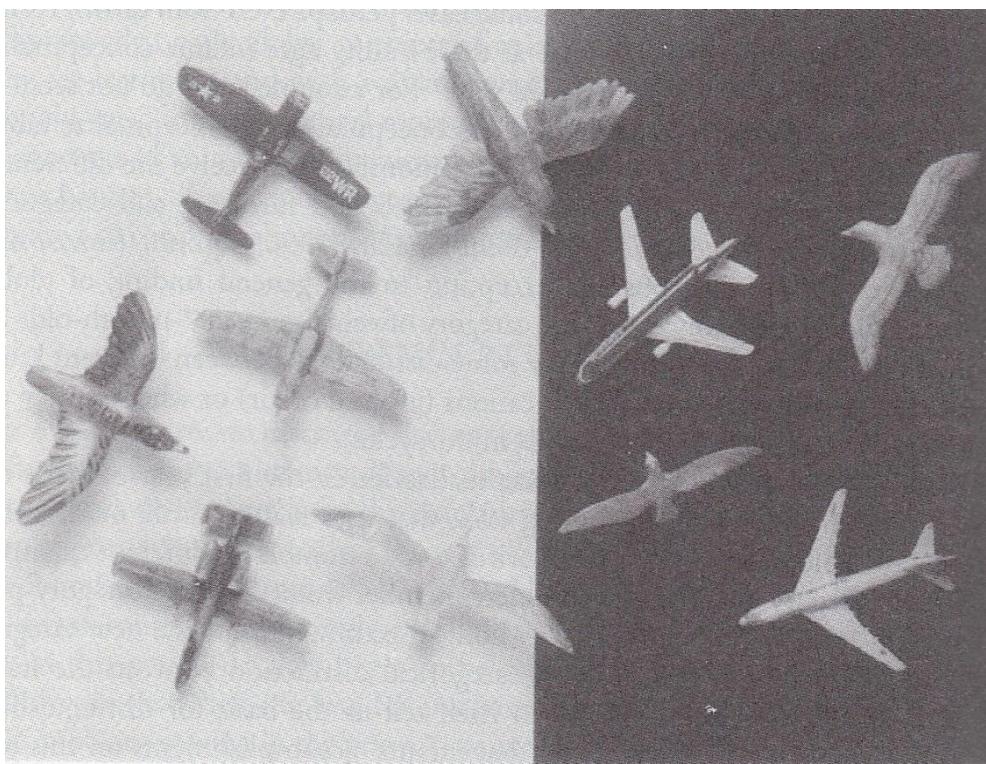


Figure 2.4 Mandler's example of successful categorization of plane and bird models by 9-month old children (Margolis & Laurence 2007:194).

Episodic memory or autobiographical memory (Tulving 1984) plays a part in our ability to analyse and plan events and is another way in which the resource of pattern recognition is developed in humans. We remember things which we have experienced personally, like our mother's face. Episodic memory is usually distinguished from procedural or implicit memory (Squire & Schacter 2002).

### **2.3.3 Information and categorising**

The capacity to categorise is an extremely significant and biologically based phenomenon in human cognition for successful sociality. As Givón (2005:39) states, “Categorization — the mental representation of individual tokens of experience as members of recognizable recurrent types — is one of the most profound adaptive moves in the annals of biological evolution”. He goes on to say, “Sorting tokens of experience into separate categories is the foundation upon which biological organisms structure their adaptive behavior. One's mental categories determine how one responds — with decision and action — to one's physical, biological, mental and social environment”. Unless there is the capacity to categorise, from amoeba to theoretical physicist, the chances of successful survival are diminished (Givón 2005:39-41). What counts biologically in the act of categorisation is that the bulkiest information should be categorised fairly rapidly and with a low incidence of error. For that sort of biologically grounded information processing system the information will be “repetitive, frequent and highly predictable; and/or of great adaptive urgency or relevance” (Givón 2005:47-48), as in our use of our motor skills in which repetition enables skill to develop.

Categorisation can be broadly described within cognitive sciences as a process in which objects and ideas are recognised, differentiated, and understood (Cohen & Lefebvre 2005) for the purpose of illuminating relationships and links between those objects and ideas. Before making connections between, and linking objects and ideas, information of the automated processing type from numerous sources relies on “discrete, hierachic, categorial structures” (Givón 2005:48).

This is also how stories are made out of a welter of information which is processed through recognition, differentiation and comprehension, but there is a conflicting type of information processing need that has to do with fine contextual discrimination of “small but relevant minorities” (2005:48). So the

categorisation of information is a hybrid type of action. In this fine contextual discrimination we are more likely to make errors, the processing is slower and as Givón states (2005:48-49) it

... must allow fine-grained discrimination of shades and gradations, contextual scanning, and pragmatic judgements of relevance. Irrelevant information is ignored. Relevant information is sifted more finely before filing and action decisions are made. Understandably, the processing of 'outlier' information remains un-automated and heavily dependent on the more powerful, energy consuming but slower 'attentional system'.

From these cognitive processes the ultimate human activities of seeking — and making — meaning are also derived. But there is another elemental trait we share with primates and that is play. Play and humour are inextricably bound together.

#### **2.3.4 Laughter and sociality**

A unique trait of humans is their capacity to laugh and enjoy humour. Gervais and Wilson (2005:402-3) suggests that laughter as “a function of humor” works towards helping groups to be cooperative and cohesive; and he suggests “the contagious nature of laughter can function to couple the emotions and coordinate behaviors of the individuals within a group”. Laughter spreads positive affect through a group which is goal-orientated. The construal of other minds which is basic for survival is built on communication and cooperation (Givón 2005). The possibility of reading other people's possible feelings as well as their intentions or of empathising with them is one of the highly developed human features of fictional narratives.

#### **2.3.5 Narrative as part of sociality**

Narrative or story is one of the ways that humans make sense of events which happen to them which they then have the option to impart to others. Narratives

use cause and effect as a strong impulse to organise the events and affect plays a large part in relaying a narrative. The emotions most commonly agreed on as basic to human experience are fear, disgust, anger and love. However Hogan (2003:252) expresses the sense which many scholars have been identifying in the studies of emotion from psychology, neuroscience, history, medicine, even sociology:

... [s]pecifically, I do not believe that our emotions are structured in so discrete a manner as to allow strict division into emotion categories, followed by some sort of hierarchization in which some of these well-defined emotions form the basis of other emotions. It is, I believe, a mistake to understand emotion on the model of, say, atomic physics or molecular chemistry. Unlike atoms, emotions do not begin with well-defined boundaries and fully specified constituents. On the other hand, it is clear that there are clusters of feeling, behaviour, and idea, that are in effect biological givens of emotion — “proto-emotions,” as we might call them. A subset of these acquire [sic] prototype status because they are biologically salient — through, for example, spontaneous facial expressions — presumably for functional (thus evolutionary) reasons.

Collaboration, which is underpinned by collective intention and enables culture to be passed down through imitation or language, is significant for the production of narratives, fictions, stories, beliefs, values, norms and ethics (Bieseile 1993). But genes and culture co-evolve so forms of collaboration from hominids to modern humans evolve significantly and innovatively too (Larson 2009).

There is, however, one element of emotion related to evolution which seems to have little to do with adaptation (and more to do with human hypertrophied mental development-cognition) which Hogan calls “wonder” and part of our delight in narrative has to do with the sheer pleasure of recognising patterns in the stories. Aesthetic pleasure is bound up with boredom versus curiosity and sensitivity to those two feelings — what is the creator of the cultural object “up to”. Hogan (2003:261-2) reminds us that

... [f]rom a very early age, children delight in patterned sounds and images. For example, as to the former, from about seven months, babies begin to engage in spontaneous rhythmic babbling... . This undoubtedly has a function in aiding language acquisition, as Locke and others have argued. However, from the baby's point of view, that is irrelevant, at least initially. Infants engage in rhythmic babbling at least in part out of simple enjoyment. In short, they are not entirely hard-headed pragmatists setting out to practice their language skills. They are also playful children having fun. Propensities to enjoy verbal and visual symmetries, rhythms, and so on, develop as we grow, yielding an emotive relation to objects that involves attraction, but is not a matter of affection or lust. This is a sort of proto-aesthetic sense. Its eliciting conditions are what we call 'beauty'. Its associated feeling is a proto-form or ancestor of what we awkwardly refer to as aesthetical pleasure, but is perhaps more aptly characterized (following the Sanskrit theorists) as wonder or wonder/delight. Its associated actional outcome is contemplation — just looking or just listening. When successful, its result is not precisely happiness, but rather what Abhinavagupta said is the ultimate goal of all art — peace.

The sensation of wonder at what technology or science or fiction offer is readily available to us in the film *SimOne*.

Sperber comments on the role of narratives and stories together with imitation and emulation in human sociality (in Enfield & Levinson 2006:433). The ability to tell stories is the foundation for communication chain processes with their multifarious nature. It is illustrated as a process in Figure 2.5.

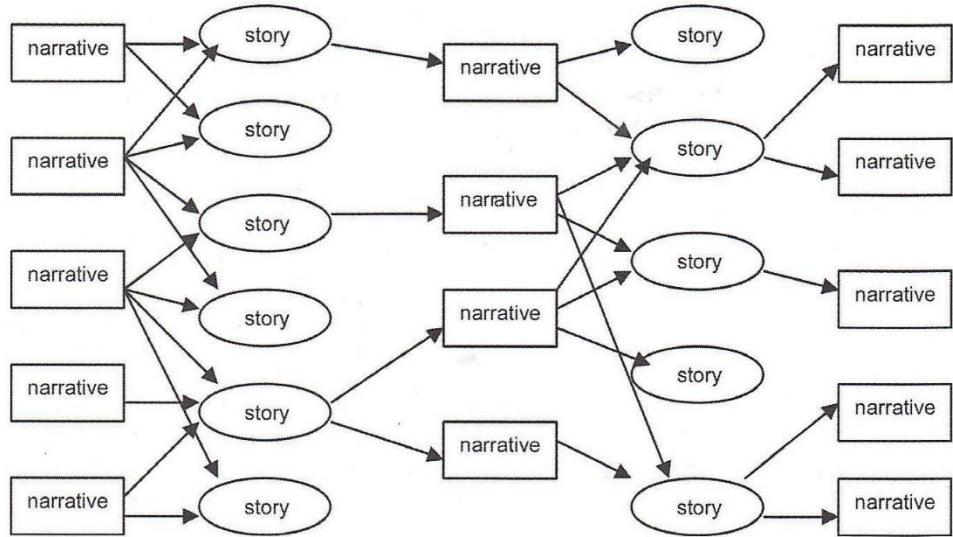


Figure 2.5 Dan Sperber's diagram illustrating simplified fragment of cultural causal chain representing a folktale that can be told and retold in many versions, forms and hybrids on both public and individual platforms (Source: Enfield & Levinson 2006:438).

Sperber's diagram illustrates a simplified fragment of a cultural cognitive causal chain representing a folktale that can be told and retold in many versions, forms and hybrids on both public and individual platforms (Enfield & Levinson 2006:438) as is the case in the foraging hunter-gatherer family groups described by Biese (1993) to pass down beliefs, values, norms and ethics and to enjoy the sense of wonder at the stories.

Mar and Oatley (2008) argue that fiction is an abstraction and simulation of social experience, as such an important way of transmitting culture (2008). In approaching the value of stories Hutto (2007) distinguishes between those who have new propositions to make about them: “(a) enabling us to exercise our imaginations in unique ways; (b) developing our everyday understanding of actions performed for reasons; and (c) external reflection, evaluation and orientation in our understanding of the situations of ourselves and others” (2007:2). Branigan (1992:xi-xii) in discussing influences on cinema studies in

relation to narrative reminds us that in the development of the discipline of narratology currently,

... narrative is increasingly viewed as a distinctive strategy for organizing data about the world, for making sense and significance. As the features of narrative came to be specified more precisely, it was detected in a bewildering number of places: not just in artworks, but in our ordinary life and in the work of historians, psychologists, educators, journalists, attorneys, and others. It became clear that narrative was nothing less than one of the fundamental ways used by human beings to think about the world.

Narratives use enframed stories extensively and *SImOne* is no exception. When a story is framed within another story, a gap, a certain distance to the narrated events is created which allows us to see those events in the extended environment of the framing story. The device of a framing story is a commonplace in human narrations whether literary or visual and enables the teller to achieve numerous goals. From a cultural point of view the teller can enliven and give immediacy to events which her listener was not party to. Thematic and dramatic links between the two stories are invited. The reading and the understanding of a contained story are influenced by the containing story and vice versa, by which means a feedback loop between the understanding of the stories is created. The gap in which the listener/viewer/reader experiences the enframed narrative is provided by the framing narrative in such a way that there is seldom confusion as to which narrative is the framing one and which is enframed. To make sense of the two narratives language provides a range of rhetorical, syntactic, grammatical devices which act as clues to our understanding. In other cultural expressions as in sculpture, for instance, where there is no language the sculptor has to rely on the cultural knowledge and recognition capacity of the viewer's memory.

In film, editing techniques provide clues to how the viewers are expected to understand the film. By the parataxis of clips with many intervening parts edited

out, the syntax of the film story acts in a similar way to language: we understand what is framed and what is framing. Herman (2006:356) in his interrogation of framed poetic narratives comes to the conclusion that a framed narrative is “an image of intelligence as … a ‘society of mind’”. For Herman the ‘society of mind’ is based on Minsky’s famous eponymous work (1988).

By a ‘society of mind’ Minsky suggests that human intelligence consists of innumerable ‘agents’ which have differing kinds of processes, each with their own purposes; the agents have innumerable ways of representing knowledge, as well as methods for producing results (Minsky 1988). However as Herman (2006:356) explains there is “a socially coordinated effort” among those differing agents “to negotiate and make sense of a complex, ever-changing, and sometimes threatening environment”. Framing and enframed narratives in visual and literary objects are a metonymy for the processes of cognition, however schematically represented. The cultural historian Stafford in her book *Echo objects* (2007:206-7) draws an analogy between the processes of cinematic artmaking and the workings of cognition. She emphasises the resemblance between different agents with different kinds of processes that are participating in both, the mind and the artworks. The cognitive agents are disseminated through the internal intelligence of the maker to expressively externalise an understanding of concepts. It is anticipated that a similar transfer of information will happen between the object and the viewer.

## **2.4 BIOLOGICAL BASIS FOR MIMICRY IN HUMANS**

An idea as yet only touched on which is important for the biocultural critique of Niccol’s film satire is that of the synthepron, a simulacrum of a human based on the simulation of innumerable previous screen stars in terms of her outward appearance. Mimicry is closely linked to the idea of deception from a biological perspective. Indeed the mimicry used in the film in the contained narrative is a

deception. Mimicry as in many organisms on earth is a well-developed strategy for survival. To account for the propensity of mimicry amongst humans Darwin speculated on natural selection. The idea of mimicry has played a fundamental role in the evolutionary view of life (Mayr 1982; Goodson 2003). But first to clarify what is meant by ‘natural selection’ — the term means something more precise currently than it does in folk psychology. By natural selection two different things are understood today. Ayala (2005:15) states,

[t]he phrase ‘natural selection’ was used by Darwin to refer to any reproductive bias favoring some hereditary variants over others. He proposed that natural selection promotes the adaptation of organisms to the environments in which they live because the organisms carrying such useful variants would leave more descendants than those lacking them.

But, as Ayala observes, the idea has changed in current biology with the advent of computers to do so much of the mathematics and translate complicated statistics rapidly. He (2005:15) defines natural selection as currently understood,

[t]he modern concept of natural selection derives directly from Darwin’s but is defined precisely in mathematical terms as a statistical bias favoring some genetic variants over their alternates (the measure to quantify natural selection is called fitness). Hereditary variants, favorable or not to the organisms, arise by mutation. Unfavorable ones are eventually eliminated by natural selection; their carriers leave no descendants or leave fewer than those carrying alternative variants. Favorable mutations accumulate over the generations. The process continues indefinitely because the environments that organisms live in are forever changing. Environments change physically — in their climate, physical configuration, and so on — but also biologically, because the predators, parasites, and competitors with which an organism interacts are themselves evolving.

The relationship between the related neurological processes of cooperation and mimicry, imitation and copying among humans probably evolved conterminously in the primate line. In terms of prosociality social selection as a basis for a suite of traits which led to the development of culture would include

the capacity of children to mimic parents. Findings from developmental behavioural psychology about the role of mimicry in human infants support the significance of imitation in the development of abstract ideas (Meltzoff 1995; Frith & Frith 2001). Toddlers easily pick up from parents the code of values for which they are rewarded. Mimicry has advantages. But if mimicry is related to deception and cheating the social norms all groups of humans have different ways of punishing the offender.

#### **2.4.1 Imitation and mirror neurons**

However, at a deep biological level in recent years the presence of mirror neurons in monkeys and humans has given even more significance to the idea of mimicry. Larson (2009:74) explains, “Recent work with mirror neurons in monkeys suggests there is a neurological basis for recognizing what actions might be taken by another individual — the concept of mind reading”. The neuroscientist Rizzolatti and his colleagues discovered the existence of mirror neurons in the human brain which are thought to be the very medium for transfer of culture (Iacoboni, Woods, Brass, Bekkering, Mazziotta & Rizzolatti 1999; Gallese 2003, 2004; Ramachandran 2011) and have been commented on by a number of researchers from different specializations (Bradshaw & Sampolsky 2006; Cook, Johnson & Heyers 2011; Sparenberg, Springer & Prinz 2012).

Mimicry was the underlying key concept of Darwin’s speculation on natural selection and plays a fundamental role in the evolutionary view of life (Mayr 1982:522; Goodson 2003:15). Another important milestone in scientific ideas about the concept of imitation came in the late 1990s when the neuroscientist Rizzolatti and his team announced the discovery of the existence of mirror neurons in the human brain. These are loosely described as the very medium for transfer of culture (Rizzolatti & Craighero 2004; Fogassi, Ferrari, Gesierich, Rozzi, Chersi & Rizzolatti 2005; Rizzolatti & Fabbri-Destro 2008; Ramachandran, 2011).

Findings from developmental behavioural psychology about the role of mimicry in human infants support the significance of imitation in the development of abstract ideas (Meltzoff 1995; Frith & Frith 2001). In relation to mirror neurons, a number of different considerations of simulation have arisen from this research. One such debate is focused on developing the so called “Simulation Theory” and its possible connections and disconnections with the Theory of Mind. The participants (such as Gallese, Ramachandran, Varela and Keysers) in these debates and their attitudes to simulation within or outside of the Theory of Mind (ToM) are complex and beyond the scope of this study. Other debates concerning simulation focus less on theoretical constructions and mostly address the ways simulation enables motor, spatial, emotional and perceptual exchanges between humans. Larson (2009:74) notes that, “The neurosciences have produced evidence that human propensities for conformist and replicative behaviors are reinforced by both cultural and neurological–biochemical reward”.

Gallese (2003:517) suggests that mirror neurons are a basic organisational feature of the human brain. These mirror neurons are thought to be linked to understanding intentions and goals of others according to researchers (Gallese & Goldman 1998; Carr, Iacoboni, Dubeau, Mazziotta & Lenzi 2003; Rizzolatti & Craighero 2004; Gallese, Keysers, & Rizzolatti 2004; Fogassi, et al. 2005; Gazzola, Aziz-Zadeh & Keysers 2006; Keysers & Gazzola 2007; Ramachandran 2011) while other scholars claim mirror neurons play a fundamental role in human interaction, especially in the exercise of empathy (Gallese & Goldman 1998; Gallese 2001; Decety 2002; Decety & Jackson 2004; Keysers 2010). Ramachandran (2011:117) calls the mirror cells in the brain the “neurons that shaped civilisation”. Social neuroscience stresses that through the biologically wired system for simulation and mimesis, empathy and the transfer of culture have been enabled (Emery, Clayton & Frith 2007; Harmon-Jones & Winkielman 2007; Decety & Ickes 2009).

## 2.4.2 Attitudes to imitation and mimicry

Simulation and mimicry have sometimes been undervalued in the past. The rapid overview of the concept of simulation and imitation prior to the findings of science in the 1990s could perhaps include Plato's discussion in the *Republic* (Πολιτεία, 380 BCE) of mimesis as an imitation of reality. As Russel (2007) and Forrest and Kaufman (2008) observe, Plato famously disapproves of imitation as a distortion of reality. The "good" name of the practice of mimesis was revitalized by the reworking of classical Greek ideas (Aristotle's 'mimesis of nature' [4<sup>th</sup> century BCE] and Dionysius's 'imitation of authors' [1<sup>st</sup> century BCE]) and by eighteenth century thinkers such as Kant and Burke, and nineteenth century such as poets Keats and Byron. Longinus's *On the sublime* (1st or 3rd century CE) equated truth with beauty and was later reversed by Kant in his *Critique of Judgment* (1790) as beauty equalling truth where the mere mimetic representation was rejected in favour of genius, aesthetics and idealisation. The long tradition of dramatic representations as imitation was preserved from earliest drama until the eighteenth century. In terms of theatre and the imitation of another human being by actors Naremore (2012:34) says,

[f]rom the eighteenth until the early twentieth century the Aristotelian concept of mimesis governed most aesthetic theory, and stage acting was often described as an 'imitative art'. Denis Diderot's 'Paradox sur le comédien' (1758), for example, argued that the best theater actors played not from strongly felt emotion or 'sensibility', but from 'imitation'.

Nowadays the approach to playing a role as an actor or simulating another human has been radically changed by the ideas of Stanislavski (1863-1938) who used a method to train actors so that they would focus on their understanding of the emotions of the characters whom they were playing from an interior recollection of their own emotion. Further development came with the introduction of Method acting in the theatre in the 1930s and 1940s in New York. As Naremore (2012:34) observes, "By the late 1930s, when

Stanislavsky's ideas were fully absorbed into the U.S. theater and Hollywood achieved hegemony over the world's talking pictures, dramatic acting was nearly always evaluated in terms of naturalness, sincerity, and emotional truth of expression". Naremore (2012:35) goes on to say,

... the metaphor of art as a mirror held up to the world was replaced by the metaphor of art as a lamp projecting individual emotions into the world. Where acting was concerned, 'imitation' became associated with such words as 'copy', 'substitute', 'fake', and even 'counterfeit'. The new forms of psychological realism, on the other hand, were associated with such words as 'genuine', 'truthful', 'organic', 'authentic', and 'real'.

In postmodernist narratives and fiction, simulation has predominantly been viewed through a dystopian lens (*Blade Runner* [1982], *Terminator II* [1991], *The Matrix* [1999]) and as Tofts observes (2002: 264-266) it served to raise questions ranging from forecasting the future of life and technology to blurring of boundaries between real and unreal, between life and its synthetic copies like artificial creatures, robots and replicants. Walter Benjamin (1892-1940), Lewis Mumford (1895-1990), Herbert Marcuse (1898-1979), Rachel Carson (1907-1964) and Theodore Roszak (1933-2011) are the main participants in the dystopian debates. The explanations of dichotomies was the underlying principle in many postmodern debates such as those by Huyssen (b 1942) or Klinkowitz (b 1943) and is the reflection of Cartesian dualistic ideas about the body and mind which were inherited from an earlier age and had coalesced into the publication in 1637 as *Discourse on Method* by René Descartes (1596-1650).

Telotte (1995:86) speculates that films depicting the duality of knowledge's outcomes are connected to the Cartesian mind-body split, especially in the cases where they "depict violent efforts to redefine the human body as some sort of raw material, waiting to be reshaped, reformed by a scientific capacity for artifice". Such science fiction narratives belong to the middle of the twentieth century and earlier decades. The violence towards the body implied by such

attitudes is at variance with what constitutes current understanding of what the connection is between mind and body (where mind is conceived as “our mental representation of the experienced world”) (Roberson 2010:167).

The understanding of a mechanistic idea about the workings of the human brain, body and mind is obviously reflected in stereotypical cyborgian narratives. The unsympathetic Cartesian attitudes towards the body prevailing since the seventeenth century have been undermined by findings about the unity of body and mind by, among others, Varela (1992), Damasio (2006), Blakeslee (2007) and Ramachandran (2011). It is in this context of the body re-unified with the mind-brain, that simulation and socially transmitted cognition is considered in this study.

On the one hand, making things, machines, visual and other cultural objects in our own image is, according to Nelson (2001:251), “resonating with our secret divinizing needs” — a tool for mediating the internal to the external reality and vice versa. Telotte, (1995:87) on the other hand, says of this drive that it operates within the “Pygmalion mould”, serving to question “what it means to fashion or refashion the human”. These two distinct attitudes to human simulacra, one neo-Platonist and the other postmodernist, offer insight into the phenomenon of imitation and the satire of the film under discussion. However, the human simulacrum, and the processes of imitation as a whole, can also be viewed through the lens of cognitive sciences in which, in the last two decades of the twentieth century onwards, the close examination of neural mechanisms making imitation possible and understanding imitation processes have become a priority (Meltzoff 1995; Gallese & Goldman 1998; Rizzolatti & Craighero 2004; Gallese, Keysers & Rizzolatti 2004; Fogassi, et al. 2005; Gazzola, Aziz-Zadeh & Keysers 2006; Ramachandran, 2011).

In postmodernism simulation and its different forms have been well scrutinised

from philosophical angles focused mainly on the cultural and technological production of simulacra (Benjamin 1939; Baudrillard 2003).

## 2.5 BIOCULTURAL APPROACH

To distinguish the critical approach used to analyse the cultural objects in this study from other approaches, the term “biocultural” is used after Boyd (2009:2) who says that,

... [in] literary studies, and in the humanities in general, a biological approach to the human has been anathematized for the last four decades by the recently dominant paradigm that calls itself ‘Theory’ or ‘Critique’. But after announcing decades ago first the death of the author and then the death of the “subject” (the individual), Theory has recently raised the question of its own death, and there has been a widespread cry in literary studies for a return to texts. [...] A biocultural approach to literature invites a return to the richness of texts and the many-sidedness of the human nature that texts evoke.

Although Boyd applies the term specifically to literary texts, it has been applied to a variety of cultural objects as Stafford (2007:1) does in interpreting “everything from autopoeisis to mental imagery” in her discussion of artworks. Prominent in the use of scientific understanding from biology, particularly in relation to narratives, cognition and emotion are scholars like Hobbs (1990), Schwarz (1996), Hogan (2003, 2004, 2008), Hampe and Grady (2005), Kövecses (2005), Oatley (2011).

An understanding by this researcher of the biology involved in cognition and culture cannot be as deep as that of scientists or biologists, but the contagious ideas from those disciplines are flooding into the humanities. Turner (2002:9) sees the ‘cognitive turn’ in the humanities as an “aspect of a more general cognitive turn taking place in the contemporary study of human beings” and stresses that this ‘turn’, while continuing to draw its central questions and

methodologies from the “humanities as old as classical rhetoric”, aims at “combining old and new, the humanities and the sciences, poetics and cognitive neurobiology”. Its purpose, Turner (2002:14), claims is “not to create an academic hybrid but instead to invent a practical, sustainable, intelligible, intellectually coherent paradigm for answering basic and recurring questions about the cognitive instruments of art, language, and literature”.

Richardson (2010), by contrast, observes that the ‘cognitive turn in humanities’ enables the posing of new questions and the reopening of old ones. These questions pertain to the embodiment of cognition (Lakoff & Turner 1989; Lakoff & Johnson 1999), the materiality and malleability of the brain, cognition and metacognition. In eras previous to the ‘cognitive turn’ and neuroscientific knowledge these matters were approached intuitively, for instance by such writers as Jane Austen (1775-1817) or George Eliot (1819-1880) or Nabokov (1899-1977). Boyd (2009:2) insists that the implication of the ‘cognitive turn’ is that “we cannot simply go back to literary texts without assimilating what science has discovered about human nature, minds, and behavior over the last half-century, and considering what these discoveries can offer for a first truly comprehensive literary theory”.

Many different terms are applied to the idea that culture is intimately connected to biology. Sperber’s (1996) term ‘naturalistic explanation of culture’, Boyd’s (2009) term ‘biocultural approach’ to cultural texts and objects, Richardson’s (2010) term ‘cognitive turn in humanities’, and Zunshine’s (2006, 2010) ‘cognitive cultural interplay’ all denote an acknowledgement of the biological underpinnings of culture. The main stress in these approaches to analysis of cultural texts and objects is on the key insight that culture arises out of the particular capacity of human cognition to innovate technologically, to think symbolically, record and reflect, impacting on how humanities approach culture and biology.

According to Zunshine (2010: Kindle, loc 435), that is what drives the understanding that “the contemporary sciences of the mind destabilize the old division between ‘nature’ and ‘nurture’ and open new venues for investigating the role of universally shared features of human cognition in historically specific forms of cultural production”. Besides spreading knowledge about cognitive make-up and processes, these approaches enable new interpretations and perspectives on cultural representations (Boyd 2009; Zunshine 2010).

While for some (Tsur 1992; Richardson 2004; Miall 2006) seeking the common ground for the context and methodologies of the cognitive interpretations/biocultural approaches with the existing literary-theoretical paradigms as the focus, it is the “inclusiveness toward a full array of contemporary literary approaches” that is valuable and productive for cognitive literary studies, as Hart claims (2009:329). Zunshine (2010:1) observes “today this position has become one of the key features of the field”. Richardson (2010: xii), however, warns against a shallow bricolage of cultural studies with neuroscience, although he also admits that he finds the “dizzying variety of approaches that continue to proliferate [...] a sign of its early strength rather than amateurishness or professional disarray”. Varela (1992) explains that one of the reasons for such diversity of approaches within the ‘cognitive revolution’, or ‘cognitive turn’ has been brought about by the specific research and funding allocation policies in the United States. His explanation stresses that the access to resources, one of the biological underpinnings of cultural evolution, weighs on the direction in which culture evolves.

### **2.5.1 Self as a vehicle for cognition**

However, before any discussion of the cognition-culture nexus is engaged as a cultural criticism, the argument of Damasio (2010) must be acknowledged about the significance of the self as a vehicle for cognition and specifically meta-cognition. It is the privilege of humans to have a heightened sense of the self.

This sense of self Damasio (2010) argues has its deep roots in the homeostatic mechanisms which are evident at every level of biological organisms. Klemm (2011:16) raises the question of, “how a conscious sense of self is represented in the brain”; his answer from a neuroscientific point of view is that,

[I]like all senses, the sense of self must be contained in patterns of nerve impulses. Unlike the traditional senses that are registered by impulse flow in relatively simple, pauci-synaptic projection pathways, the sense of self is a system-level phenomenon that may be generated by impulse patterns in widely distributed complex and interacting circuits.

How different parts of the brain are involved in the emergence of consciousness, the self and the mind, has been for the last few decades, the subject of utmost interest and intense research undertaken within cognitive sciences that stretch across related disciplines like neuroscience, linguistics, artificial intelligence, psychology, anthropology and philosophy of mind (Varela et al. 1992:4). The Self is typically and popularly defined as the essential being, both conscious and unconscious, of a person that enables it to distinguish itself from others and is an object of reflexive and contemplative actions. Psychological and philosophical views of the Self have been constructed by a number of psychologists, scholars and researchers who arrived at, or ascribed various attributes, ‘components’, or divisions of the Self. They range, to mention a few, from Jungian (Jung 1968) opponent forces, the Ego and the Self, Winnicott’s (1965) true and false Selves to Lewis’ (1990) coupling of the categorical Self with the existentialist Self.

The ‘splits’ and divisions of the Self prominent in the above theories are reconciled in Damasio’s (2010) theory of consciousness and the Self in which he argues for them as biologically emergent products of homeostasis. He proposes that it is the brain stem, often considered by many psychologists as the triune brain’s reptilian core of human conflict (Kral & MacLean 1973, MacLean 1985, 1990) and the ‘primitive’, ‘un-updated’ and inelegant piece of brain hardware

(Linden 2007:3), which enables the rise of consciousness on the primordial level where the “primordial feelings and their emotional variations generate an observant chorus that accompanies all other images going on in the mind” (Damasio 2010:193). It is its very rootedness in biology and neuroscience, on the cytological, behavioural and meta-levels, which makes this theory a particularly attractive and suitable base for conducting a biocultural analysis of an art object.

Damasio argues that consciousness is a result of the evolutionary development stemming from the cytological level upwards to form behavioural patterns and the cognitive level from which the success of those patterns can be assessed. It is the accumulation of the perceptions of the gratifying and painful events and encounters filtered within the stem brain that gives rise to the awareness of otherness, explains Damasio. The mysterious nature of consciousness, therefore, ascends out of the even more mysterious chemical actions and reactions adhering to and driven by the principles of homeostasis.

Without a sense of self it might be impossible to enjoy the pleasure of the contemplation of cultural objects. Klemm (2011:19) explains the biological basis for the sense of self as consciousness: “Consciousness is intrinsically experiential and first-person subjective”. To expand on this sense of self he (2011:20) explains in biological terms that,

... the operational level of brain organization resides in internal physical brain architecture (i.e., canonical cortical column circuits), and is the basis for conscious sense of self. Thus the operational level ties neurophysiological and subjective domains together. The operational level constitutes consciousness, rather than “emits” it in some mysterious way. Consciousness is self-presenting at the level of operational architectonics of the brain, but is emerging in relation to the neurophysiological level of brain organization.

The implications of a self which is conscious of itself are important for producers

of cultural objects. This has led Damasio (2010:295-296) to hypothesise about the value of art:

... [a]rt became a privileged means to transact factual and emotional information deemed to be important for individuals and society, something established in early epic poems, theater and sculpture. Art also became the means to induce nourishing emotions and feelings, something at which music has excelled through the ages. No less important, art became a way to explore one's own mind and the minds of others, a means to rehearse specific aspects of life, and a means to exercise moral judgement and moral action.

The evolutionary success of the arts was in the variety of values assigned to them by humans as a compensation for all the imbalances of human suffering, but their compensatory value is biologically prompted by the need for the organism to maintain an optimal homeostatic range in their interiors. This optimal range is recognised by our consciousness as Damasio (2010:55) explains, “optimal ranges express themselves in the conscious mind as pleasurable feelings; dangerous ranges, as not-so-pleasant or even painful feelings”.

Although not necessarily opposed to Damasio’s theory, Mithen (2000) constructs a different scenario of the evolution of cognition. His is a modular theory of the brain that relies on the speculation that the separate areas (modules) of specialisation for language, tool making and symbolic thinking started first to emerge and continued to gradually overlap and merge with each other. This anthropological theory attempts to explain the rise of human cognition but it does so through the analysis of the symptoms of cognition rather than its biological causes; and an individual being with her personal autobiography does not play as significant a role as in Damasio’s illuminations on the issue of the Self.

Damasio’s theory is useful for the interpretation of a film about disembodiment, a simulation with no sense of self, exactly because of his claims that the

consciousness arises directly out of the body. Mithen's ideas and methods can contribute to the analysis of the film through evaluation of the trail evidence that results from the interactions between the 'embodied' film director with his disembodied synthespian.

### **2.5.2 The importance of biology**

There is a tendency in the descriptions of the relationship of the humanities and sciences to suggest that over time there is a continuous migration of the so-called soft sciences toward the hard science arena because of the enormous expansion of scientific knowledge. Frith (2007:4) gives the example of biology being "rather softer science than physics and chemistry, but this changed dramatically with the discovery that genes consist of precise sequences of base pairs in DNA molecules". However, Boyd and Richerson (2005:375) state that, "Biology is an immense enterprise whose purview ranges from the physics of enzyme catalysis to the role of gene expression in cell differentiation to the evolutionary origins of flight to the global carbon cycle". With a discipline as far-reaching as that it would be unusual if it did not have an impact on the humanities. Biology is very coherent as a discipline but its range is wide and is not organised in the same way as the humanities with its differing disciplines. Again the argument of Boyd and Richerson (2005:375) is illuminating:

One reason why biology remains a unified discipline is that the science has a small set of unifying problems at its core. Physics and chemistry underpin everything. Genetics, cell metabolism, ecology, and evolution are relevant to all organisms, and physiology is common to all multicellular life.

One of the "transforming ideas of the 20th century" say Huss-Ashmore (2005:6) has been the emergence of the "synthetic theory of evolution". To understand this, Ayala's (2006:4) description of the concerns of modern biology can be presented:

Three different, though related, issues have been the main subjects of evolutionary investigations: (1) the fact of evolution; that is, that organisms are related by common descent with modification; (2) evolutionary history; that is, the details of when lineages split from one another and of the changes that occurred in each lineage; and (3) the mechanisms or processes by which evolutionary change occurs.

Darwin must get the credit for the new idea of ‘population thinking’ to biology, as before that the general belief was that people in terms of being a species were “essential, unchanging types, like geometric figures and chemical elements” (Richerson & Boyd 2006:5). The climate that enabled the emergence of the biocultural approach is complex and includes, on the one hand, among others, contributions by Dawkins (1976), Hofstadter (1981, 2000, 2007), Latour (1993, 1999a, 1999b, 2005), Gell-Mann (1994), Dennett (1997, 2000) and Wilson (1999), while on the other hand developments in cognitive science have also been the trigger for the spread of ‘contagious ideas’ about the biologically grounded nature of culture. This distinction is made only for the purpose of reviewing the literature on the subject of the biocultural approach and is as arbitrary as the rise of the climate that enables it. The important fact is that biology and culture are intertwined and the process of re-evaluating ideas about culture and biology and the research on cognition must overlap. Dennett, working from the perspectives of philosophy and cognitive science (1997) places the cultural idea of ethics as originating in evolution while Latour (2005), by developing a concept of science as a social actor which participates in forming cultural representations and perceptions, highlights the groundlessness of the divide between humanities and sciences.

### **2.5.3 Ideas at the intersection of science and the humanities**

Knowledge of human and primate biology has begun to impact on the humanities (Carroll 1995; Hogan 2003, 2010; Eakin 2004; Spolsky 2010; Palmer 2010; Starr 2010). Some researchers take it on board in a way that expands the discourse; good examples are Stafford (1999, 2007), Herman (2003), Zunshine

(2006, 2010), Boyd (2009, 2011) and Lehrer (2011). The dual inheritance theory — namely, that culture and genetic evolution are entwined — received a major scientific boost from Boyd and Richerson (1985) among many others who as early as the 1970s and early 1980s spoke (Lumsden & Wilson 1981) of biocultural evolution. There is a movement amongst scientists such as Sperber (1996) and Mithen (1996, 2005) who, in their differing disciplines of anthropology, archaeology in examining cultural objects, have expanded on the way in which culture and cognition are inextricably interlinked. Sperber (1996) adopts a social- scientific view of culture and its spread by suggesting that culture spreads like an epidemic. On his view mental representations move from private individuals into the public sphere and remain over centuries, as traditions, or are short lived, as fashions, or to return to the disease metaphor as infections lasting for different time spans. Culture explained in this way from such a broad perspective, as instantiations of mental representations, enables the biocultural critic to approach objects not as discrete manifestations of human agency, but as naturally developed mechanisms which transmit cognition.

Sperber gives both interpretative and causal explanations of the social and his idea for developing “science of the social” or “naturalistic approach to culture” as the realisation that such biocultural approaches cannot rely on a single Grand Theory but need to be built upon “a complex of interlocking, middle range models” (1996:6). By asking questions why certain cultural representations are more successful than others, Sperber targets the nature of representations as both private and public, which when circulated contribute to the dissemination of ideas and propagate cognition.

Niccol’s *SimOne* is an example of such an exchange between public and private representations that address viewers’ understanding of simulation. Functionalist, structuralist and interpretative models, Sperber argues, do not serve anthropology as successfully as epidemiological ones. Sperber’s model of the

“epidemiology of representations” (1996:50) aims to explain how two types of macro-mechanisms (individual and public) drive “transformation of mental representations” and “alterations of the environment” which results in “the transmission of representations”.

These observations, from the anthropological perspective, add weight to the biocultural approach by providing a causal explanation of how cognition is propagated through cultural objects by personal and interpersonal means where both mental and public processes of representation and their spread are acknowledged. The value of this perspective is that it challenges traditional views of culture as residing in cultural objects.

Although Mithen from his paleontological and archaeological perspective also supports the idea that material culture and social structures played a crucial role in cognition along with biology and language, his reasoning towards this conclusion differs from Sperber’s. Mithen (1996) argues for the modular mind that contains special modules for specific domains that govern intelligence in different areas such as language, sociality, technical ability, as well as social and individual memory. It is the exchange between these modules and gradual formation of feedback loops between them, Mithen claims, which led to the fluidity of the modern mind in which culture and biology craft each other.

## 2.6 SIMULATION

Darwin (1889-1882), in his major work, *The descent of man and selection in relation to sex* (1871) acknowledged Wallace’s (1823-1913) view<sup>6</sup> that “much of

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<sup>6</sup> 1863 paper by Alfred Russell Wallace entitled “Remarks on the Rev. S. Haughton’s paper on the bee’s cell, and on the origin of species.”

the intelligent work done by man is due to imitation and not to reason" (Darwin 2008:59). The connection between the ability to imitate and the capacity to sympathise and feel empathy that has been recently illuminated by neuroscientific research on mirror neurons (Rizzolatti 2004, 2005, 2008; Gazzaniga 2005; Ramachandran 2011) had already been hinted at by Darwin and some of his contemporaries. Darwin already observed in 1871 (2008:88) that

... [s]pecies which are not social, such as lions and tigers, no doubt feel sympathy for the suffering of their own young, but not for that of any other animal. With mankind, selfishness, experience, and imitation, probably add, as Mr. Bain has shewn, to the power of sympathy; for we are led by the hope of receiving good in return to perform acts of sympathetic kindness to others; and sympathy is much strengthened by habit.

While imitation is mainly considered as more basic and less premeditated behaviour than the more complex simulation, it is at the very core of the actions of mirror neurons (Rizzolatti & Craighero 2004; Gazzaniga 2005). Simulation happens on a cytological level, through a behavioural one to the meta-level of human cognition. Markman, Klein, and Suhr (2009:vi) report that, since the early 1980s, the research targeting the mental nature of simulation has increased considerably and branched out to include scientific areas of interest such as the act of imagination and the generation of alternate realities. Some researchers have focused on what happens in the brain when an individual is mentally simulating an action or forming a mental image, whereas others have focused on the consequences of mental simulation processes for affect, motivation, and behaviour.

In this study simulation is acknowledged as a phenomenon that acts on many levels of biological scaffolding ranging from the cytological level of mirror neurons, behavioural, psychological level, to cognitive and metacognitive levels in which simulation is manifold (such as stories and art objects). This goes back to 'simulation' for survival purposes in a huge variety of organisms on earth

(butterflies, spiders, fish, for example).

Moravec (1998:2) claims that the increasing computing scope to create simulations gives ground to

the premises and techniques of physical science, [which] has the unexpected consequence of demoting physical existence to a derivative role. A possible world is real, and only as real, as conscious observers, especially inside the world, think it is!

He speaks of the future post-human possibility of expanding our powers of simulation to such a degree as to enable a simulation of ancestral history. And that our reality might be exactly one of such simulations produced by our progeny — the present controlled by its future. The very complex nature of simulation that relies on invented events, artificial environments or deceptive actions is often the aggravating, non-mitigating element in human negotiations about understanding human nature and the nature of reality. Such speculation, however, is beyond the scope of this study.

Within the humanities the idea of the simulacrum was largely popularised by the French philosopher Jean Baudrillard<sup>7</sup> who in his works (1996, 2003) and in his short essay (1991:1) observed that the efforts put into creating simulacra are of a utopian thrust in which “the separation from the real world is maximal — it is the utopian island in contrast to the continent of the real”. Furthermore, according to Baudrillard, these efforts are underpinned by concerns of how humans produce their world — the act and the media of production.

In accordance with his emphasis on media and production he devises three

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<sup>7</sup> 1929-2007.

“orders” of simulacra which unfold with an increasing complexity as the progression of science and technology prompts more and more evolved acts of replication. The basic idea is that the more complex and advanced means of reproduction, the more porous the boundaries between reality and the simulacrum, culminating in the collapse of originality. Eco (1986:45) declares that we proudly judge simulations as more satisfying and desirable than reality: “we not only enjoy a perfect imitation, we also enjoy the conviction that imitation has reached its apex and afterwards reality will always be inferior to it”. That simulation has expanded itself into a global continent with its simulated environments, virtual beings, avatars, synthespians, and CAVE (Computer Assisted Virtual Environment<sup>8</sup>) situations is true of course.

These cultural outcomes of simulation are engaging, educational, entertaining and are testimony to a preoccupation with simulacra especially in technological and artificial intelligence spheres. What is, however, important for the biocultural approach to cultural objects in terms of simulation, is the investigation of the biological base that enables it in humans. Humans are constantly trying to understand themselves. The value of these meditations is at the core of the effort to understand human cognitive processes and actions. Such meditations and debates are undertaken by a number of scientists and philosophers who aim to acquire knowledge about the role of simulation in, for example, the formation of mental concepts, representations of reality, attribution of the internal characteristics of mental states to others, or how simulation supplements and relates to other cognitive mechanisms. In terms of simulation and the philosophical discussion about it, this study is limited to this brief discussion, preferring to focus on the biocultural elements of a cultural critique.

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<sup>8</sup> The abbreviation CAVE overtly alludes to Plato’s ruminations on the nature of simulation.

### **2.6.1 Consciousness and cognition**

The unfolding and arising nature of consciousness is explained by Damasio as a series of biological events which are organised into ‘progressive’ levels starting at the cytological base of the ‘protoself’ which is a ‘stepping-stone’ in the construction of the ‘core self’, which is required for the further ensemble of the autobiographical self. The ‘protoself’ is the level at which an “integrated collection of separate neural patterns that map, moment by moment” (Damasio 2011:190) all the primordial feelings and generates an ‘observant chorus’ of interoceptive system that “generates not merely body images but also felt body images”.

This insight into the processes which enable consciousness and cognition gives the cytological level a paramount value as a principal actor. It brings about the utmost appreciation of life at its very basic level and is at odds with the typical, hierarchical way of evaluating living systems. The autobiographical Self is a potential ground for the rise of a reflective Self which, according to Damasio, is processed out of the speculative ‘events’ and brings about the phenomenon of culture as one of its major consequences. A parsimonious definition of the Self is that Self is not Self but a Self-process. This view is in accordance with the latest understanding of consciousness that consciousness operates on processes rather than on states (Rowlands 2010). The application of these views to the film *SImOne* is revealing for its underpinning in bodiless simulation and it accounts for the accelerated disintegration of Taransky’s autobiographical self as he repetitively fails to evaluate and reflect upon his doings and silences: his ‘observant chorus’.

### **2.6.2 Propagation of cognition**

Vygotsky (1896-1934) was one of the first researchers to conclude that learning happens within a social system and that distribution of knowledge is socially

enabled. Since his observations (1929, 1933, 1978, 1987) about how education is enabled through societal interaction, many contributions have been made to the field of distributed cognition with Piaget (1952, 1954), Minsky (1988), Hutchins (1995) and Clark (1997, 2003, 2010) as the leading figures that mark the progression of this discipline.

The ways culture disseminates cognition by means of cultural objects when they are produced, viewed, interpreted and interacting with agents in society is a topic which has become prominent since the 1970s (Enfield & Levinson 2005; Latour 2005; Dror & Harnad 2007; Kronenfeld 2008).

### **2.6.3 Biological basis of narratives**

Trying to make sense of the environment and life through the mechanism of various narratives is a typical human cultural practice. Damasio expands on this notion and explains how biologically felt body images generate proto-consciousness. Hogan (2003:253-263) cautions against an uncritical application of the biological base for emotions, but supports the idea that it is our biology that enables the emergence of feelings and also speculates that similarly to the human brain, emotions are malleable and can be appealed to through various cultural means (2003:263).

Damasio (2004) asserts that it is a culturally acquired ability to control emotions: “We can be wise to the fact that our brain still carries the machinery to react in the way it did in a very different context ages ago. And we can learn to disregard such reactions and persuade others to do the same”. The evolutionary nature of emotions is activated when the amygdala’s primitive drives and desires can be — as they frequently are — overridden by the prefrontal cortex, explains LeDoux (1986). With such a basic biological view in mind, observations by many narrative theorists are that “stories proceed in segments” (Hogan 2008:161).

The neuroscientific view is that areas of the human brain are compulsive story-tellers and that the segments of stories are continually generated by the “narrative-constructing function of the left cortex [which] cannot be switched off” (Linden 2007:229). Even during sleep, the ongoing activity of story-making by humans promotes, according to Linden, the acquisition of religious thought and helps expand speculative thinking. It is the speculative and evaluative ‘behaviour’ of the possible outcomes of any particular action, whether fight or flight, that is at the core of the reflective Self.

Narratives carry emotions and values, and although as Oatley (2004:xi) observes “in some ways we humans distrust emotions, we also believe they embody our most important values. If you want to know what people value, listen to their stories”. It is apparent from the narrative of the film *SlimOne*, that Niccol values the wisdom of the child, the Hans Christian Andersen’s ‘truth spotter and teller’ in the story of *The Emperor’s new clothes*. It is also evident that Niccol reveals the cult of celebrity to be a result of unquestioning, non-critical passive behaviour and he provides an opportunity to transmit and spread these values through the means of a narrative, pointing up through satire and attention-getting devices where he is directing his barbs.

That emotional expressions are part of our evolutionary past, had already been proposed by Darwin (Darwin 1872; Oatley 2004:x). Hogan (2003) goes to some lengths to show the close connection between emotion and narrative. This he does by examining universal facial expressions of some basic emotions which allow human beings to experience empathy. By empathy he (Hogan 2003:81) means that “[e]mpathy involves, among other things, a conscious or unconscious inference to what someone else is feeling”. Hogan (2003:82) develops his theory further and observes that,

... we might say that our lexical entry for any given emotion term includes not only some link to the feeling of the emotion (typically via

memories ...). It also includes some account of the kinds of situation that give rise to the emotion and some account of the kinds of expression and action that result from an emotion.

Hogan (2003:83 ff.) goes on to distinguish four important hypotheses, “... when we judge someone to have a certain emotion, we do so by comparing his/her situation with prototypical situations and his/her response with prototypical responses”. Then he describes how stories can be prototypical but “... one difference between prototypical narratives (for example, stories about lovers) and nonprototypical narratives (for example, stories about the operation of appliances) is that the former engage our feelings, or at least address and appeal to feelings”, or, put another way: “Prototypical narratives — including literary narratives — are generated largely from prototypes, prominently including the prototype eliciting conditions for emotions”. Again stressing the relation between narrative and emotion Hogan (2003:90) distinguishes between “junctural emotions” as “there are emotions that have their most important function at specific points within the course of an encompassing narrative” and other emotions.<sup>9</sup> The other emotions, happiness or sorrow refer to the outcome of the whole story and so he terms them “outcome emotions”. His third hypothesis (Hogan 2003:94) is elaborate:

Romantic union and social or political power (including material prosperity) are the two predominant prototypes for the eliciting conditions of happiness. Thus, they are the prototypical outcomes from which our prototype narratives — including literary narratives — are generated. Put differently, romantic union and social or political power are the goals sought by protagonists in prototypical narratives. The corresponding prototypes for sorrow are the death of the beloved and the complete loss of social or political power, typically through

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9 Hogan (2003:91) explains junctures: “junctures are not objective features of a causal sequence, but responsive features, features of an agent’s own realization, an author’s reflection, or a reader’s concern and consideration”.

social and political exclusion, either within society (through imprisonment) or outside of society (through exile).

Understood in this way Niccol's narrative ends in happiness — but through further deception.

Finally Hogan's (2003:98) last argument about the relation of emotions to narrative (literary for him) is, "Cross-culturally, there are two prominent structures of literary narrative, romantic and heroic tragicomedy, derived respectively from the personal and social prototypes for happiness". The four 'hypotheses' of Hogan seem to be universal human models for narrative.

Narratives are some of the cultural means by which emotions are shared and for Hogan (2008:153), the 'lyrical' moments set against the segments of narratives are elaborations of feelings; they bring about the emotive responses in the public and govern the general cognitive principles of stories. Through the compression of emotions that lyric poetry, for instance, affords, it enables a particular proto-emotion, claims Hogan, and "the event in a lyric poem draws its meaning and affective force from its tacit relation to a prototype for an outcome emotion and its location within a narrative structure implied by that prototype" (2003:153).

He also claims that the "relation of lyric poems to prototypical narratives and emotion prototypes is an absolute universal" and that the "prototypical lyric poems are tacitly located at junctural moments of heroic or romantic tragicomedies and imply the emotion prototypes for those genres" (2003:153). There is an analogy between this view of connections between the emotion prototypes and prototypical narratives that propel the behaviour of making narratives and the view held by Damasio about the direct relationship between the accumulation of felt images of the body and the rise of consciousness. In both views, it is the emotions that are being accumulated, transmitted and communicated within seemingly dissimilar and separate media, the biological

and the cultural.

Niccol creates a series of lyrical moments in his film, which he constructs out of mundane, everyday situations such as conversations between the ex-husband and wife, or the sudden insight Taransky's daughter arrives at while researching the Pygmalion myth. These are contrasted with the scenes from Taransky's film that are full of pathos and highly idealised emotions.

#### **2.6.4 Using the biocultural approach**

The use of the biocultural approach to narratives and cultural objects can be exemplified through a description of some important contributions to the field. For example, Boyd (2009) in his *On the origin of stories* uses two different approaches to his biocultural analyses of two different texts, one of which is Homer's *Odyssey* and the other Dr. Seuss's *Horton hears a who!* In the analysis of the Homeric text, Boyd emphasises the issue of "earning attention" from the evolutionary perspective on intelligence and on human cooperation. In *Horton hears a who!* targeted areas are problems and solutions and secondly, levels of explanation which are organised around universal, local, individual and particular elements. Zunshine (2006) applies mainly the Theory of Mind to selected texts in her *Why we read fiction — Theory of Mind and the novel*. Stafford (2007:1) accords primacy to the cognitive work of images ranging from the fifteenth century to the present — critically examining images against the "backdrop of the question being posed by our colleagues in neuroscience". The approaches to biocultural analysis are highly individual and specific to the discipline in the humanities within which any scholar works.

Boyd, for instance in pointing to the biology behind storytelling and using texts to illustrate his points, shows how the biological traits of securing attention and solving problems are performed in literary texts as diverse as Homer's and Dr Seuss's. He argues for the biological basis for individuality which issues in

cultural objects as a particular set of singular, identifiable, distinguishing characteristics which mark the individual as the creator.

In the cognitive approach to cultural criticism the emphasis is on how the biological basis in the production of cultural objects is not a mechanical exploration of what science or technology can explain about human action and interaction concluding in deterministic outcomes. It is richer than that. For Boyd (2009:385), the cognitive approach “can refine and challenge our idea of human nature and thought”, broaden our responses to the individuality of the creators of the objects, contribute to the spread of cognition, enable collaboration as human brains do not tend “to do their cognitive work in isolation” (Dror & Harnad 2007:47) and open up chances for creativity.

Cultural objects are signs of cognitive adaptation coming from what Boyd (2009:189) has termed, “limited perceptual input [which] yields rich conceptual output”; it is in this way that cumulative adaptation in culture happens.

Tomasello (2010:3-5), who speaks from a cognitive linguistics perspective, emphasises the multiple interpretative possibilities and associations that can arise out of a single gesture — a limited input. He argues that such limited input as a singular gesture can generate numerous options for interpretation which arise out of the specific conditions — as for instance the prior knowledge or the personal history of the recipient — within which such gesture is produced.

A further issue in the use of the biocultural approach pertains to cultural variation. To retain cultural variation two concepts are important — transmission and persistence: a) from one brain to another brain, there must be a transmission of whatever information is valuable; b) there must be enough time (persistence in time) on whatever scale is necessary to make and use the tools so that whoever is learning from observation sees the model doing it. Boyd and Richerson (2005:288) argue that their work on culture and evolutionary biology

... is unified by the idea that culture is a system of inheritance: individuals vary in their skills, habits, beliefs, values, and attitudes, and these variations are transmitted to others through time by teaching, imitation, and other forms of social learning. To understand cultural change, we must account for the microevolutionary processes that increase the numbers of some cultural variants and reduce the numbers of others.

Boyd (2009:25) uses the term “biocultural” to underline the fact that biology is not in opposition to society and culture when he outlines his vision of cultural criticism. If culture is behavioural adaptation to an environment, as Kronenfeld (2008:97) argues, in that it provides the “system which coordinates human society”, then the cultural objects, the outcome of certain cultural behaviours, provide us with a vocabulary of “goal instantiations”, “means toward ends”, a “toolkit” to understand “motives, attitudes”, and the “desires” of the manufacturers of the objects. Culture also evolves as organisms do, but in a constricted, constructed environment (Boyd & Richerson 2005). Culture and biology are intimately related — culture cannot arise where there is no biological base to enable it (Sperber 1996). Scientists, focused on different aspects of this biological base for enabling culture, point out certain specific biological characteristics in humans that allow for culture and its transmission. Boyd and Richerson (2005:4) explain it thus:

Genes and culture coevolve. Because culture creates durable changes in human behavior, human genes evolve in a culturally constructed environment. This environment, in turn, generates selection on genes. The evolution of language is an example. We apparently have a complex innate system for hearing, speaking, and learning language.

A theory of cultural criticism which takes account of biology is itself a species of adaptation to the new social climate in science and the humanities.

The biocultural approach to analysing cultural objects is grounded in research which shows that culture and cognition are interdependent (Tomasello 1999,

2010; Clark 2010; Ramachandran 2011). To understand the cognition involved in the appreciation and analysis of a cultural object, placing the object in a cultural construction such as semiotic theory or phenomenology (and so on) is not the only approach available now. The value of a biocultural approach in the analysis of cultural objects is that it does not separate those who have produced the objects and are their recipients from the biological mechanisms that enable culture at an organism level nor at a cultural coevolution level (Tuomela 2007). Arbib (2006: Kindle loc 88) observes that by including the biological perspective in cultural analysis the aim is not to ignore the other dimensions of cultural objects and language but to enrich them by an understanding of how the use of language and imitation “may be situated with respect to other systems for action and perception”.

## **2.7 CONCLUSION**

This selective review of the literature on the biocultural approach to criticism is founded on a key concept in biology, that of the cognising Self. The old arguments between the Humanities and science are discussed to provide a context for the overwhelming evidence that findings from biology impact on every element of human cognition, hence narratives, art, any cultural production, so that it is unwise to ignore the findings of biology and neuroscience.

Cognition is transmitted in a variety of ways by humans especially through mimicry and mimesis, but when mimesis is part of deception or someone is shown to be a norm violator it is not easily tolerated amongst humans, although mimicry is a key survival strategy among many other species on earth. Narrative is shown as closely connected to biological underpinnings — namely, emotions, and satire as a narrative form belongs to the same picture, but usually has a moralising function.

## **CHAPTER 3: COGNITION, SATIRE AND ITS OBJECT IN NICCOL'S FILM S1MONE**

*The human skin is an artificial boundary: the world wanders into it, and the self wanders out of it, traffic is two-way and constant.*

Bernard Wolfe (*Limbo*, 1952)

### **3.1 INTRODUCTION**

The aim of this chapter is to clarify the notion of cognition and what is cognised specifically through Niccol's *SImOne*. The biological approach to support the analysis of cultural objects is expanded in the discussion to support the next chapter.

This chapter is divided into three main sections, the first being a discussion about cognition and its transmission through, among other things, cultural objects. Secondly, the specific cultural object of this study, the satire, *SImOne*, is contextualized within a broad overview of satire in preparation for the close analysis of the film undertaken in Chapter 4. The genre of satire is placed within the broader context of current American satire which has a particularly political

direction. The last section is about the object of Niccol's satire, Hollywood, which has metamorphosed from its earliest beginnings in the late nineteenth century to the multi-million, big business operation of today. From a biocultural perspective satire, as a vehicle of cognition, reliant as it is on humour, represents an evolution of culture which is sophisticated in terms of the cognition called for, although its expression can run the gamut from grossly heavy-handed to the subtlest of touches.

### 3.1.1 Cognition

Cognition can be described as a series of mental processes of knowing or that which comes to be known. Both these aspects of cognition happen through perception, awareness, reasoning, intuition and judgment.<sup>10</sup> ‘Cognition’, then, designates either the ability to acquire knowledge or already acquired knowledge as well as the mental processes involved in cognition, including understanding and producing language, solving problems, making decisions and memory. This is represented in the illustration below (Figure 3.1).

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<sup>10</sup> The root of the word cognition comes from the ancient Greek verb “gnósko” (γνώσκω) meaning ‘I learn’ and the noun “gnósis” (γνώσις) meaning ‘knowledge’, so broadly speaking it signifies ‘to conceptualise’ or ‘to recognise’.

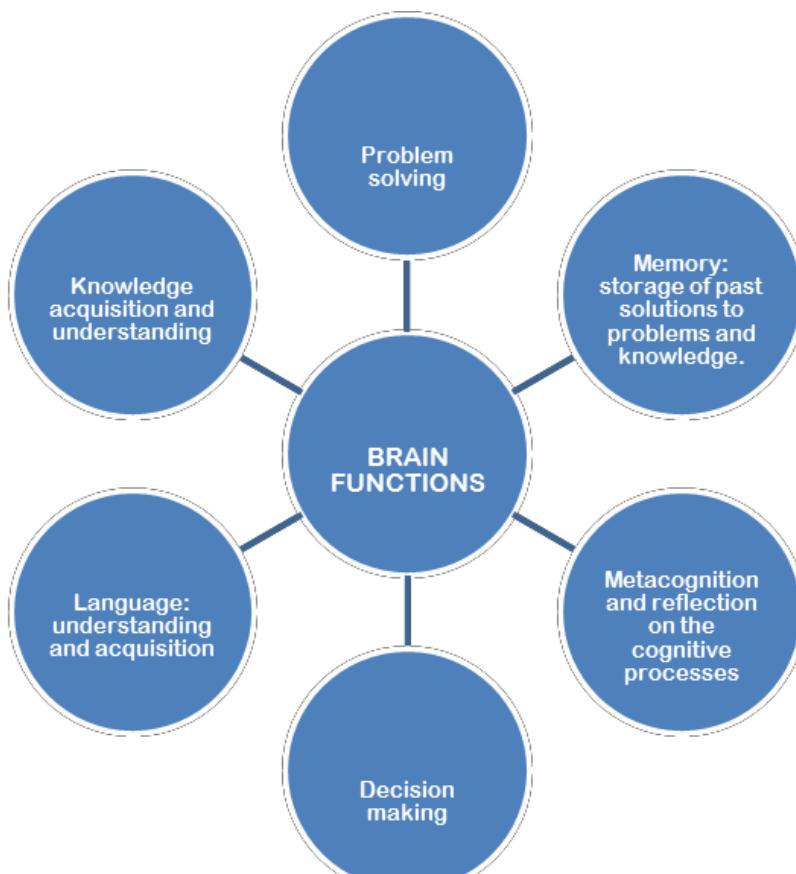


Figure 3.1 A simplified chart of cognition.

A wide range of scholars in disciplines such as neurology, philosophy, psychology, anthropology, linguistics and computer science approach mental processes from different perspectives and offer insights from their diverse contexts. According to Rowlands (2010:2-3), however, the main divide in the studies of cognition lies between focusing on cognition as mental states (Cartesian approach) or mental processes (non-Cartesian approach).

### **3.1.1.1        *Cognition and intelligence***

Cognition and intelligence are closely related. Herman (2006:358) highlights the usefulness of Rogoff's definition of intelligence as "the socially supported ability to solve problems grounded in particular domains of activity". The specific domain of activity discussed in this study is the engagement with a cultural object

from initial perception to metacognition. The use of intelligence as a socially supported ability to solve the problem of the cultural object, *SImOne* in this case, however, is expensive in terms of energy use.

One has to perceive the object, that is, organise, identify and interpret the incoming sensory information so as to represent and understand the environment one perceives. Fortunately one is scarcely aware of this activity. One then processes the information, first into recognisable and differentiated structures and then into a fine-grained understanding, a cognition of the narrative, its complexities, and perhaps the creator's goal in making the object. One then assesses meaning as to the importance, value, provenance and impact of the object. Finally, because the film is satirical, one is amply assisted in grasping the point the creator makes by his extensive exploitation of signals or cues to us to engage in metacognition, understood as that ability to reflect on one's own cognitive processes (see 3.1.1.2).

One of the methods used by researchers and scientists working on cognition and culture is a close examination of brain development, by means of studying material and cultural objects made over the last fifty thousand or more years. This enables them to arrive at conclusions about the evolution of the brain and the social mind as a result of the production of cultural objects and human interaction therewith (Donald 1991; Mithen 2000; Wilson 2002; Mithen 2005; Whiten, Hinde, Laland & Stringer 2011). Viewed in this way, such cultural objects are therefore not only material evidence of cognitive processes but are also acknowledged by these scientists to be “propellers” for cognition.

In terms of brain development, current studies in cognition claim that the modern human brain emerged between fifty to forty thousand years ago due to the rise of mimetic episodes as a strategy for survival, among other factors (Donald 1991; Mithen 2000; Smail 2008). The development of mimesis, marked by the production of the first objects of art (Mithen 1996; Bailey 2005; Arbib 2006), is

thought to be one of the main triggers for the transfer of cultural learning and knowledge, thus enabling the growth of culture (Pinker 2002:60-63; Ramachandran 2011:117-152).

### **3.1.1.2**      *Metacognition*

Another of the important concepts related to cognition is metacognition — reflection on cognitive processes which is indispensable to the enjoyment and understanding of cultural objects. Güss and Wiley (2007) comment that, “metacognition, the observation of one’s own thinking, is a key cognitive ability that allows humans to influence and restructure their own thought processes”. Metacognition, the term which denotes “thinking about thinking”, was first used by Flavell (1976:232) who outlined the following description of metacognition as referring,

... to one’s knowledge concerning one’s own cognitive processes or anything related to them, e.g., the learning-relevant properties of information or data. For example, I am engaging in metacognition if I notice that I am having more trouble learning A than B; if it strikes me that I should double check C before accepting it as fact.

This demand on metacognitive skills is what satire and other genres of literature, art and film (or other modalities of cultural production) make on the humans at whom the satire is aimed.

### **3.1.1.3**      *Propagating cognition*

Distributed cognition<sup>11</sup> is the framework for examining the processes of

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<sup>11</sup> Since the term “distributed cognition” is a somewhat specialised term (Hutchins 1995), the expression “propagating cognition” is generally preferred in this context to indicate the way in which ideas enter the social environment.

cooperation among humans, artefacts and environment. Calling the process of shared understanding “distributed cognition”, gives prominence to the social aspects of cognition (Resnick, Levine & Teasley 1988; Norman 1993; Hutchins 1995; Latour 1999a; Giere & Moffatt 2003; Dror & Harnad 2008). This framework of socially distributed cognition makes allowance for the possibility of a further advancement in human cognition through placing human experience within continuously growing interrelated systems of cultural, technical and scientific reference. The term “distributed cognition”<sup>12</sup> applies mostly to a set of coordinated activities with an anticipated outcome in mind; human interactions with cultural objects are less predictable however, and evoke rather potentialities than certainties of cognitive outcomes. The term ‘cognitive propagation of ideas’ might be useful here to address the open-endedness of interactions with cultural objects; it also suggests sometime uneven spread of cognition or potentially organic, unquantifiable reception of an art object. Interactions with artefacts propagate cognition (Rogoff 1990; Wertsch 1991; Hutchins 1995) and human knowledge and cognition are propagated by memories of, knowledge of or facts about objects, tools or individuals.

Propagating cognition, in the context of this thesis, is understood to effect changes and transformations in the individuals interacting with artefacts and environments. There are numerous vehicles for driving cognition and metacognition and propagating these in society; among them is narrative which can be described as a higher level of second-order beliefs (Enfield & Levinson 2006:195). The propagation of cognition promotes the evolution of culture and in turn culture affects the propagation of cognition.

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<sup>12</sup> The distributed cognition typically refers to a framework that involves coordination between individuals, artefacts and environments while that coordination does not necessarily involve a transformation of any of the participating elements.

Salomon (1997:xiii), working in the discipline of educational psychology, says of the concept of socially transmitted cognition, “People think in conjunction and partnership with others and with the help of culturally provided tools and implements”. One of the more popular examples of distributed cognition is that provided by Hutchins who in the mid-1980s combined insights from the cognitive sciences with Vygotsky’s observations about collaborative learning processes in order to emphasise social aspects of cognition. Hutchins’s example (1995) of distributed cognition between human and non-human systems is that of the interactions among an aeroplane’s crew members who work in conjunction with each other, the plane’s devices and the environment; thus, the interactions require social effort and assist in providing instances of distributed cognition.

Another example of distributed cognition is the solving of complex arithmetical problems by two or more participants in which sections of the calculation are broken down into simpler components and stored in memory by the participants in order to collectively arrive at the final sum. Art objects and films are also good examples of distributed cognition tools and are in certain aspects analogous to the two former examples above. However, it cannot be claimed that all the ‘interactions’ between artworks, their creators and their recipients are ‘coordinated’ as these interactions often can have transformative rather than instructive exertion on all participating elements.

The exchange of cognition reverberates not only between an artist/film maker/story-teller and his/her audiences but also between individuals in the audience who might share their interpretations of the work and thus add to it from the wide scope of their personal experiences or professional fields which could range from neuroscience or astrophysics to educational psychology or applied mechanics. Additionally, accessibility of films and videos to the public via media like television, cinema, DVDs, iPads, Kindle, computer networks and the Internet makes them potent agents for transmission of cognition. According to Dror and Harnad (2008:1-3), those forms of cognitive technology enable “extending

[cognisants’] performance capacity beyond the limits of their own brains”.

Concepts from the field of distributed cognition find applications in distance learning, especially in the field of Computer Supported Collaborative Learning (CSCL) and collaborative tagging on websites where popularity and similarity of searched material has been indicated to enable easier “navigability” through searches. The field of distributed cognition is expanding rapidly and is continuously enriched by examination of different agents and processes which play an inherent role. Gureckis and Goldstone (in Dror & Harnad 2008:111-114) emphasise the perspective of complex adaptive systems and their role in propagating cognition and the formation of group versus individual behaviour. The outcomes of interactions between the different agents are more predictable and calculable when examined as a part of a framework of distributed cognition than when are assessed as from the perspective of transmitting and sharing distribution. Spreading of cognition is not easily assessed as it involves transformation of perceptions and/or values which are often non-quantifiable. Tomasello (1999a:5-7) focuses on the forms of social learning and evolutionary cognition as forces enabling “individual organisms to understand conspecifics as beings ‘like themselves’” and equipping them with the ability to imagine themselves “in the mental shoes” of other beings.

A shared understanding of the cultural object can also be described as part of the activity of “propagating cognition” and the process can be understood as one of “shared thinking”. Herman (2006:357) explains distributed cognition as “the process of shared thinking about [...] events and about one’s own and other minds”. Culture arises in the conditions of sociality and helps that same sociality to evolve. The concept of cognition as both ‘shared’ and ‘distributed’ is a means of explaining how to understand learning (of the mimetic and non-mimetic kind), cultural traditions and customs and their transmission amongst a group of people (Rogoff 2003). To think of cognition as propagated provides insight into the role which cultural products like literature, film or art objects play in dispersing

knowledge and intelligence. From a biological point of view, through a series of interactions with cultural objects, shared cognition contributes to the development of our human adaptability.

### **3.1.1.4      *Theory of Mind, Extended Mind and Coupled systems***

Theories about mind or mind reading are well established because humans must have some notion of others' intentions, expected actions or reactions; this is a well-recognised idea in science (Premack & Woodruff 1978; Dennett 1987; Baron-Cohen 1991; Call & Tomasello 1998; Gallagher & Frith 2003; Horowitz 2003). More controversial are ideas like the extended mind and coupled systems. Geertz (1993:360) reminds us that in looking at mental states from the perspective of anthropological sciences it is obvious that "thought is consummately social: social in its origin, social in its functions, social in its forms, social in its applications". Similar claims that mental states are not private but socially enabled and motivated are made from other disciplines like evolutionary linguistics and philosophy of mind. One of the key concepts for the distribution and transmission of cognition is the Theory of Mind (ToM) which all humans have, that is, a ToM about what is in someone else's mind in the groups in which we share cognition. Herman (2007:257) explains what ToM is in a clear summary,

... [r]elevant in this context are fundamental, generic processes by which humans attribute mental states, properties, and dispositions both to themselves and to their social cohorts. These processes are part of what psychologists refer to as the native 'Theory of Mind' in terms of which people make sense of their own behavior and that of the people they observe and interact with. Philosophers tend to refer to the same native inference — yielding resources as understanding and producing language 'folk psychology.' At issue is people's everyday understanding of how thinking works, the rough-and-ready heuristics to which they resort in thinking about thinking itself. We use these heuristics to impute motives or goals to others, to evaluate the bases of our own conduct, and to make predictions about future reactions to events.

Frith and Frith (2001:151) report that the central factor of human socialisation is our cognitive ability to “attribute mental states such as desires, intentions, and beliefs to oneself and the others” and that this ability is a crucial aspect of human mentalising processes. Frith and Frith (2001:151) also explain that

... belief trumps reality in potentially ambiguous situations when someone wishes to predict another person's behaviour. In everyday life, beliefs rather than reality determine what people do. Hence, the acid test of mentalizing is understanding a false belief. False beliefs play an important role in social communication, especially in the detection and use of deception, persuasion, and trading.

An offshoot of having a ToM about other people's states of mind is the connection to objects which extend the range of our own minds. Chalmers (in Clark 2011) explains that Clark's hypothesis of the extended mind manifests itself when “parts of the environment are coupled to the brain” in such way that they become “parts of the mind”.

A third idea has to do with the “cognitive life of things”, to use Sutton's term (in Dror & Harnad 2008:47) for the array of objects and ideas that range from “the physical objects and epistemic tools used in processing orders in a café”, tagging systems, artists' and scientists' sketchbooks, “instruments and procedures involved in navigation” to gang tattoos or “black ties worn at funerals”. This category of things and ideas that provide an opportunity for propagating cognition seems to be intention driven because it serves to achieve goals that vary from logistic, commercial, scientific or artistic to expressions of emotions and can be collective, collaborative, private or individual.

### **3.2 COGNITION, STORIES, NARRATIVE**

It is exceptional that we as humans process information as narrative. Hermann (2003:x) distinguishes between two kinds of information, namely, “narrative [as] one of the two fundamental styles of thinking enabling human beings to make

their way in the world”, the other style being “paradigmatic” or “logical/classificatory thinking”. In this examination of stories, narrative and cognition, the significance of narrative as a way of organising human experience both for the self and for others to facilitate mutual understanding is discussed in the introduction to the section on satire (3.3). Boyd (2009:385) reminds us that

To understand stories at all requires at least an implicit theory of human nature. But most literary criticism has little more: either an intuitive theory of human nature as self-evident, or recently an explicit and untenable theory of it as entirely socially constructed.

A similar statement can be made about recent film criticism. Andrews and Andrews (2012:59) criticise the constructivist approach which has dominated the humanities for so long, saying the biocultural one is a welcome addition to the humanities landscape, “offering a way out of a reductive species of culturalism that so frequently presents genres, texts, and authors as ‘social constructions’ only”. An example of that approach is the limiting perspective enunciated by Atkinson and Delamont (2006:170) on narratives as “inescapably social phenomena ... they are produced and circulated in ‘social contexts’ ... they are based on socially shared conventions”. Schiff (2006:22) provides a definition of narrative, in his case in the context of a narrative psychology:

The word narrative has a broad and a narrow sense. In its narrow rendition, narrative means the study of storytelling proper, including the analysis of specific stories, the study of plot lines, themes, forms of address, etc. Although this narrow definition of narrative is valuable in interpreting lives, it is also limiting. I take narrative in its broad connotation as the act of telling, narrating or showing subjective experience. In such a way, narrative becomes the act of expression in which persons make known the meaning of experiences and the significance of their actions.

This definition is an example of an intuitive theory of human nature and from this point of view the meaning of experiences and significance of actions arises from individual epistemologies. From a biocultural perspective the act of expression

through narrative is no more *true* than from any other epistemological perspective. But our biological make-up, the maps and mental models which are both different and the same for all humans, will inevitably produce very different stories. In addition, our personal narratives, real or fictional, are co-authored by other significant individuals. There are innumerable other sources for our stories. The subplots in our stories which are unwanted and personally limiting (Drewery & Winslade 1997; Winslade & Monk 1999; Cheon & Murphy 2007), for instance, frequently arise from cultural or political stereotypes that “place people in particular positions or relationships with others and themselves and prompt them to describe the world from particular vantage points” (McKenzie & Monk 1999:93). Such limiting subplots can exert so great a power that they can dominate people’s narratives psychologically and compel them to view their world through that lens only. Cheon and Murphy (2007:7) say, “Narrative therapists suggest that because we are born into and are affected by dominant discourses, they are internalized within us as truths and influence personal narratives”.

Thinking about storytelling, narrative and cognition from the particular standpoint of human nature as evolved, evolving, and co-evolving with culture, sheds further light on the entirely socially constructed view of human nature as so exceptional. As Boyd (2009:386) says about the biocultural perspective:

A biocultural explanation builds from the ground up, from single-celled organisms to humans. It interprets human society partly in light of the many forms of sociality that have evolved, under sometimes similar pressures, throughout the animal world; human culture in light of culture in other animals; and human conventions in light of the conventionalizing of behavior in animal ritual.

Boyd (2009) most convincingly describes the cognition element associated with narrative — from a biocultural perspective. He (2009:145) points out that we need a ToM first in order to understand narrative:

We can trace three stages of the early individual development of fully human theory of mind: (1) First, infants up to about eighteen months have a single updating model of reality, of the world they can see *now*; (2) From about eighteen months to about four years, they can hold multiple models of reality in their minds, but do not understand the process fully. They can call up memories of the past, anticipate the future, have some notion of the wishes and intentions of others, understand and respond to pictures or stories, enjoy pretend play, and distinguish these other representations — memories, wishes, anticipations, fancies, pictures, stories — from the world of the here and now.

From studies of infants the idea of metarepresentation is clear. Without metarepresentation the understanding of narratives is not possible. While it is true that other great apes and even dolphins seem to have a ToM we cannot say as we can about humans that they are capable of metarepresentation, or that they understand the very processes of metarepresentation. Although children cannot easily tap into their “*beliefs* as well as desires, goals, and intentions” (Boyd 2009:145) we as adults can. These beliefs, desires, goals and intentions underlie our metarepresentation facility.

Narratives consist of sequences of events and without an understanding of those whether at the level of fairy tale in which the markers of those sequences are straightforward in the style of “and then”, “and then”, or at the level of romantic fiction “meanwhile” or the highly stylised dance choruses of ancient Greek tragedies, we as humans like to know event sequences. In film at first the use of the conventions of stage plays gave the event sequencing a certain slowness (Branigan 1992).

Event sequencing starts to be explicit in children as early as five years old. That is a necessity for understanding narrative. Boyd (2009:152) says, “event comprehension reflects the regularities of the world — things, kinds, minds — and is already well established in many kinds of minds quite without human culture and in human minds largely independent of any deliberate teaching”. This

seems effortless as adults but the biological basis has to do with memory, both short term and long term. To put events together in episodes is characteristic of narrative comprehension. Some episodes especially in film seem to have no connection to preceding ones. It is then that our working memory has to be set aside for the search into long term memory and finally “if that yields nothing, for general knowledge in semantic memory” (Boyd 2009:152).

So it is with character assessment, another of the crucial parts of narratives. It is because of our ToM and memory we can rapidly assess and remember character traits in a truly sophisticated way and if necessary reassess if the evidence presented is in some way dissident with our initial impressions. Boyd (2009:153) explains some of the earliest work on memory which showed that,

... our memories are not eidetically exact but partially reconstructed, reshaped by the mind at every stage: in initial perception, in encoding, during storage, and in retrieval. We remember only selectively, according to what we attend to and its recency, salience, and emotional impact.

Energy costs in shaping even our micro biology so we survive successfully, extend to shaping memory as well. This summary of cognition, biology and narrative is heavily reliant on Boyd (2009) as his is one of the clearest and most accessible explanations of the biology behind narrative.

### **3.3 SATIRE: SEEKING A BIOCULTURAL DEFINITION**

The medium of Niccol’s work is satire and film and the object of his satire is Hollywood. To review two millennia of satirical activity in theatre, literature, art and film in the West is obviously only possible from some specific viewpoint. The perspective adopted in this study is to examine the main rhetorical components of satire as strategies which serve the artist’s overall purpose. The strategies in question are those related to the biological facts of reference to those strategies which support the analysis of *SImOne* in Chapter 4. It is worth

remembering that Quintero (2007:495) says, “The purpose of mockery is constantly shifting”. Niccol might be what Duval (2007:71) terms a “discrediting representative” (stock character from Renaissance satire), that is, he undermines his own profession by exposing the foibles, limitations of character and excesses of the other director, his counterpart, Taransky.

A more detailed analysis of the biology of humour is submitted, as compared to Chapter 1, as well as a brief discussion of theories of humour as they relate to biology. The second section covers a review of the Hollywood industry as it has developed over the last fifty years since the “classical” period of the 1960s to its current large scale operation as a global business enterprise.

Satire is a form of discourse belonging to drama, literature, and art. It has three main functions as part of the human capacity for humour, as Simpson (2003:3) suggests:

[t]he aggressive function always ridicules or makes fun of a victim, allowing the non-victim a feeling of superiority. The social function can serve to reinforce intra-and inter-group bonds, strengthening the cohesiveness of interpersonal relations. The intellectual function, which is based on absurdities, word play and nonsense, provides pleasure in ‘the temporary freedom from strict rules and rationality’.

However, satire remains difficult to define. It is unsatisfactory to define it according to its functions. Still less satisfactory is to look at its ancient roots and believe that the greater the antiquity of the definition, the more authoritative it is (Condren, 2012). As Rabb (2007:570) says about viewing the history of satire in antiquity despite its great and continuing popularity

[i]n our current culture, satire continues to flourish in widely disseminated formats and media. But how many admirers of ‘The Onion’ or ‘The Daily Show’ have read Horace, Persius, Varro, or Juvenal? Something else besides classical erudition provides the ‘hook’ that holds readers of satire together in mutual desire for its peculiar pleasures.

That hook is probably the same indignation that satirists have always felt about violators of predominant values or norms, confabulation, arrogance, blind stupidity or any vice mentionable. There is a certain agreement on what is recognised as satire. As McClenen (2011:5-6) says, “At the heart of satire is the exaggerated, parodic acceptance of the status quo, done in a way that serves to ridicule common practices and beliefs in order to provoke the audience to rethink its behavior and ideas”.

### **3.3.1 Satire and sociality**

Hollywood is a specialised outcome of American society, a social group all of its own, characterised previously or prior to the 1980s as a series of “chiefdoms”. With changing global economic conditions and advances in technology between the 1960s and the 1980s the fabric of the industry changed (Bordwell, Taiger & Thompson, 1998; Bordwell 2006). It belongs now in the league of very large national industries with all their parameters, pressures and financial drivers.

The “socially coordinated effort” (Herman (2006:356) towards making sense of the inner workings of the machinery of the Hollywood industry lends itself to the satirical mode because of its exhibition of ludicrous conventions such as the worship of celebrities, prurient interest of the media in the lives of such “goddesses”, financiers’ manipulative demands on film makers and raw consumerism and commodification. In being confronted with the consuming machine of Hollywood Niccol can agree with Juvenal's (c.60-c.140 CE) cynical remark, “Difficile est saturam non scribere” (Satire, 1:30).<sup>13</sup>

Satire can be said to be the cultural tool utilised in disseminating the understanding of a clear-sighted individual regarding what he/she views as

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<sup>13</sup> “It is difficult not to write satire.”

behaviour which, in a cultural sense, leads to the “spread of maladaptive cultural variants” (Boyd & Richerson 2005:10). Satire as a species of humour belongs to an extensive tradition whereon innumerable theorists have theorised from Aristophanes' (448-380 BCE) Old Comedy play, *Lysistrata* (411 BCE) to Stanislaw Lem's *Cyberiad* (1975) or Woody Allen's 1995 *Mighty Aphrodite* (Draitser 1994; Sperber & Wilson 1995; Sperber & Wilson 2000; Simpson 2003). Much of what has been written focuses on the rhetoric of literary satire but that is not the focus in this study. Rather, the emphasis is on the biology which underpins our cultural objects and the objective is to place humour, satirical or not, in the context of human sociality. As Gervais and Wilson (2005:399) report, “Social contexts facilitate laughter ... , and laughter is thirty-times more likely to occur in a social context than when alone ... It has even been argued that laughter requires another person to stimulate it ...”.

Two ideas about humour as satire need to be clarified here. One relates to the cultural context and as Kenrick, Nieuwboer and Buunk (2010:258) explain, “[w]hat is true is that all humans recognise each other's angry expressions but when it comes to humour ... all human groups have humour and moral outrage, but which verbal statements elicit laughter or horror depends partly on an understanding of local cultural norms”. The other significant idea about humour is in relation to laughter in the evolution of humans.

In the context of human relations the value of humour is obvious in reducing negative affect and preventing some aggressive behaviour, amongst much similar adaptive behaviour. Gervais and Wilson (2005: 396) also remark that he considers “laughter to have been a preadaptation that was gradually elaborated and co-opted through both biological and cultural evolution”.

### **3.3.2 Satire — a brief overview of important sources**

The literature on satire is vast and rather than reviewing here a period of three

thousand odd years, suffice it to say that the primary texts used in the following chapter are originals or translations. The secondary sources for the techniques and sources of satire are Freudenburg's (2005) *The Cambridge companion to Roman satire*, Keane's (2006) *Figuring genre in Roman satire* and Quintero's (2007) *A companion to satire*. Ancient satire is also represented by Rosen (2007) in *Making mockery: the poetics of ancient satire*. The eighteenth century was the satirical age par excellence and the following works were consulted: Weinbrot's (2007) *Eighteenth-century satire: text and context from Dryden to Peter Pindar*, Wild's (2008) *Christopher Smart and satire*, and Forbes's (2010) *The satiric decade: satire and the rise of Republican political culture in France, 1830-1840*.

Modern satire is addressed through Abche's (1999) *Political satire*, Schlegel's (2006) *Satire and the threat of speech*, Freedman's (2008) *The offensive art: political satire and its censorship around the world from Beerbohm to Borat*, Day's (2011) *Satire and dissent interventions in contemporary political debate*, Gournelos and Green's (2011) *A decade of dark humour: how comedy, irony and satire shaped post 9/11 America* and McClellan's (2011) *America according to Colbert: satire as public pedagogy*. In approaching film and TV sources consulted were Horton's (1993) *Inside Soviet film satire*, Gardner's (2009) *The Marx brothers as social critics: satire and comic nihilism in their films* and Gray, Jones and Thompson's (2009) *Satire: TV politics in the post network era*. General works on satire which proved useful were Simpson's (2003) *On the discourse of satire: towards a stylistic model of satirical humour*.

### 3.3.3 Satire's cryptic origins

Whether satire's origin is a Roman invention from "satura", "a mixed plate [of

beans]”<sup>14</sup>, or from the Greek satyr plays does not make it any easier to define (Keane 2007:31-32; Quintero 2007:7). One would like to think there is a connection to ancient forms as found in the irreverent chorus of satyrs in Old Attic drama who comment in a mocking way on the action of the protagonists in the comedy which was offered to Attic audiences during the course of their viewing of the great tragedies of tragedians such as Aeschylus (525/524-456/455 BCE), Sophocles (496/5-406/5 BCE) and Euripides (480-406 BCE). Quintero (2007:9) continues to say that satire exists

... as if it were equity interminably disputed in chancery, comes down to us as an enduring creative product of a jumbled and sometimes specious genealogy — rhetorically assertive, concretely topical, and palpable as an art form but with its title and pedigree as a genre perpetually in question.

Its instruments are many and diverse, but for satire to have any relevance for its spectators or readers it needs to have something to mock, subvert, or criticise. This in part accounts for the enormous variability of satire as it has appeared since the Old Comedies of Aristophanes (448-380 BCE) through to Orson Welles’s *Citizen Kane* (1941). Condren (2012:380) favours the association of satire with humour for the practical outcomes it provides:

It is nearer the truth to say that our later strong associations of satire with humor encourage extending the range of the satiric back to embrace the Greek rhetorical and comedic notion that laughter was ridicule of folly and wrongdoing. Aristotle’s important reflections on laughter and ridicule, from *The Rhetoric* and *Poetics* were assimilated to satire only through later translation. Thus in ridicule and tropes adjacent to it, we have something that helps hold together the varying

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<sup>14</sup> Keane suggests that this early expression comes from mixing a variety of genres: and says that “the genre’s name (*satura*, “stuffed”) warns that its own nature cannot be summarised in a simple formula. Its purported founder Lucilius [...], used many different rhetorical tones, and even varied his metrical scheme” (2007:32).

rationalities for a general conception of satire, not just in ‘literature’ but across rhetoric, drama and poetics.

Aristotle’s idea that laughter “was ridicule of folly and wrongdoing” is currently enriched by Gervais and Wilson’s claims that laughter has two distinct sides, the playful type which primates all share, and the type which is a learned behaviour. Gervais and Wilson (2005:399) say,

[d]espite the evident biological foundation of laughter and humor, there is little doubt that laughter-evoking contexts and how laughter is interpreted are fundamentally influenced by cultural norms and learning. Goodson ... has called this ‘learning (cultural) overlay’ or the codetermination of human actions by biology and culture....

One of the norms in Western culture is to recognise certain kinds of ridicule, such as the use of incongruity, exaggeration, bathos, lampoon, comic reversals, litotes, witticisms, irony, invective, unmasking, grotesquerie, as satirical and capable of eliciting laughter. Further, Pavlovskis-Petit (2007:511) says, “Being privy to knowledge not available to all is pivotal to all types of irony and satire”. Finally, it is rather difficult to distinguish between persuasive and punitive satire and that debate continues apace.

### **3.3.4 Sixteenth, Seventeenth and Eighteenth century satire in Europe**

Classical satire survived into the sixteenth century in Europe and classical satirists continued to give inspiration and to contribute to that form of writing into the eighteenth century. In literature in the sixteenth, seventeenth and eighteenth centuries it was taken for granted that there were two kinds of satire modelled on classical literature. Pavlovskis-Petit (2007:514-525) explains that there,

... are two main types of classical satire: the Horatian and the Juvenalian. ... all satire may be seen as inherently ironic, but the involved and complex ironies of Horace and others who adopt his mode (Erasmus is an example of a Horatian satirist ...) furnish much greater enjoyment to anyone with a penchant for being teased than do

Juvenal and his like (such as Samuel Johnson, to name but one). There is no room for suspecting that the latter type of satirist is hiding behind the Horatian mask of an easy-going, fallible, even friendly, fellow talking to us with ironic humility even while concealing the sharpness of his observation and inveigling us into a belief that all that is going on is a friendly conversation. A Juvenalian voice is that of an unimpeachable judge. Even though the reader is still taken into the satirist's confidence, open and angry indignation rather than crafty indirection is what we are made privy to.

Amongst famous satirists is Francois Rabelais (1483?-1553) with his dense *Gargantua and Pantagruel*. He employs a dazzling array of devices, registers from the most learned to the jargon of the street, and targets the church, lawyers, avarice and almost all vices. Erasmus's *Praise of Folly* (1511) comes from The Netherlands. This is to name only two of the most outstanding writers of satire.

During the seventeenth and eighteenth centuries more satires were written in English than in any other century (Quintero, 2007:9). Johnson, Pope, Dryden and Swift are some of the most well-known. The difference over the last two hundred years between the kind of audiences at whom satire is aimed might be a fruitful avenue to explore. Certainly a diminution in learned audiences is the norm and, with mass media available, satire is best characterised currently by cartoons such as *South Park* (1997). But England and France in the 1600s and 1700s had to offer creative and indignant playwrights and authors and audiences sufficiently sophisticated to understand the satire launched against the prevailing modes in their society. Molière's (1622-1673) comedies are satirical in a biting way; ridicule and exaggeration are his key weapons. La Fontaine's subtle satires about animals, his *Fables* (published between 1668 and 1694), remains important for his sly wit and clear eye for human foibles. Beaumarchais's *Barber of Seville* (1775) has his protagonist, Figaro, utter some of the most stinging, satirical remarks about the class system of the time.

How the detailed socio-economics, population of readers or any other factors influenced such a proliferation of satirical discourse is not within this study's

purview although it is precisely those factors which make a satire topical for an audience who shares what Northrop Frye (1957:224) has described as “national hatreds, snobbery, prejudice and personal pique”.

### **3.3.5 Satire in contemporary media**

Without the learned audience who read books or visit the theatre and upon whom earlier satirists relied, satire now presents a newer, less learned face. With the development of the mass media and TV and all the technology which is at the fingertips of consumers currently, political satire has developed successfully in America. McCленen (2011:2) refers to satire as “public pedagogy” in her study of the American satirist, Colbert, whose scathing satire against the Bush administration after 9/11 brought satire back to centre stage of the public’s attention. He has been recognised for his work and awarded innumerable honours. His pedagogy is public and critical but as McClenen (2011:4) says,

Colbert’s force as a public intellectual, though, is not limited to the public scope of his visibility. One thing that makes his work especially powerful is the way that he combines entertainment with social critique. This is what happens when he takes his show to Iraq and he blends silly bits of himself undergoing basic training or getting his head shaved with more significant commentary on the war and the crises facing the troops.

In the seventeenth or eighteenth centuries satirists had as much force for small audiences for whom they played or wrote as Colbert or Borat have for their, thanks to the mass media, massively extended audiences. Dario Fo (b.1926), the satirical playwright and Nobel laureate, observes that there is a difference between satire and teasing (*sfottò*). Where satire has a decisively subversive character that makes judgments and targets the oppressive systems, teasing has an element of humanising the “forces” or individuals at whom it is directed (Fo 2009:129).

### **3.3.6 Satire in relation to irony and laughter**

According to Elliott (1960), a satire exposes follies, abuses, vices and shortcomings by ridiculing them in order to shame individuals, certain groups of people and society, with the intent of improvement. The mechanisms often relied on in satirical works to challenge stereotypical perceptions are exaggeration, anti-climax, about-face reversals, unmasking, punning, parody, bathos, juxtaposition and hyperbole. In another age irony could play a subtle part in satirising, especially in literature, but now the brush has to be broader to encompass the newer public for whom the mass media cater.

Satire can be equally successfully used for both subversion and reinforcement of stereotypes. So, much satire which was not direct ridicule, lampoon, castigation of moral attitudes or pointed exaggeration relied on irony. Pavlovskis-Petit (2007:424) asserts that

[s]atire is still with us, and still relatively easy to define, but irony continues to lay claims to territories far away from the satiric, and this tendency may delimit satire. It is possible that the urbanity of ironic satire has largely disappeared with the spread of democracy and universally available schooling. One would be ill advised to fault either of these modern phenomena, but with the shrinking of the highly educated literary elite proportionately to the size of the public addressed by satire, in order to have its desired impact satire cannot afford to be bewilderingly subtle; irony can, for it does not bear a burden of political and social responsibility, which has always been satire's. Hence the increasing use in the past two centuries of pictorial caricature to make a political point; and since the invention of film, that medium too has been utilized with splendid effect to make the sort of comment on human nature, society, and the responsibility of human interactions that used to be confined within the domain of literature.

Neither irony nor satire need necessarily elicit laughter although when it is of the lampooning kind of satire that *Monty Python* (1969-1983) offers there is often laughter. But an important finding about laughter is described by Gervais and Wilson (2005:402):

Laughter production is still tied to some degree of emotional arousal ... but laughter's function stems not from the communication of emotional states as information but instead from the accentuation or induction of positive affect in others. This occurs either directly by laughter's acoustic properties or indirectly through conditioned experience.... This conception of laughter finds support in studies showing that heard 'voiced' (or song-like) laughter elicits positive affect in others (in contrast to 'unvoiced' or grunt-like laughter; ... and from a fMRI study that found the amygdala, a key emotion and stimulus relevance area in the brain, activated by the perception of laughter .... In addition to inducing positive affect in others ... laughter is contagious ... heard laughter is a sufficient stimulus to elicit laughter. With this property, laughter falls within a larger category of primitive emotional contagion ... or the phenomena by which the actions and emotions of interlocutors are coupled. The more general underlying tendency of interaction partners to adopt the same postures, gestures, and mannerisms has recently been dubbed the 'chameleon effect'....

If the chameleon effect is applicable to our responses to the actions of any of the characters in Niccol's satire, his goal is to ensure that subsequent reflection on and cognisance of what those actions might mean has a salutary effect on his spectators. The propagation of ideas should not be underestimated when the film industry approaches topics of universal interest, as was evident in the phenomenon of the effect of Rainer's and Zackman's *Bucket List* (2007) on the consciousness of millions of film spectators.<sup>15</sup>

### **3.4 HOLLYWOOD AS THE OBJECT OF NICCOL'S SATIRE**

Mocking the industry in which he himself directs films by making a mockery of Taransky, the protagonist of his *Simone*, is a witty and self—reflexive joke full of ironies which Niccol will exploit to the end when, in the credits, his synthespian thanks all the real film stars preceding her existence for their contributions to her

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<sup>15</sup> The film opened on January 11, 2008, grossed \$19,392,416 and ranked #1 at the box office. (<http://www.boxofficemojo.com/movies/?page=weekend&id=bucketlist.htm>)

beauty and success. But there is a darker critique of the Hollywood industry which Niccol makes about the pressures on directors to work within budgets, to ensure that investors get a return on their investment, as well as all the complications of a massive business—orientated industry.

Bordwell (2006: 194 ff.) provides readers in his *The way Hollywood tells it* with an invaluable description of the changes in the industry from 1960 (the cut-off date for so-called ‘Classical’ film making) to 2006. From its beginnings after World War II as a new means of mass entertainment (drive-ins developed from screening for troops), there were changes for the industry to assimilate. The 1960s reflect the impact of television on the niche market the industry formerly occupied. So bad did it become for the industry that Bordwell (2006:192) reports that “screenwriters and actors go on strike for residuals from the sale of films to television. The strikes are settled in April and June”.

Another indicator of the changed climate was the fact that 20th Century Fox sold its land for the building of a shopping complex. By the 1970s problems with government begin to ease because “In March [1970] the studios come to an anti-discriminatory, equal employment agreement with the Justice Department” (Bordwell, 2006:195). Names of old studios changed as mergers and buy-outs occurred in the industry. Television and the film industry battled for ownership of films as TV studios released uncut films on their screens. Government stepped in again and again. By 1976 there were definite changes in the relationship between the industry and government, as Bordwell (2006:212) reports, “CARA becomes the Classification and Ratings Administration and no longer examines scripts before production”. Furthermore, “MPAA establishes the Office of Film Security to combat piracy”.

Along with all the inner turmoil of the industry’s politics, increasing technical innovation in the range of cameras, lenses and other technological developments made the industry more and more innovative. Box office returns reached

unheard-of figures, reflecting among other things the new marketing practices of the industry and a gradual rapprochement between TV and the film industry.

With the launch of the World Wide Web in 1989 the industry had a new set of challenges to deal with. By 1994 the Turner Classics movie channel had been launched and in 1996 the Telecommunications Act was signed which deregulated the industry. Having adapted to the release of videos, DVDs further changed the nature of the industry. DVDs went on sale in 1997; by 1998 they could be rented and the resultant impact on the industry compelled its participants to change marketing strategies. By 2001 the industry had Internet marketing and created a parallel universe around the film, *A.I.* In addition, the strategy of “day and date”, to indicate when films will be released world-wide is used to prevent video piracy.

The development which made celebrities of movie stars is not only an inevitable result of gradual changes in the marketing strategies of the industry but probably also reflects social changes, public access to the media, unparalleled in previous decades, and the increasing cult of the individual which the mass media fuels.

With the astonishing developments in technology from the 1990s in motion, stage props, simulation, theatre stage design, from blue and green screens to computerised effects and special effects, the difficulty of detecting the real from the unreal is all the more a feature of the narratives on TV and in film. Films that comment on this spectacle of pseudo-realities are *Wag the dog* (dir. Barry Levinson 1997), and *The Truman Show*, for instance. In the following chapter Niccol is shown to exploit the technology of Hollywood for the satirical purposes he has in mind.

### **3.5 CONCLUSION**

Scholarship on cognition has advanced remarkably over the last forty years and the insights offered from neuroscience affect every area of our understanding

about cognition and metacognition. Narrative as one of our universally enjoyed arts has reaped the benefits as well.

Pavlovskis-Petit (2007) has summed up the changes in the use of satire from its elitist to its popular versions over the last two centuries during which time it has become more and more pictorial and less literary. This is an accurate way of contextualising Niccol's satire. But over its long history there have been many other instances of general illiteracy. One has only to remember the Aristophanic satires or the Commedia dell'Arte, or the Feast of the Baculus amongst medieval youth to know that the elicitation of humour has been a feature of sociality as long as written down history.

The brief summary of the history of the film industry does not stress enough the enormous burdens placed on directors in the industry who are accountable for their budgets. It is this pressure which is disclosed as the "inciting incident" in Niccol's satire, *SImOne*. With such a long history of trial and error in film production, especially within budgetary constraints of one sort or another, it is a sign of how well humans help their culture to evolve that Hollywood's "arc" for arranging narratives from beginning to end in such a way that our cognitive traits are most often engaged, remains a success. *SImOne* shows all the evidence of the expertise required to exploit that arc.

## **CHAPTER 4: ANALYSIS OF *SImOne* — A BIOCULTURAL APPROACH**

*Cinema and literature: shadow plays, simulacra that resist all wisdom... except that of understanding how they work.*

Gilles Thérien (*Le cinéma québécois*, 1979:114)

### **4.1 INTRODUCTION**

This chapter is divided into four sections of which the first three contain the analysis of how Niccol communicates through the medium of film, and specifically through *SImOne*. In the first section the analysis focuses on Niccol's appeal to the general public by simply telling a "good story" while the second and third sections address more complex and less immediate mechanisms of narrative such as external referencing and satire. In these last sections the main research question of this thesis is addressed. The question of how the mechanisms through which knowledge can be disseminated is tentatively answered. The analysis of the film is done with an eye to demonstrate how appealing storytelling, a wealth

of external references and satirical elements can be put to good use to communicate a particular viewpoint. The last section contains discussions about the biological underpinnings of the evolution of culture as they pertain to the film.

The analysis of the film *SlimOne* in this thesis points at a set of devices commonly used by narrators to achieve cognition. Some of these mechanisms are even embedded in language itself (Boyd 2009:175-6):

Language reflects the shifts our minds use to make sense of events and their sequence once we have theory of mind and a capacity for metarepresentation. And it can impart to others that sense, and those changing perspectives of time, place, and person, with minimal confusion.

Assuming that cultural objects and texts propagate cognition, the analysis undertaken in this chapter aims to reveal the cognitive basis Niccol relies on in *SlimOne* to achieve his effects and spread his understanding of what is laughable in his narrative. This is done by analysing how the plot (and subplots) of the film have been made engaging for the viewers, how the film reaches outside itself and operates with rich referencing techniques, and how the subversive quality of satire has been used in the film to bring about insights for the viewers.

Our understanding of culture ranges from literature, music, arts and related intellectual activities to knowledge acquired through education and exposure to arts; it can also designate the shared beliefs, practices and traditions within particular groups of people. I have argued that from the biocultural perspective, this understanding of culture is enlarged by the insight that it evolves through propagation and that it depends not only on learning but relies on understanding the learning process and on accepting that behaviours can also be learned. There are many ways in which humans learn (rote learning, repetition, mimicry, imitation or by following an example). Narratives are more complex forms of learning that provide an opportunity to propagate cognition.

What the audience of Niccol's film is required to do from a biocultural perspective, is to process a large, easily grasped, error-free amount of information to rapidly construe that it is a film in front of them. As film spectators they are accustomed to seeing the title of the film, usually at the beginning. In addition, given the way the industry works with its advertising and reviewing techniques to reach as large a viewing public as possible, some spectators at least will have read something about the film or heard about it in the media so they may have prior knowledge about some aspects of such film. Spectators of a film such as *SI in One* expect a narrative to be expanded, developed and reach a satisfactory conclusion within 90 minutes or so. The viewers will also be familiar with various stereotypes exploited in film. Simone herself is one, as is Taransky. As discussed above, narrative is a familiar and basic cultural transmission vehicle in human social groups.

The spectators can anticipate a fictional narrative which will enable their identification with some of the characters in the narrative. This is because human neural/cognitive mechanisms of informational content networks underlie the activation of the self and are shared between the observer and an observed conspecific.<sup>16</sup> The reason for this is that the actions of others are matched with the spectators' motor systems and their mirror systems (Muthukumaraswamy & Johnson 2007:44).

The spectators expect a film or a narrative to have a certain pattern which is recognisable, in this case the "Hollywood arc", that is, an initiating event, a development of causes and effects arising from some problem, a denouement and an epilogue; furthermore the central protagonist will show some interior development — or undergo some change of worldview — which is communicated to the audience (see 3.2). Spectators expect the film to mirror some of those

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<sup>16</sup> Conspecific means belonging to the same species.

changes. Narratives are recognisable from the myriad of films, plays, books or operas spectators might have seen. Imagination and the multimodal way our cognition works, grounded in experience, enables spectators to grasp story lines (Boyd 2009:156-157).

Film is a human cultural construction. As such and because *SImOne* is a narrative the audience will categorise and process the information of the narrative into rhythmic-hierarchic structures (Givón 2005). The neural/cognitive mechanisms of informational content networks underlie the activation of the self and are shared between the observer and an observed conspecific in films, while the pattern recognition that mobilises the categorising activity is exploited by application of filmic and storytelling devices such as deployment of conflicts and resolutions and specifically, in Niccol's case, the Hollywood arc, story lines, internal referencing of other films and referencing other cultural objects like paintings and myth.

There is ample evidence of evolution of culture and it is the main force that affects behaviour, as Boyd and Richerson (2005:4) observe, "on a scale unknown to any other species" by the acquisition of beliefs, skills and values through processes like teaching and learning. The development of human knowledge and technology is a result of cumulative processes of culture and could not have been developed by a single individual. While it understandably depends on a degree of credulity and faith by others in the group as to the trustworthiness of such transmitted values and beliefs, they are usually absorbed early and questioned later. These are good adaptive techniques.

In the evolution of culture "maladaptive" ideas, "ideas that would never evolve in a noncultural organism" (Nesse 2010:134) are often also transmitted in a culture. Those are the sorts of ideas which are in Niccol's case the main targets of satire. The reason for choosing the film *SImOne* for analysis through the biocultural perspective is that it is an example of a cultural object which

simultaneously is a result of cultural evolution and which ‘participates’ in it by commenting ironically on it, so pointing to a number of ‘maladaptive’ ideas in American culture.

The analysis of the film in terms of its technical strategies, visual language and rhetorical devices of satire, shows its narrative structures as exploiting cognitive processes, and its transmission of cultural insights places the film within the processes that operate and sustain the evolution of culture. In addition, the element of play, which in the case of the film in question is satire brings about flexible behaviour which “cannot be completely specified genetically” but “can be modified by learning” (Boyd, 2012:9). Play has a fundamental role in the evolution of culture (Konner 2010).

Verbal narratives such as storytelling with its variants like drama, comedy or satire, certainly offer the ‘safe conditions’ for participating at a remove in a wide range of behavioural possibilities (Ramachandran 2011). As Boyd observes, not only do these become the platform for extending behavioural options, but in themselves become motivational forces and “become fun” (Boyd, 2012:9).

Darwin’s belief in the universality of laughter and that humans share it with the apes is supported by Gervais and Wilson’s claim that laughter was well established in the biobehavioural repertoire of the early hominids (2005:396) (see 3.3.1). It is the development of laughter provoked by a play on expectations, exaggerations, metaphors that underlies the expansion of humour and its evolution into subsequent ranges like satire, parody, grotesquerie and comedy. The spectators of film experience amusement and expect it from an intriguing sounding film like *51mOne*. The safe conditions of the narrative, however, belie the satirical *puncta* which Niccol will launch at the spectators.

## **4.2 THE TRANSMISSION OF COGNITION ON THE NARRATIVE LEVEL**

The making of an engaging story relies on a variety of ingredients that are reliant on our human cognitive make-up (see 3.2). This section contains the discussion of some such ingredients Niccol uses to communicate his insights about the world of filmmaking. From a biocultural perspective, processes of categorisation and pattern recognition are some of the bases of human engagement with the world and enable construction and comprehension of narratives. These capacities for recognising patterns and assigning values to them also enable the formation of more complex interpretations and analyses of the incoming information about the agendas of other beings and are the province of a ToM.

As far as scientific research is concerned, it seems that humans are the only group of primates that exercise and indeed have a genuine appetite for theorising about the mental states of other beings. According to biocultural theorists, narratives in which these mechanisms are put to use are more likely to resonate with our biology and are more likely to be repeatedly recalled, retold, and propagated further. The development of a narrative, its annunciation, the way the attention of the viewers is earned and how the problems addressed in the plots are solved, all contribute to successful storytelling.

### **4.2.1 Categorising incoming information**

It is the capacity to categorise incoming information speedily that ensures the successful survival of many organisms, a very valuable ability for communication and cognition alike (Givón 2005). This biologically based ability to categorise information is vital for human cognition and fosters sociality. It is an ability which forms a base for understanding how to comprehensively organise information. Then it enables sharing it and communicating it outwards in forms appealing to humans. Givón (2005:47-48) explains that biologically grounded

information-processing relies on passing on of data which is “repetitive, frequent and highly predictable; and/or of great adaptive urgency or relevance”.

In Niccol’s film the narrative is constructed for easy understanding by its spectators. The narrative is linear in its chronology of events. The Hollywood arc is a further macro structuring device. The complexities weighing down on the protagonist are inferred from ToM and are not the key structural issues of the film. By categorising Taransky’s activities (primarily aimed at pleasing different people in his life) in various episodes by linking them through the use of similar shots, Niccol establishes the main events of the plot. Taransky has both a private and a public self — another macro categorising for the narrative.

The public activities Taransky performs to maintain his creative status in the film industry such as the deceptive information fed to the press are balanced by the deceptions he concocts for the “benefit” of his family relationships. These different but intimately connected aspects of the narrative are placed into associative groupings. Niccol allows the viewers to recognise that they should be linked through filming devices. Some of the devices are similarity of scene locations, repetitions of shots, variations of the repetitive locations or composition of the scenes or the use of marked changes in music to denote the scenes from the glimpses of Taransky’s own enframed film.

Niccol’s approach to editing can be understood as creating rhythmic-hierarchic pattern structures. This is done using shots taken in similar locations and scene repetitions. An example which exemplifies this technical ruse to match biology is the scene that marks Taransky’s interactions with the press about Simone. Shots that give a chance to spectators for processing the story of Taransky are repeated (in similar patterns) throughout the film. The repetitiousness of some shots helps to locate recurring patterns in the narratives of the film. For example, the shots of Taransky’s interviews with the press form not only a part

of storytelling of the events in the film — they also serve to bring together the high points of Simone’s career as a film star.

The background against which Taransky conducts the press interviews is the Hollywood landscape with its prominent studio buildings in the foreground. It is through these shots that the account of Simone’s career by proxy — meaning Taransky — is conveyed. As the story in the film develops, Simone’s rise, her success, her reclusiveness and finally her tragic, accidental demise are all accounted for by Taransky and are repetitively shown through medium shots taken with the same ultra-wide angle camera in the same location (Figure 4.1).

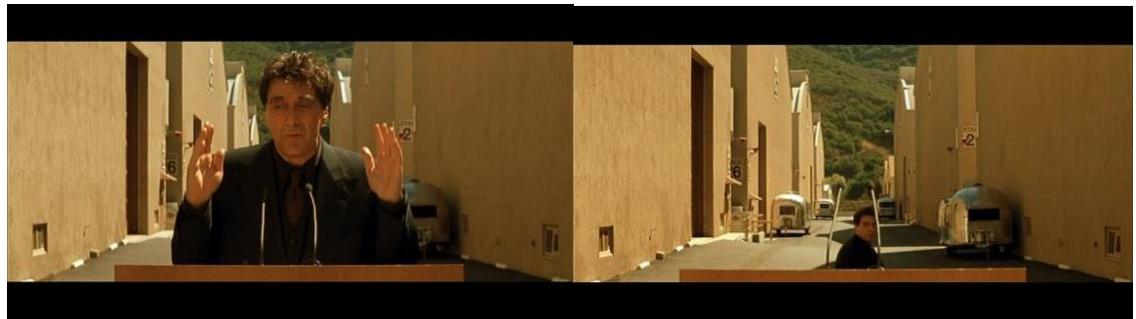


Figure 4.1      The press conference given by Taransky echoes a visual and conceptual structure of a religious assembly.

Film narratives are constructed from a welter of information which is processed through the categorisation and pattern recognition functions of the mind. However the conflicting type of information processing which needs to be done is about “fine contextual discrimination of small but relevant minorities” (Givón 2005:48).

Taransky's press conference echoes the visual and conceptual structure of a religious assembly (Figure 4.1). For viewers to understand the contextual discrimination and small relevant minor pieces of the information being narrated by Niccol, he uses close juxtapositions of shots exposing the incongruous nature of Taransky's behaviour. The press conference Taransky conducts among the fictional background of theatrical sets on the behalf of non-existent Simone as above is immediately followed by scenes in which the true status of Taransky is satirically hinted at by showing him as visually diminished, haunted and running away (Figure 4.2b). This shows the incongruity in Taransky's status very strongly. The elevated preacher-like position Taransky assumes as a self-appointed 'high-priest' spokesman for Simone (Figure 4.2a), is satirised in the shot featured in Figure 4.2b. The high contrast between these 'neighbouring' (adjacent) shots enables the viewers to make subtle shifts in processing the information that alternate between being general and specific. One of the cultural mechanisms of satire — bathos — used in these scenes unmasks Taransky.

Just prior to his frantic run into the world of fiction in the frames that feature the gigantic image of Simone on a billboard, he was a self-appointed high status figure. Simone's enormous person on the billboard will indeed engulf and diminish him as the story progresses (Figure 4.3a and 4.3b). Taransky's panicky run against the background of an enormous and dominating image is shot with a panning camera and it alludes to theatre forms both as stage set and as a staging of a story on both levels: the framing — Niccol's film — and enframed — Taransky's story — narratives. Naturally to drive home the contrast between the significance of Simone she is represented as huge (Figure 4.11a and 4.11b) and Taransky's scampering tiny figure precisely shows his loss of status.



Left: Figure 4.2a      The elevated preacher like position Taransky assumes as a self-appointed ‘high- priest’ spokesman for Simone.

Right: Figure 4.2b      The visually diminished figure of Taransky making a sudden retreat after the fierce grilling from information-hungry paparazzi.

Foregrounding in a visual way of how lowly Taransky will become in character as a confabulator and even a murderer are given as premonitions of the rest of the narrative to come. The satire of the scenes relies on anti-climax. The allusion would not be lost on the viewers who know how popular stories are about fallen holy men of high status. This is a stereotype exploited at least since Lucian of Samosato’s (second century CE) *Alexander the false prophet* up till episodes in *The Simpsons*. The central composition in the frame (Figure 4.2a) with Taransky as the main focal point echoes the elevated position of some ‘high priest’. The visual clues to this are the emphasis of the upraised hands and the “stole” formed by the vertical, symmetrically arranged, lines of microphones. The religious allusions in the film about Hollywood worship of celebrities and simulations seem appropriate and in harmony with its content.

Categorising of different kinds of information in the film is not only required for ‘putting’ the narrative of the film together. It is also spread throughout different levels of meaning of the narrative where the visual allusions need to be processed first by viewers as a quick means of understanding. Then fine-grained associations begin to operate as viewers decode ideas such as priesthood, worship, belief, the symbols and metaphors of which are subtly spread through the visuals.

#### **4.2.2 Fixing attention**

Viewers' attention can easily be diffused and that is why the technical devices of storytelling through the medium of film are ordered in such a way that not only allows accessible processing information but holds the viewers' attention. One of the strategies of initiating attention is to confront viewers with shots which raise expectations of further explanations. Such shots may be unfamiliar images of familiar objects, images of objects or environments which seem to be unconnected to the narrative or atypical camera angles. In written and oral narrative it will be shocking moments like Sinbad the Sailor flying on an eagle in the Arabic stories, or the *deus ex machina* in ancient dramas.

There are various strategies for fixing the attention of consumers of cultural objects. In artmaking, the non-pedestrian, stimulating, extraordinary approaches to concepts and media are the tactics, which artists use to ensure that their art objects are noticed and considered as vehicles for meaning making. In narratives, the novel or extraordinary circumstances or events play a significant role in securing viewers' or readers' attention. Ordinary characters made to behave in non-stereotypical ways, commonplace situations by extraordinary individuals, or entertaining and unpredictable solutions to address humdrum problems are all conducive of attention and are useful cultural strategies. The particular way used to earn viewers' or readers' attention arises from the content of a narrative (Boyd 2009).

Niccol exploits the spectators' tendency to have their attention mobilised when confronted with enigmatic, curiosity-arousing images by following such shots with others that feed the viewers' need for explanation and reward the spectators with a series of 'aha' moments. In this way he establishes and maintains the conscious attention of his audience. Boyd (2009) calls this effort on the part of the storyteller earning the attention. The close-up shot of colourful jellybeans is at first enigmatic in terms of a film about celebrities but when followed by the

explanatory shots of a film director who sorts out the colours of sweets to please his leading role actress, Nicole Anders, the scene becomes satirically illuminating (Figures 4.3a, 4.3b, 4.3c, and 4.3d).



Left: Figure 4.3a      The opening close-up shots which come to focus to reveal jellybeans are initially out of focus and enigmatic.

Right: Figure 4.3b      The image is brought to focus and becomes recognisable.



Left: Figure 4.3c      Sorting out of jellybeans — the ‘mysterious’ purpose of this activity attended with such reverence is revealed three minutes later during the conversation Taransky has with his wife — the explanation is provided.

Right: Figure 4.3d      An altar-like setup for the sorting of the jellybeans.

In science-fiction films technology is often used to fix viewers’ attention to speculate about the possibilities of the future evolution of culture. Technology (how Taransky creates Simone) in Niccol’s film and typically in most science fiction literature and I would like to suggest, films, is treated as a behaviour that can result in contrasting outcomes; on the one hand the use of technology can bring about deceptions and on the other it holds out the possibility of unveiling illusions;

it can be used to control and hold power over the nature and elements while on the other hand it can trigger irreparable damage to the environment or social fabric.<sup>17</sup>

The way technology is introduced in the film under discussion is, however, unrealistic. Kurzweil (2002) stresses that the portrayed sudden emergence of technologies more advanced than anything anyone ever dreamed of can happen only in fairy tales. Obviously the process of developing new technologies requires different groups of specialists cooperating towards a common goal. The move away from the understanding of how culture evolves pushes the film into the fairyland of improbabilities which can be used as an initial step to draw attention.

#### **4.2.3 Exercising the Theory of Mind**

Transmission of cognition and metacognition (Whiten 1991; Leslie 1994; Baron-Cohen 1995) has been extensively researched from the perspective of ToM in relation to its acquisition by children. Without a ToM, children and people generally are unable to “differentiate between their own beliefs about the world and someone else’s” (Dunbar 2000:239). In other words they cannot decide whether the other person’s belief is patently false or not.

The device of taking the audience into the author’s confidence and allowing them to have considerably more knowledge than the characters in a story has been relied on by many storytellers — Shakespeare’s *Twelfth night* (1601-2), *The tempest* (1610-11) or *A midsummer night’s dream* (1590-6) are good examples. The audience has prior information about the particulars of the plots concocted and played out by the characters. Such a strategy is very successful and is used in

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<sup>17</sup> For instance, *The Terminator* (1984), directed by James Cameron [also *Terminator 2: Judgment Day* (1991), *Terminator 3: Rise of the Machines* (2003), and *Terminator Salvation* (2009); *Surrogates* (2009), directed by Jonathan Mostow; *Gamer* (2009) written and directed by Mark Neveldine and Brian Taylor; *Minority Report* (2002), directed by Steven Spielberg.

popular contemporary comedies like *Tootsie* (dir. Sidney Pollack, 1982) or *Good advice* (dir. Steve Rash, 2001) as it allows the audience to exercise the ToM in a specific way. Gazzaniga's (2008) claim that humans excel at thinking socially supports observations in social studies in which participants are engaged in reading each other's behaviour and trying to determine each other's agendas. "The most common obstacle in both life and story is figuring out what other people *really* mean" (Cron 2012, Kindle loc 1072) and attributing and finding out the goals and actions of the protagonists in narratives and films is a human practice of sociality.

Reading the intentions of others or as Gazzaniga (2008:179) puts it (understanding the possible outcomes of a specific action) that "not only do you understand someone is grabbing a candy bar, you understand she is going to eat it or put it in her purse or throw it out or, if you're lucky, hand it to you" is an example of ToM. This cognitive functioning of humans is necessarily relied on in any successful storytelling and letting the audiences or readers know ahead the intricate details of the protagonist's view of the world, his interpretation of a given situation, his agendas, and his actions are key to rendering a narrative understandable not only graspable but appealing to the biologically based propensity for reading other minds.

Mind reading is relied on in a multitude of narratives, but the film *SlumOne* is particularly interesting as it occurs on two levels. Niccol primarily depends on this aptitude for telling his story about the desperate film maker to his viewers. On the second — the inner story — level he puts the main character, Taransky, through a series of ordeals that reveal problems in reading the intentions of others. On the first level viewers are given the insight into Taransky's status seeking. At this level his ambitions, intentions, concerns and motives are rendered in such a way as to enable mind reading by the viewers of *SlumOne*. The inner story, the embedded narrative, targets the very activity of mind reading itself and shows

how Taransky effectively — or sometimes not so effectively — tries to anticipate public and private behaviour while adjusting his agenda to fulfil his career ambitions. Through reading or viewing narratives about mind reading, humans exercise their own mind reading abilities and are afforded insights about this activity.

#### **4.2.4 Repetitious inner patterns**

To help the viewers to categorise information, repetitions are used to establish the inner pattern of the film. Repetitions of close-up shots like that of a computer drive mark significant moments in the film. The first close-up shot is used by Niccol to mark the first launch of the “Simulation One” programme after Taransky receives the computer disk while he is still unsure about his attitude to the idea of using a synthespian to finish his film (Figure 4.4a). Later when Taransky is determined to cover up the synthetic nature of his actress and he ‘launches’ her three-dimensional version through holographic technology (Figure 4.16f) it is marked with another close-up shot of a computer drive (Figure 4.4b). The third repetition of this close-up shot happens when Taransky’s daughter rescues him from prison by re-instituting (re-booting) the programme. These three instances of commencements of Simone are different in nature as the motivations underlying them arise from different goals.

The first instance of launching the programme is to satisfy Taransky’s curiosity about the possibilities it offers, the second instance is marked by Taransky’s determination to keep up with the charade he has invented for the existence of Simone. The third occurrence marks Taransky’s daughter’s intervention to save her father. All these developments in the narrative which show different intentions in using the simulation programme are marked in a visual way by the use of the same close-up image of the computer drive. Significantly, on the cultural level, these close-up shots satirically allude to a variety of ideas humans hold about the relationship between creator and creatum that range from Adam’s

rib to the concept of the ghost in the machine. The creator's apparatus for making the things he has created is veiled in secrecy in myth, but today it is shown to be nothing more than a machine.



Top: Figure 4.4a and 4.4b The repetition of close-up shots which thematically and structurally link the different stages of launching the synthepron into the public scene.

Bottom: Figure 4.c Taransky's daughter retrieves the computer programme 'containing' Simone.

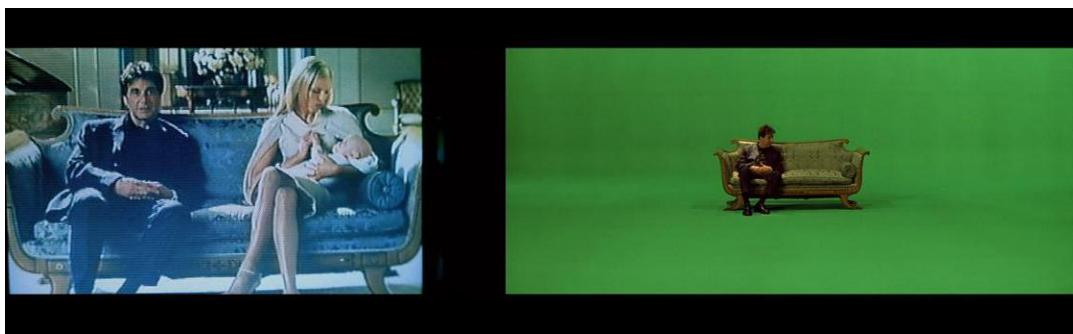
The shots and the way they are edited in the film tightly correspond to its narratives and sub-narratives and announce their patterns of events in film generally. Givón (2005) suggests that repetitions are of great value for passing on data and in his film Niccol wittingly applies this strategy to organise the plots into comprehensible information.

#### 4.2.5 Unmasking of deceptions — the concluding scenes

In exchange for the amusement and entertainment offered by Niccol's film the

spectators expect the story to be punctuated by surprising rewards for their patience. In biocultural terms they need to know their ToM has worked. Some of these delightful surprises are the unmasking of deceptions. The nature of the computer-assisted filming techniques like the use of green screen processes which were visually hinted at in the shots of billboards (Figure 4.11a, 4.11b, 4.13a, 4.13b and 4.13c) is revealed at the conclusion of the film (Figure 4.5a and 4.5b). In those concluding shots Simone with her “life partner”, Taransky, and their baby gives the television interview. And she announces her intentions to participate in assisting socio-political changes!

The technicalities behind creating the shot in Figure 4.5a are supposedly “unmasked” (in Figure 4.5b) through the use of the green screen. The theme of filmic and simulated deceptions that Niccol addresses in his film expressed through the behaviour of his main character is emphasised even further when Niccol exposes himself to be as cunning in doing this as any other film maker. This is done through the irony of the double take on the visual game: what seems to be, is not; as the shots of the TV interview were not constructed — the shot (Figure 4.5b) suggests and supposedly explains. The layered patterns between deceptions and candour about simulation as visual and conceptual trickery in filmmaking point to evolutionary complexities of visual storytelling.



Left: Figure 4.5a      The shot from the televised interview alludes to the theme Madonna and Child.  
Right: Figure 4.5b      The green screen technique that was supposedly used in filming the interview is revealed.

## **4.3 THE TRANSMISSION OF COGNITION THROUGH EXTERNAL REFERENCES**

External referencing serves to take a film out of its internal existence as it refers to the outside of itself and positions itself in relation to other films and cultural objects. On the one hand such technique points to the film as simply a film ('I am just a film', a cultural object referencing itself as a cultural object like the Magritte 1928-29 painting *The Treachery of Images /La Trahison Des Images* — popularly known as "This is not a pipe"); on the other hand such referencing takes a film outside of its internal existence. This is done by drawing attention to other films or cultural objects and allows these films (and cultural objects) to be seen as cultural patterns that are biologically enabled by pattern recognition.

Clark's claim that coupling of "parts of environment" with the brain gives rise to the idea of "extended mind" is relevant to numerous examples of narrative and visual texts. This is evident in the film S1mOne where the external referencing extends the film beyond itself and its own reality to allude to, interfere with and interlink itself with the outside environment which in the first place provided the technical resources and the necessary knowledge to produce this and other films.

### **4.3.1 External referencing for the insiders**

Niccol goes as far as illustrating the instance of deciphering such external referencing in the plot of his film. The location of the television interview with Simone — composed by Taransky with a background landscape picture he took from the Internet — is recognised by one of the paparazzi (Figure 4.6). This 'detective' work of figuring out the filmic references to the outside world is a humorously constructed symbol for the activity of spotting the external references in art objects. It is an allusion to the activity that underpins a cultural analysis of cultural objects and texts. In terms of Boyd and Richerson's ideas (2005) such activity shows the evolution of culture and the spread of cognition in

which the visual and narrative strategies are traced and demonstrate the passing down of “cultural variants” which can then be developed further or undergo a process of adaptation or demise.



Figure 4.6 “I know this place!” — a shot that exemplifies the activity of literal and figurative pointing.

### 4.3.2 Allusions to grander themes

Linking the allusions to other stories, making associations between different kinds of rituals, connecting seemingly distant ideas by spotting similar elements of their underlying pattern is what humans do as naturally as tracking animals for survival. Mastering the local patterns for tracking prey or teasing out the “causal patterns linking particular chemicals to particular cancers” (Boyd 2012:10) or tracking different appearances of similar stories or motifs is the survival strategy that humans actively pursue. “A theory of culture must account for the processes in the everyday lives of individuals that cause such changes”, say Boyd and Richerson (2005:4). Niccol’s film is such an account as it is not only the result of cultural changes through the development of film technologies and narrative strategies, but it also provides a version of those accounts that target filmmaking as a social process.

The ultra-wide angle camera shots of Taransky's press release emphasise the sharp vanishing point of the studio lines evoking the Renaissance device for creating the illusion of space and depth — perspective drawings. Buckland observes that the continuity of the editing is aimed at imitating the space of a Renaissance painting (1998:14) and while this approach is evident in Niccol's editing of his shots, the imitative value of such editing is highlighted by Niccol through his use of Renaissance visual strategies that are employed in the formal composition of certain scenes. Niccol formally stages a central composition, framed by the one-point perspective of the studio buildings, in which Taransky gives a press release on behalf of his synthetic actress to the gathered paparazzi (Fig 4.1). It is the formal pattern of central composition that echoes and resurrects the stylistic devices denoting a religious order of the world that was used by Bellini (Fig 4.6a) in his altar piece *Madonna and Child Enthroned with Saints*, San Zaccaria in Venice (1505), or Piero della Francesca's 1474 work *Montefeltro Altarpiece* (Fig 4.6b).

The enlarged scale device, used in many Trecento and Quattrocento depictions of the Madonna like that by Giotto in his 1310 *Ognissanti Madonna* in Uffizi, Florence, alerts the spectators of the film to the status and importance of the portrayed personae, and is humorously adopted by Niccol in the scene where Taransky runs in front of the gigantic image of his 'synthespian' Simone. In that scene she has become like a religious deity, omnipresent. Such strategies mock the presence of divinities, of either the spiritual, religious or entertaining nature who feel they have an all-powerful reign over the human world. The satirical commentary here is that of a parody, where the placing on the pedestal of seemingly 'beyond the shadow of a doubt' ideas and the unquestioned worship reverberates through human history and is pointed to as a behaviour of a non-reflective kind. The human capacities for accumulation of culture are asserted in the film while the blind human attachment to unquestioned cultural traditions is revealed as the pattern of potentially maladaptive behaviour enabled through

gullibility and a propensity for idealisation.



Left: Figure 4.1 Taransky and the press.

Middle: Figure 4.6a Bellini, *Madonna and Child Enthroned with Saints of San Zaccaria* in Venice, 1505.

Right: Figure 4.6b Piero della Francesca, *Montefeltro Altarpiece* — Pinacoteca di Brera in Milan, 1474.

#### 4.3.2.1 *Allusions to making illusions*

In the medieval Christian tradition, observes Warner (2006:123), illusion, enigma and conjuring tricks were believed to be the devil's means for creating deception as he conned humans and "summons images ... playing on desires and weaknesses". The visual trickery of a simplest kind, the shadow projection conjured by Taransky in the hotel scene, is aimed at exactly this objective — to fulfil the desires of the paparazzi who are ready to use any underhanded means to get a closer look at Simone. The shots of the shadow projections of the Simone's supposed silhouette on the outside window's curtains (Figure 4.7a) are intermixed with the shots which inform the spectators of the film about the incredible simple, low-tech trickery used for the deception (Figure 4.7b).



Left: Figure 4.7a      Shadow projection — the outside view.

Right: Figure 4.7b      Shadow projection — the inside view.

These shots intermingled with the shots of the happy crowd of paparazzi gathered outside the hotel windows oscillate between the truth of what really happens, deception (what is perceived by the paparazzi as having happened) and desires that deceptions can anticipate (what people want to see). This comically staged triad of behaviours raises questions about cultural means to create and control perceptions and satirises the ease with which public appetites can be managed.

The technique of shadow projection is old and the shot (Figure 4.7a) can be traced not only to other films (Figure 4.7c) but alludes, intentionally or not, to the traditions of the art of shadow ranging from Indonesian shadow theatre (Figure 4.7d), to 18th-century experiments with shadows (Figure 4.7e) or Lotte Reiniger's 1925 "shadow film", *The adventures of Prince Achmed* (Fig. 4.7f), to the early filmmaking of Meliès. It reaches back to Plato's cave of shadows (Figure 4.7g). The development of ideas of creating illusions as the visual support for storytelling is enabled by the principles of evolution of culture and as Boyd and Richerson explain (2005) the propagation of shared processes and ideas becomes the ground for further modification, adaptation of newly founded cultural behaviours, which in this case are the activities of making illusions and their continuous refinement.



Left: Figure 4.7c A still from the film *Home Alone* (1990).  
 Right: Figure 4.7d Indonesian shadow theatre – visual storytelling for the purpose of passing on morals, myths and knowledge



Left: Figure 4.7e Joseph Benoit Suvee, *Invention of Art of Drawing*, 1793, oil on canvas.  
 Middle: Figure 4.7f A still from Lotte Reiniger's 1925 "shadow film" *The adventures of Prince Achmed*.  
 Right: Figure 4.7g Jan Saenredam, *Plato's Allegory of the Cave*, 1604, engraving.

### 4.3.2.2 Visual allusions

In the film *SimOne*, Niccol alludes to the whole range of making visual illusions from shadow puppetry to three-dimensional holographic imagery (Figure 4.8a) and it is composed of many visual and conceptual (witting or unwitting) hints to other cultural products. Verne's (1828-1905) Nautilus equipped with a beam of light in *Twenty thousand leagues under the sea* (1869), Lang's 1927 *Metropolis* with its magical-scientific conception of the robotic Maria as the new working class of *Maschinenmensch* (Figure 4.8b), or teleportation devices in *Star Trek* (Figure 4.8c) or motion capture processes (Figure 4.8e) can be mentioned as visual references in scenes of public performance by Simone. While, however — in a nutshell — Verne tells a story about the control of nature or Lang's film addresses the age-old human dream to create and control machines, Niccol's fable

deals with creating stories (films in the case of Taransky) and their control by creator after their conception. Huyssen (1987:68) argues that in *Metropolis* “doubling, mirroring and projecting not only constitute the technological make-up of this film, but they lie at the very core of psychic and visual processes that underlie its narrative”. He (1987:77) explores the male gaze, the threat of female sexuality and examines the metaphorical representations of the female as a “Minotaur and as technology-out-of-control” in the film itself and historically.

The sexual angst that underpins *Metropolis* and its interpretation gives way to the numerous anxieties of a film maker in *SImOne*, for whom technology does not hold the dark gender undercurrents but is a means to tell stories through film. The anxieties Taransky experiences are the outcome of complex social behaviours for self-preservation and survival such as status seeking, finding a mate, self-expression and aptitude for making deceptions and falling prey to deception. Producing the hoax — the syntheppian, Simone — and inventing increasingly intricate ways to conceal it becomes a form of play, an artwork itself.

The holographic representation of Simone wrapped in a beam of light not only resonates with the image of the robotic Mary (Maria, or the Virgin Mary?) in *Metropolis* but also can be interpreted as alluding to more ancient, pre-Freudian attitudes to the feminine (Figure 4.8f). It took centuries for the disagreeable attitudes towards women to be modified: from St Jerome's fierce denunciation of them in the early years of the Christian Fathers to the 12<sup>th</sup> century ‘revolution’ in attitudes towards women. Warner (2013) expands on the advent of the Marian cult and the birth of chivalry. In biocultural terms a new twist to mate selection to be chivalrous and courteous as knights were supposed to be. As early as the biblical Ezekiel attitudes to women (in his case prostitutes) show how culture and not only biology determines mate selection. Picasso's deconstructions of women in some of his works look forward to postmodern or feminist frameworks and show the evolution of changed ideas about the masculine and the feminine. The new

biological revolution, the cognitive turn, encompasses all these historically varied views of and attitudes towards women and situates them in the perspective of the evolution of culture which is underpinned not only by human biology but also is influenced by our knowledge and understanding (or lack thereof) of that biology.



Left: Figure 4.8a A still from Simone Taransky produces 3D holographic representation of his synthespian for a worldwide concert performance.

Right: Figure 4.8b A still from Lang's Metropolis where the robotic replica of Maria is charged to life — Rotwang, the inventor-magician creates Maschinenmensch.



Right: Figure 4.8c Alphonse Marie de Neuville, Nautilus (1869), illustration from Jules Verne's *Twenty thousand leagues under the sea*.

Left: Figure 4.8d A still from the *Star Trek* series (1987), The next generation — teleportation.



Left: Figure 4.8e Example of motion capture processes.

Right: Figure 4.8f Alessio Baldovinetti, *Annunciation* (1447) Tempera on wood, 167 x 137 cm Galleria degli Uffizi, Florence.

### 4.3.3 Patterns and mythologies

*SImOne* is constructed of a series of limiting and enabling subplots which engage with each other. One of the limiting subplots is the breach of contract by Taransky's actress; this subplot is resolved by an enabling subplot, that of a computer programmer who makes it possible to take filmmaking to digital mode. In order to draw his viewers' attention to the patterns in the narrative, Niccol uses a system of mythological markers for his subplots. The capricious actress, Nicole Anders, can be identified with the Greek Aphrodite while the computer programmer, who insists on equipping Taransky with his technological gift and who has lost one eye because of the computer screen exposure, can be interpreted as an allusion to Cyclops. They were the one-eyed members of a primordial race of giants who handed out new technological tools to the 'new' Greek pantheon of gods after Rhea and Kronos were overthrown: thunderbolt for Zeus, trident for Poseidon and the helmet of invisibility for Hades.

It is clear that Niccol attempts to draw his viewers towards the cognitive exercise of conceptually interrogating his film by using a series of mythological signs.

Niccol used the device of mythological markers in his *The Truman Show* (1998) in which the omnipotence and omnipresence of television were well marked with analogies from Christian mythology. In *SimOne*, when he shows Taransky's daughter researching the myth of Pygmalion and Galatea on the Internet it is a very overt kind of pointer to Greek mythology and Ovid's *Metamorphoses*. It is also, I suggest, a blatant ruse on Niccol's part — he seems to suggest the audience can also question and research ideas — he has not simply made them up. In this way he makes fun of himself as the authority on the problems he presents in his film. By doing this, he also mocks authoritative, unquestioned, unresearched ideas as stifling elements that work against the evolution of culture. The value of probing and examining ideas is illustrated in the film through the sole clear insight in the film about the real situation Taransky finds himself in. That insight comes from his daughter who questions, investigates and researches.

The relationships between contemporary and mythological signs in the film, which are in some cases more or less overt, bring humorous nuances into play and necessitate interpretation on the part of the viewers. It is in these moments when the roles and stereotypes are not clear cut, when Taransky is simultaneously a contemporary, ambitious film maker as well as the mythical Pygmalion or Zeus with his spectacular digital thunderbolt charming his worshippers, that the viewers are enticed to review and analyse their own casting of stereotypes. The placement of mythological markers in the narrative itself serves numerous purposes. The narrative opens up further opportunity of play with patterns. Some of the clues as to the mythical origins of some older patterns Niccol uses in the film are overtly addressed with visuals (Figure 4.9).

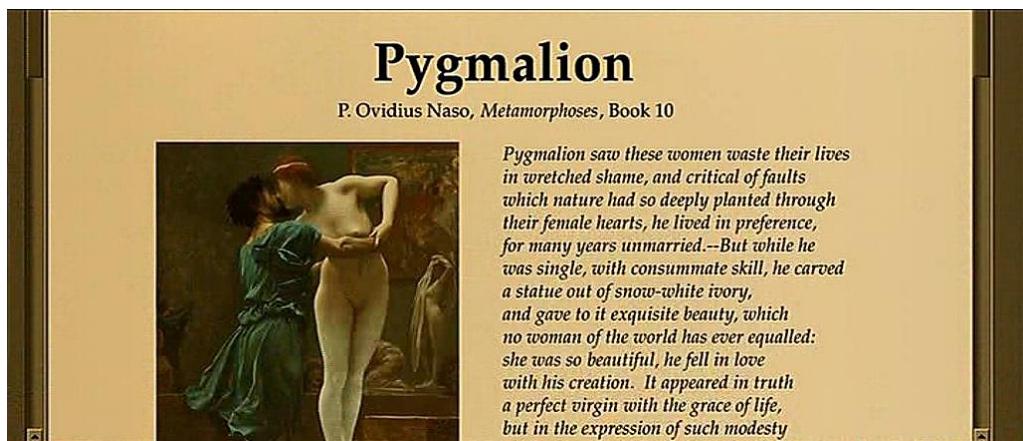


Figure 4.9

A still from *SImOne* — the internet page from the research Taransky's daughter, Lainey Christian, conducts at the same time as her father, like Pygmalion who according to Ovid “carved a statue out of snow-white ivory,” constructed a digital actress.

#### 4.3.4 Playing with open-ended patterns

The absurd activity of sorting out the colours and flavours of jellybeans does not only serve as the satirical commencement of the film, it trivialises Taransky's status as a film director. The activity of sorting is often treated in stories as an important cognitive task — after all this is a task enabled by pattern recognition, categorising information that humans use to understand events, stories, to process all kinds of data. Famously, Cinderella in her story sorts out grain from ash to symbolise cognitive work done to separate valuable ideas from the worthless ones: sorting is meant to be meaningful for the evolution of an individual and for the evolution of culture.

In many other narratives too, for example, novels, detective novels or films about the recovery of memories like *Memento* (dir. Christopher Nolan, 2000) or *Total Recall* (dir. Len Wiseman, 2012) or *Eternal Sunshine of the Spotless Mind* (dir. Michel Gondry, 2004), Nabokov's work *Speak, memory* (1951) the activity of sorting out the available data in order to arrive at some truth about the presented situations is paramount. It involves the participatory attention of the readers or viewers who — with their curiosity aroused — follow the puzzling plots to their

denouements. Niccol, however, in his satirical portrayal of the human relationships within the Hollywood filmmaking industry, trivialises this activity of ‘figuring out’ the essence of things and subverts it to show how meaningless, tiresome and futile it can be — in the context of Hollywood.

There are multiple allusions in the few opening establishing shots that confront the spectators and fix their attention as Niccol brings together an assortment of “cultural variants”. The allusion to a kind of an altar and a preparation for the Holy Communion marks the mordant satire by which Niccol references the elevated “spiritual” or “godlike” status some film directors claim for themselves. Through the use of multiple allusions Niccol feeds what Boyd (2012:10) expresses as, the “human appetite for open-ended pattern”.

Pattern recognition, the inbuilt ability to process information through template and prototype matching and relying on feature analysis and recognition of components, lies at the heart of storytelling. The storyteller can be sure his spectators or listeners will make sense of the patterns that stories are composed of — conflicts and resolutions, announcements and denouncements, development of story lines, external referencing to other films, or referencing other cultural objects like paintings, myths and stories.

#### **4.3.5 Empathy and cognition**

Playing with open-ended patterns originates in the behaviour of play, which according to Panksepp (2012) is a way of exploring emotions and forms the basis for developing empathy and cooperative social behaviour in humans and other animals. Social interaction and communication enabled by play and enabling playful behaviour also depend on categorisation and pattern recognition which in turn are underpinned by facial recognition, as Meltzoff’s (1995) studies on newborns confirm. According to Graham and LaBar (2012:553), the human face plays a vital role in socialisation as it “conveys a rich source of non-verbal

information used during social communication [and while] research has revealed how specific facial channels such as emotional expression are processed, little is known about the prioritization and integration of multiple cues in the face during dyadic exchanges”.

The strategy of how to deal with multiple cues, in films, is usually solved by sequencing them over a number of shots so as to allow the viewers to “process” the facial communication over a segment of time. The dyadic exchanges are mostly dealt with by coupling or stringing them into a series of evoking and evoked gazes (Figure 4.10a – 4.10b).



Figures 4.10a and 4.10b   The soft emotional gaze of Simone evokes the emotional response in the viewers of her acting.

The empathy enabled by mirror neurons (Rizzolatti & Craighero 2004; Gazzaniga 2005; Ramachandran 2011) is deepened by the use of “the long lens [...] for close-ups [as] its shallow depth of field automatically softened and glamorized faces” (Bordwell 2006:127). The blurring of the background and the surrounding of the face filmed with those techniques results in blotting out all the irrelevant information to communicate human emotion to which humans respond so well. Bordwell explains that the use of new lenses yielded some “stylistic by-products” extending and enriching the technical and visual base of filmmaking (2006:127) which follows the pattern of the development of “cultural variants” that participate in the evolution of culture.

#### **4.3.6 Shots to remind spectators of the deception**

Another kind of visual patterning that underpins the film is the use of still images which serve as a signal, a reminder to the spectators of Niccol’s film that they are viewing a staged and arranged simulation of reality. That alienation technique harks back famously to Bertolt Brecht (1898-1956). The typical practice in Hollywood filmmaking is to mask all the evidence of staging of filmed events with technical processes like green or blue screens and to remove or erase all the traces that could remind viewers about the technical side of filmmaking.

In *SlimOne* these traces are recalled to expose the constructed nature of filmmaking. The markers between different parts of the film used by Niccol are the illusion devices, props, like billboards or stage backgrounds which when used as establishing shots are almost immediately revealed as not a filmed reality but as filmed or photographed images of reality. The revelation of these images is done through different ways of editing and camera techniques and serves as a move away from the formulaic monotony of these shots.

In the sub-narrative in which Taransky holds a press conference and runs away from the pursuing media, a juncture is created by the shot of the monumental

image of Simone lying on her side, already referred to, and seconds later when Taransky is shown running in front of this image, the panning camera work is used to confront the viewers with the true nature of that establishing shot – it is a picture on the gigantic billboard (Figure 4.11a and 4.11b).



Figure 4.11a and 4.11b      Running into fiction – the image of Simone as a dominant stage set.

In the scene where a conversation takes place between Taransky and the computer programmer, Hank Aleno (an anagram of *alone* — as Taransky increasingly becomes), the narrow backstreets of the film production studios are revealed. A film prop, the billboard with the iconic image of a single eye, has been transported from one studio to another and its glimpse has been caught through the gap between the buildings giving the impression of a piece of a film sliding through the aperture of a viewing apparatus (Figure 4.12a and 4.12b). This is almost a reverse technique in terms of movement to the one used when Taransky is shown running into a gigantic and static image of Simone; the image of an eye slides through lacunae between film studios.

The image of an eye that does not really see can be used to denote the old adage that beauty is in the eye of the beholder and satirise the film industry which operates on external images and favours externally beautiful people who, like Nicole Anders, the initial actress in Taransky's films, have no view of inner values such as adaptability, sociality and cooperation — the base of the evolution of culture. The eye recalls the Cyclops (Polyphemos) in Homer's *Odyssey* (Od. 9) from whom Odysseus and his men escape by using a ruse —

they exit with the sheep (themselves safely tied underneath) from Cyclops's cave after Odysseus has blinded the monster. The trick to escape the monster of the public will be a cunning one that Taransky will use. He, like Odysseus, will eventually have a safe homecoming. But Taransky's world is not the epic one of Homer and Niccol takes trouble to satirise its meanness, narrowness, and lack of adventure.

In the film, the 'billboard' eye, although denoting the omnipresence of the film making eye and alluding to the relationships between the observer and the observed it still does not see. As in Cezanne's ruminations (see 2.2.1) about the true nature of seeing depending on the mind's interpretation, Niccol wittily reminds his viewers about using discernment. The subversions of stereotypical signs used by Niccol like "looking but not seeing" are extended and reinforced by other insurrections: pointing at things but not "getting" them, showing the way but instantly losing the path, or creating a simulacrum and losing one's own identity to it.



Figure 4.12a – 4.12b The billboard with the image of an eye is being transported across the end of a passage between the studio buildings.

Another instance where the billboard setting is used to propagate subversions and ambiguities is the scene of the celebrity function in which the surroundings at first seem to be a vast spacious beach environment, but moments later while Taransky socialises with his filmic colleagues, the fact of its being a billboard is revealed. There is a solid wall serving as a support for the monumental image of the beach (Figures 4.13a, 4.13b and 4.13c). This revelation is not done through a

typical zooming out shot showing the image of the beach in its surroundings but through its awkward spatial relationship to the parking lot. The spatial illusory confusion constructed in these shots suggests the necessity of learning how physically and mentally to orientate oneself and navigate in such deceptive landscapes. Some fairy tales hint at such illusory environments (usually made of a multitude of mirrors) that are created by malign forces to confuse and trap benevolent protagonists. Satirically Niccol points to Taransky's inability to see and further outwards to his spectators whom he has tricked.

These illusionistic techniques not only mark the narrative junctures but conceptually support the content of the film about illusions in which a simulation is received by the whole world and believed to be a flesh and blood actress. The scene in the parking lot is similarly trivialised by Niccol just as the press conference given by Taransky was, though it is created in this instance by the verbal and not visual bathos as a waiter at this apparently important function for the chosen elite of film industry informs Taransky that a free carwash has been dispensed! This huge favour is granted simply because Taransky now belongs to the elite of VIPs.



Figure 4.13a     The visual distortions of the environment.



Right: Figure 4.13b

"We gave you a complementary carwash".

Left: Figure 4.13c

The illusionistic environment where nothing is what it seems to be.

#### 4.3.7 Gestures and cognitive engagement

The example in "I know this place!" (Figure 4.6) reflects Tomasello's (2010) conclusions about the use of gestures as the devices that underpin human cognitive engagement with their environment and with each other. Tomasello (2010:7) proposes that "human cooperative communication — whether using 'natural' gestures or 'arbitrary' conventions — is one instance [...] of uniquely human cooperative activity relying on shared intentionality".

Pointing, as Tomasello (2010:3) says, is a "primordial form of human communication" that evolved into a complex and advanced form used extensively in culture. It operates on processing inner knowledge and can be directed to analyse the outside circumstances. A cultural object is both the pointer and the pointed at. The film illustrates this capacity humans have to point at events, issues, ideas or values and to engage with them in a testing manner. "Spotting the discrepancies" is what the paparazzo does after his pointing to the visuals he has some knowledge about (Figures 4.14a-4.14d).

This subplot is congruent with the insights provided by Boyd and Richerson (2005) about the nature of human culture and it illustrates that the evolution of culture is not only driven by dissemination of information but by testing and questioning of the passed on information so that it can be reliably acknowledged

as valuable and advantageous. It is unfortunate that the conclusion drawn by the paparazzo is not that Simone might not exist but that Taransky keeps her imprisoned; that becomes a satirical comment Niccol makes about the human capacity to singlehandedly process information in novel ways by people unaccustomed to critical thinking.



- Figures 4.14a – 4.14d      Spotting the differences.  
 Left: Figure 4.14a      Still from the televised interview with Simone.  
 Right: Figure 4.14b      Comparison of the views of the location.  
 Bottom left: Figure 4.14c      The actual ‘current’ location which since the time the internet photo was taken (and used by Taransky) has changed – a building in the background has been erected.  
 Bottom right: Figure 4.14d      The paparazzo ‘faces’ the discrepancies between the physical and photographic evidence.

When the snooping character in the film, the paparazzo, points at the place where Simone supposedly conducts her televised interview, viewers expect that the truth about Taransky’s plot will be finally revealed. Instead, Niccol subverts these expectations by making the paparazzo draw conclusions that are in contrast with the “inner” knowledge the audience of the film possesses — a typical move in dramatic farce. The paparazzo claims “Simone is kept a prisoner by Taransky!” The moment of possible insight or enlightenment in the film,

supported by a clear pointing gesture, is turned upside down and the shocking farce hits the audience: the blind are leading the blind.

The deliberate communicative and revealing *function* of a pointing gesture is set off in the film against the limitations of the “gesturing agent” (the paparazzo). Although the paparazzo correctly spots the tree that leads him to the real location of Simone’s TV interview, it does not lead him to the real reason for Simone’s reclusiveness. The emblematic value of gestures “which have a direct verbal translation, like head-nods, beckoning, and pointing” (Burrow 2004:57), is destabilised in the film as *voluntas significandi*. So the meaning of the pointing gesture to the circumstances which could assist in unravelling confabulations collapses. Although the paparazzo points correctly to the tree in the location Simone had supposedly conducted her interview, his conclusion about Simone-Taransky relationship made upon his discovery is amusingly defective. The pointing gesture acquires its own satirical signification in the film as it is turned upside down and ‘points’ to the futility of searching for truth when under the reign of preconceived ideas. The pointing gestures in cultural objects traditionally serve to draw the attention of viewers to something or someone of importance but not overtly and sometimes hidden from the immediate view.

There is a multitude of various examples throughout the history of cultural objects and texts where special attention was given to gestures. One such famous example is that of Michelangelo Buonarroti Simoni’s (1475-1564) *The creation of Adam* (1511) (Figure 4.15a) and whichever art-historical interpretation of the work is closer or further from the artist’s intentions (whether demonstrating God’s “power of life”, the “awakening” of Adam, the symbolic depiction of creation, the transmission of the “divine spark” or illustrating a spiritual hierarchy), the main issue for biocultural analysis is the significance of the pointing gesture in cognitive terms as the human species excels at communicating through signs.



Left: Figure 4.15a      *The creation of Adam* on the Sistine Chapel ceiling in the Church of S. Pietro in Vincoli in Rome.

Right: Figure 4.15b      *Hercules at the crossroads*, Annibale Carracci (1596), oil on canvas, collection: Naples, Museo e Gallerie Nazionali di Capodimonte.

The use device of gestural signification in cultural objects has had a long practice in representational (Figures 4.15b, 4.15c, 4.15d, 4.15e, 4.15f) and conceptual art-making (Figures 4.15g, 4.15h) where it has been exploited for its metaphorical, ethical and conceptual value. The gesture, however, arises out of primate responses to external and internal stimuli.



Left: Figure 4.15c      *Hercules at the crossroads*, Pompeo Batoni (1748), oil on canvas, collection: Liechtenstein Museum.

Middle: Figure 4.15d      *The Continence of Scipio*, Niccolò dell'Abbate (1555), oil on canvas, location: Louvre Museum.

Right: Figure 4.15e      Christ Pantocrator, mosaic (1174-82) in an Albanian Catholic Church from Cefalù Cathedral, Sicily.



Left: Figure 4.15f Neo-Assyrian cylinder seal c.85BC, location: British Museum.

Middle: Figure 4.15g Warren Neidich, *Conversation map (I worked on my film today. Are you dating someone now?)* (2002), digital composite image of conversations conducted in sign language with lights attached to participants hands.

Left: Figure 4.15h Warren Neidich, *Conversation map (I am in love with him, Kevin Spacey)* (2002).

## 4.4 PROPAGATING COGNITION THROUGH SATIRE

Satire is one of the finest cognitive vehicles we have for subversion of stereotypical attitudes. The punch that satire is made to deliver in *SImOne* is both visual and gestural — it forces a human response as it confronts with the portrayals of upside-down behaviour, deception, arrogance, lack of empathy, ignorance, and self-deception.

### 4.4.1 Repetitious shots to mock

The scenes in the hotel, in which Taransky acts out the bodily presence of Simone are of short duration and are placed rapidly after each other using close-ups of body evidence shots of blonde hair or female lingerie or a used bar of soap. They are intermixed with bird's eye view shots of Taransky frantically rolling in and working at disturbing the sheets of the hotel king size bed and medium shots of him arranging a bath for Simone's non-existent body (Figures 4.16a, 4.16b and 4.16c).

The pace of these shots matches the frantic character of his actions. These shots are matched to similar shots of the paparazzo, who while investigating the hotel suite for Simone's remnants, starts in a fetishistic way to caress the objects

which were supposedly touched or used by her. The pace of the shots, however, slows down to fit in with the slower, examining and admiring mood of the paparazzo who seeks to ‘soak’ himself in the ‘bodily’ aura of the synthespian. The same shots of the hotel bed viewed from above with (this time with not Taransky but the celebrity-hungry paparazzo in it) are longer and comically supported by the mood enhancing music typically used in love-making scenes in many American films (Figures 4.16d and 4.16e). Anti-climax, direct parody and lampoon are directed at the paparazzi in general by Niccol.



Figures 4.16a, 4.16b and 4.16c      Taransky stages the presence of body-less actress in the hotel suite.



Figures 4.16d and 4.16e The paparazzo reconstructs the presence of Simone and worships all objects supposedly touched by her.



Figures 4.16f, 4.16g, 4.16h & 4.16i Hotel scenes — the shots satirically reveal before and after situations.

Staging of the hotel deception scenes is deployed in a satirical way when the main recipient of the ‘stage’, the paparazzo ‘takes Taransky’s bait’ and delights in it. His pleasure in being absorbed in the environment created by Taransky might not be surprising as it is the professional trademark of film directors to be able to put together and construct the *mise-en-scène* for their films. There is an analogy between Taransky staging scenes for the paparazzo and Niccol’s constructing the reality of filmic endeavours for the viewers — the first construction is aimed at deception, however, while the second targets spreading of cognition and

humorously reminds the viewers that the nature of filmmaking relies on illusions.

#### 4.4.2 Mocking gestures

When Taransky, held on the charge of murdering Simone, clasps the bars of his prison cell, the viewers are reminded of the other examples of gripping the confining rods and this gesture communicates frustration and desire to break free, to overcome the imprisonment (Figures 4.17a and 4.17b). This dramatic gesture has the significance of the embodied consciousness and humans rely on such gestures as they are primal responses to experienced events. Niccol brings about an ironic twist to the scenes of imprisonment by exposing how Taransky has been hoist by his own petard. The viewers witness the ironic subversion of status acquisition: Taransky, who after all, is the creator of the most influential celebrity in the world, is powerless in the face of people's (the paparazzi, the police detectives, his own lawyer's) "thinking" habits which target the obvious solutions to problems.



Figure 4.17a      Taransky's imprisonment.



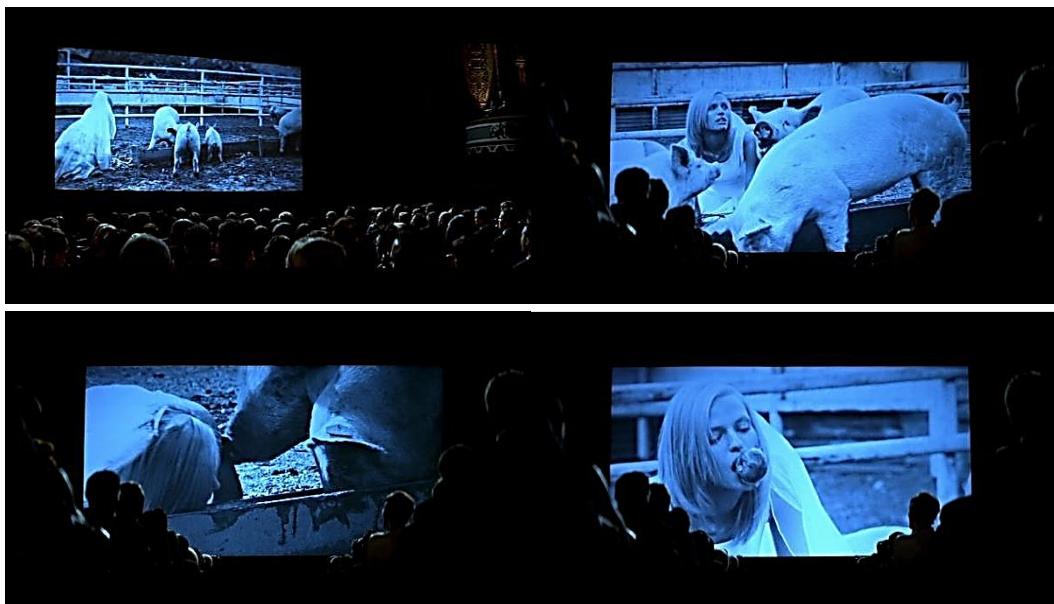
Figure 4.17b      The creator of the most influential celebrity in the world is powerless.

The prison scene is loaded with subversions. The conversation between Taransky and his lawyer reveals that the false orientation of truth to publicity dominates popular thinking. The lawyer prompts Taransky to admit to the murder by saying “Victor, come on, *it's in the papers!*” — a satirical reference to our reliance on the mass media for conveying half-truths. The status acquisition is shown to be arbitrary when the film director, the maker of *SimOne*, is portrayed as incapacitated by people who are incapable of grasping the essence of things.

Satire as a form of cognition is perhaps the most complex — as it is counterintuitive — lesson in moral values. The simple biblical claim that “the meek shall inherit the Earth” receives a satirical treatment in the film: the status driven society removes itself from reality by being preoccupied with status seeking. Satire serves well in the film as it is used to facilitate rapid understanding and learning, and it confronts the flawed assumptions by disarming aggression against challenging the dubious opinions through provoking laughter.

#### 4.4.3 Subversions of subversions

Subversions of stereotypical or expected behaviour are the cognitive mechanisms Niccol uses to spread his experiences in the world of film making. The subversions are of satirical kind as they undermine the predictable outcomes that the audience of the film expects. The gesturing paparazzo (Figure 4.6), who seems to be on the verge of discovering the truth behind Simone's existence, arrives at a completely unexpected and ludicrous to the viewers' circumlocutious conclusion: that Taransky keeps his actress imprisoned. The plot Taransky employs to discredit Simone in a series of TV interviews and to make her the media's *persona non grata* backfires as the audience in the film judges her politically incorrect and ecologically unfriendly views as refreshingly honest. The film "I am pig" (Figures 4.18a, 4.18b, 4.18c and 4.18e) Taransky makes on behalf of Simone aims to debase her; however, again it is most reverently received by the audience within the film *SImOne* and the attempted subversion of Simone's status is subverted itself.



Figures 4.18a, 4.18b, 4.18c and 4.18d

"Stills" from Simone's film "I am Pig".



Figure 4.18e

The attempted subversion of Simone's status backfires and Taransky dispiritedly faces the film poster for Simone's cinematic effort.

#### 4.4.4 The parting satirical shots

The final satirical shot is that in the credits of the film Niccol acknowledges in a light-hearted way the support of actresses who supplied their facial features to compose Simone (Figure 4.19a). This is done by means of a conceptual joke but the further layer of this satire rests on the understanding that, indeed, there is a lot to be grateful for to the previous generations who enabled what is possible today.



Figure 4.19a

"Simone wishes to thank the following for their contribution to the making of Simone" — alliances are not only of the social kind, they most importantly are formed with ideas and significations.



Figures 4.19b, 4.19c and 4.19d    Stills from *SImOne*. In the epilogue scenes Taransky is shown to continue creating illusions.

The epilogue scenes depict Taransky as continuing to inhabit “an imaginative realm called Neverland” (Gottschall 2012:iv); this behaviour of adapting reality to fictions reverberates with the motto of the Shakespeare’s playhouse, The Globe (1599-1613), “*Totus mundus agit histrionem*, which can be translated as ‘All the world’s a stage’ (*As you like it*, 2,7, 1037)” (Oathly 2011:11).

#### 4.5 THE BIOLOGICAL TRAITS FOR SURVIVAL

This section begins the analysis of the film and expands by concentrating on various traits that organisms, human or not, use to survive. Some of them have led to the evolution of culture, some have not. Biologically based behaviour that enables problem solving, formation of alliances and construction of narratives or promote status seeking is discussed here as particular events in the film *SImOne*. This is done to show that such biological behaviour underpins the narrative of the film.

#### **4.5.1 Status seeking**

The irony of Taransky's behaviour is that while he tries to establish his place in society, which works at the beginning of his 'simulated enterprise', his actions eventually result in increasing the distance between himself and others, the exact opposite of sociality. The core of human cultural evolution is the sharing and exchange of gathered information and knowledge, as Boyd and Richerson (2004) explain, and the lack of sharing and interrupting the flow of information that Niccol points to through his main character, Taransky, brings about alienation. Niccol's portrayal of the effort Taransky makes to establish a position of status as a renowned film director displays insights into human sociality and the nature of the evolution of culture, the basis of which is the transmission of information.

The observation made by Boyd and Richerson (2004:4) is that "people living in human populations are heirs to a pool of socially transmitted information that affects how they make a living, how they communicate, and what they think is right and wrong". Taransky is shown in the film as a person who not only does not participate in transmitting information but actively aborts the information flow. This is done in service of Taransky's status seeking — and the necessity of maintaining secrecy to uphold positions of power is a small illustration in the film of the bigger, historical trends and events like withholding schooling and access to knowledge from underprivileged social classes or "races".

#### **4.5.2 Exchanges fair or unfair**

The exchange of favours plays a vital part in social selection and in shaping "human capacities for culture" and although it has not been fully established how exactly the "altruistic rewarding for cooperation in larger groups" contributes to the evolution of culture (Fehr & Fischbacher 2003:790), in the film the incongruity of value of the "reward" for Taransky's contribution to filmmaking strikes one as comical. A carwash as "compensation" and acknowledgment of his

film directing talent seem incommensurate. The distribution of “favours” as a rewarding system does relate to the “fitness” level of an individual — but, to paraphrase Fehr and Fischbacher’s concerns (2003), who gets a car and who gets a carwash and how those decisions affect the evolution of culture, but to some other value or belief.

As “humans are … exquisitely sensitive to social rejection” (Maner, DeWall, Baumeister, & Schaller 2007) it is probably understandable that Taransky takes up a variety of approaches to counteract the ostracising measures. His drive to re-establish himself as a desirable social partner fits with the behavioural patterns described by Nesse (2010:143) that include the work toward improving one’s fitness, “displays of value and generosity” (Figure 4.20a) all of which are prominently portrayed in the film through the distribution of gifts to his daughter (like the vintage car Simone “drives” in Taransky’s film) or the renewed attraction his ex-wife feels for Taransky because of his alliance with such a socially powerful “actress”. So Taransky experiences an elevation of his social fitness because of his alliance with Simone; desirability for him as a social partner increases because he becomes a proxy in the relationship with Simone.

“Mutual exchange is ubiquitous in human interactions” (Nesse 2010:139) and kin relationships are especially long lasting for the formation of alliances — it is Taransky’s daughter who through her clear deductive thinking rescues her father and restores her family (Figures 4.20b and 4.20c).



Right: Figure 4.20a

Social fitness asserted by “gift bearing”.

Left: Figure 4.20b

Lainey rescues her father by restoring Simone to existence.



Figure 4.20c Taransky's family restoration.

#### 4.5.3 Forming alliances

Formation of alliances is crucial in the evolution of culture and according to Nesse (2010:143) it could be the “tipping point” which made the “advances to sociality possible” when the number and “quality of relationships” and bonds began to “strongly influence fitness”. The fitness of humans for forming alliances and creating ‘power hubs’, like choosing a mate or nowadays assembling a list of Facebook friends is based more on social qualifiers than genetic traits. Taransky is shown by Niccol to make an initially advantageous alliance with a famous actress whose betrayal at the very moment of concluding the film she has worked on with Taransky results in the spread of social rejection of Taransky and his resulting ostracism from the film making world. Her defection is caused by her suspicion that Taransky is a social nobody in the film industry. The exclusion of Taransky spreads to his ex-wife too, who after the analysis of the “figures” of profits — which plummeted as the result of the leading actress' anti-Taransky campaign — withdraws her support of him and his film making. Should he not have had the opportunity to create his synthetic alliance — one can speculate —it is probable that his social fitness would totally have collapsed and his films been relegated to oblivion.

The synthetic alliance (Figures 4.21a, 4.21b, 4.21c, 4.21d and 4.21e) he constructs with the digital actress is what forms the main narrative of the film and propels the events of the story. As Djikic et al. (2009:28) observe, although the results of human interactions with cultural objects are not easily evaluated or assessed and these encounters cannot really be measured in terms of changes, they affect the “human psyche” and they are a worthy pursuit to explore.

Boyd (2009) stresses that interactions with cultural objects and texts extend and develop pattern recognition skills but the outcomes of such interactions can be varied and while they can serve to enlarge the grasp of the world, they can also produce psychological identification and entanglements with the cultural objects. Niccol pursues the possibility of such varied outcome in his film by showing the main character on the one hand experiencing brain plasticity and expanding his abilities for empathy while, on the other hand simultaneously constructs the more fatalistic possible outcomes of a human-artifice alliance.

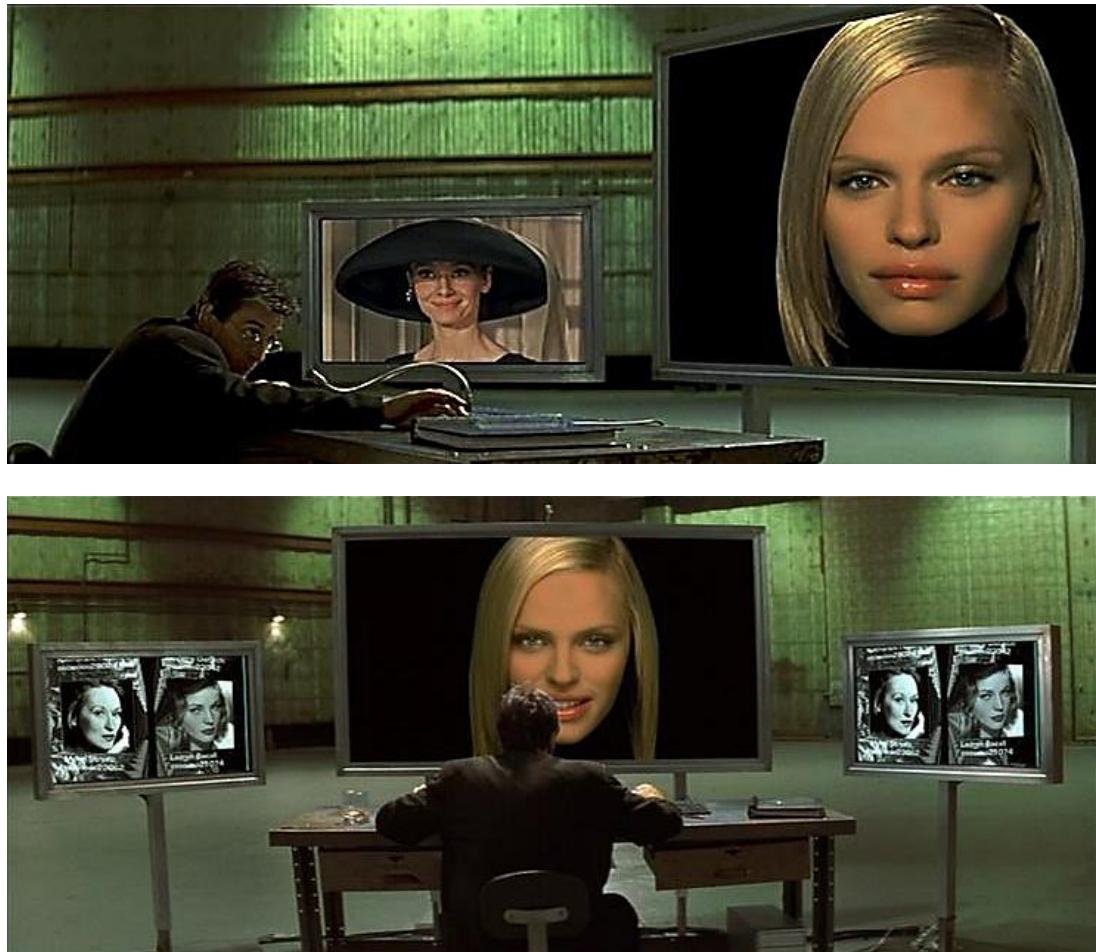
Niccol offers his speculation about how the psychology of the human – exemplified by Taransky — who does not reflect on his interactions with the simulation he has created becomes affected by it. The initial stage of Taransky’s alliance with a simulation elevates him in his family circles, the film industry and the public eye. His “fitness” level increases; he gets a free carwash; his ex-wife wants him back; his daughter is proud of him; film awards are bestowed on him; he “earns” attention and his status escalates. But as the synthespian gets progressively greater social recognition from this alliance than Taransky does and, as the balance of this alliance is tipped in her favour, the initial purpose of the relationship to assist Taransky in his status seeking becomes nullified. Nesse (2010:137) observes that “aspects of culture now select for prosociality and capacities for complex social cognition”.



Figure 4.21a Selection of the facial features and visual appearance of the synthesian — the newly established alliance's facial features must appeal to both Taransky's and the social visual preferences.



Figures 4.21b and 4.21c Taransky searches through the visual bank of facial features of the renowned film stars who had already “proved” their social fitness and desirability for forming alliances with these features.



Figures 4.21d-4.21e “Putting it together” — Taransky makes a comparative analysis of selected facial features that results in a composite portrait of an ultimate star.

The ties or alliances with simulations of different kinds abound through the history of storytelling. Be it the emotional bond of Pygmalion with his Galatea, Dr Faust’s lust for his Gretchen — like the eternal feminine Helen, Master Geppetto’s care for his carved wooden son Pinocchio, the collaborations between Swanhilde and Coppélia, Hadaly constructed by Edison for Ewald in *The future Eve*, or the frightful transactions resulting in the attachments of Dorian Gray to his portrait by Basil Hallward in Oscar Wilde’s novel — that is paramount. These human-simulacrum bonds were mostly founded on emotional responses to human form of the other, but some of the ties also expose the status seeking strategies like Victor Frankenstein’s ambition to create life or Dr Coppelius’s

drive to imbue his automata with human life.

The strategy for survival and status seeking by Taransky is an underlying motive for the formation of his alliance with Simone. This strategy for survival through alliances with a *creatuum* in the contemporary world portrayed in the film is shown to be long lasting and resembling the older Pygmalion mould. Unlike the coarse abandonment of the creature by Victor Frankenstein, in *SimOne*, a more responsible solution to the relationship between a creator and the created has been sought and achieved through the bond of marriage.

Since Baudrillard's insights about simulation (which were grounded in the technological production of the world) many more recent perceptions have been offered on the nature of simulation and imitation. These come, among others, from the fields of developmental psychology and cognitive sciences (Meltzoff 1995; Decety 2002; Ramachandran 2011). Decety observes that although developmental psychologists have long been concerned with imitation, the field has burgeoned with the findings that newborns imitate facial gestures, suggesting an innate system for coupling perception and production of human action (Decety 2002, Meltzoff & Moore 1977).

In numerous experiments that aim at finding out how these imitative actions work, says Decety (2002:9) there is the “convergence from both brain and behavioural sciences that the same representations are used for both reading the actions of the other as well as *producing* them [my italics]”. In other words there is a consensus among the scientists ranging from neuroscience and cognitive science disciplines about the shared origin centre for our actions and deciphering the actions of others.

In the film the exchange of the actions and the imitative reactions between the film director Taransky and his synthesspian becomes increasingly fused.

Eventually it reaches the point when Taransky's actions are the result of the reactions of the public to the synthespian's presence on the silver screen. This problem of who controls whom is not only addressed in the narrative itself but Niccol also uses a series of visual devices in which he plays with the reversed sequences of simulated actions: for instance he first shows the simulated reaction that is followed by the initial action. The previous action is shown after the followed simulation (Figures 4.22a and 4.22b). In this way Niccol satirically emphasises the confusion of who is simulating whom and launches this paradox on the viewers of the film *SI'mOne*, the simulation.



Figures 4.22a and 4.22b The mirror actions by the synthespian are shown in the film to anticipate the inductive actions by Taransky as his cognitive entanglement with Simone progresses.

#### **4.5.4 Narratives as constructs of identity**

The alliance with the synthespian demands that Taransky invents not only a visual ‘vessel’ for her but provides her with identity. Narrative was traditionally thought of as an empirical, descriptive vessel for factual or fictional knowledge, storytelling and other forms of cultural containers of knowledge. However a different understanding of the role narratives play in the evolution of individuals and culture has emerged. One of the main contemporary neuroscientific claims about the purpose of narratives is that they serve as constructs of the Self and that their nature is contained in the exchange of fiction produced and fiction received (Saks 1985, Dennett 1988). In this view, the explanation of the Self provided by Bruner (1994:11) who claims that “self is a perpetually rewritten story … in the end, we become the autobiographical narratives by which we ‘tell about’ our lives”, throws further light onto the identity crisis Taransky experiences in Niccol’s film.

The two identity narratives portrayed in the film, the one of Taransky and the other that was invented by Taransky for his synthespian, become gradually enmeshed, fused, and entangled with each other. This representation of enmeshed narratives is not unrealistic and is often observed when a person devises different accounts of the same story for different situations or different people, sooner or later resulting in confusion as to what was invented for whom.

When Niccol portrays Taransky fusing his own and Simone’s narratives, he points to the potential cognitive confusion of narratives. This confusion becomes comprehensible when the biological basis for social interaction is taken into account. Frith (2001:153) observes that in the functional subdivisions of the anterior cingulate cortex, areas specialising in monitoring one’s own mental states and areas for attributing mental states to others (also called mind-reading) are closely packed and overlapping. The areas that perform mind-reading actions, in the case of Taransky, are overwritten by the areas through which Taransky is able to observe himself (Figure 22c).

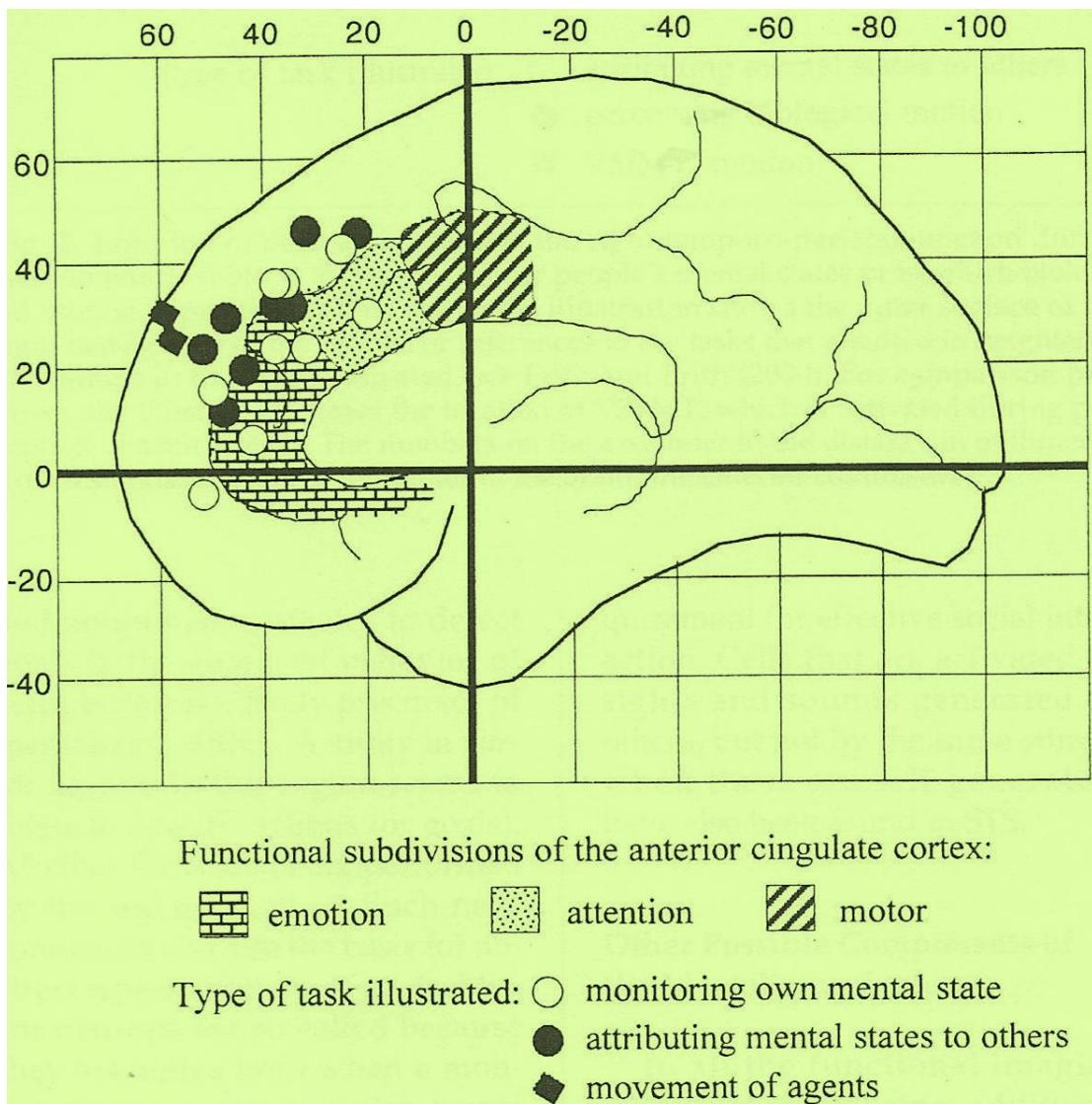


Figure 22c

The graph illustrates the close ‘geographical’ proximity within the brain of regions responsible for “monitoring own mental states” and for “attributing mental states to others” activities. “Location of peak activations in medial frontal regions during task in which subjects think about their own or other people’s mental states or have to interpret actions of freely moving agents” (source: Frith & Frith 2001:153).

Niccol reinforces the issue of metacognitive confusion in the individual Taransky by portraying the mass “malfunction” of a metacognitive system, the public in *SImOne*. The public, disengaged from critical thinking about celebrities and blindly determined to worship them, loses the ability to interpret the external

world, which requires more than just discernment between true and false beliefs (Chandler & Lalonde 1996). Niccol's portrayal of the metacognitive fiasco that happens in these two domains, the private life of Taransky and the larger life of Taransky's audience, is a reversal of Sperber's distribution of representations (Kronenfeld, Bennardo, de Munck & Fisher 2011:420).

Sperber identifies group and public representations as longer-lasting, more widely spread and more cultural than those of an individual whose internal representations are based on feeling and private experiences. However, in fictional situations such as film or literature, it is these individual experiences and representations that strike the most personal chord with the viewers and readers, so enabling the longer-lasting and wider propagation of cognition.

#### **4.5.5 Simulated reality, brain plasticity and identity**

Simulation from the neuroscientific point of view can be used to affect brain maps of body schemata and assist in learning a variety of motor skills. Blakeslee 2007:120-127), however, reports that it is not only human perception or skill acquisition but also human behaviour that can be affected in virtual reality situations and that while such simulated situations can be used as an aid to motor recovery in people who have suffered physical trauma, it can also change behavioural patterns in human-avatar situations. Her (2007:125) example is the research conducted by Bailenson who "explores the intersections between virtual reality, body schema, homuncular flexibility, and social psychology". Blakeslee (2007:117) explains:

Thus neuroplasticity might play a larger role than is generally appreciated in creating the 'species-typical' organization of at least some brain maps. Evolution may craft anatomical improvements in body parts, and then the brain gerrymanders its body maps to capitalize on those improvements. Many unique features of the human mind and brain may be due to hidden, emergent processes like this one.

Baileson's research (in Blakeslee 2007:120) reveals that people change their behaviour accordingly to the type of avatar through which they act out their agendas. For example, a usually timid person can start behaving more assertively in virtual situations where his avatar is taller and 'better' built than the other avatars he interacts with. In *SimOne* when Taransky acts through his synthespian, Niccol shows him to experience a psychological 'meltdown' and an intense entanglement with Simone. There is, however, another aspect of the changes Taransky undergoes — while he acts through and on behalf of his female synthespian — his avatar of sorts — he gains a deeper appreciation of the feminine. This leads him to seek to restore his relationship with his ex-wife and to work on the bond he has with his daughter. It is through these experiences and changes that the phenomenon of plasticity of human behaviour can be recognised and Damasio's definition of the self as the self-process depicted.

#### **4.6 PROBLEMS AND SOLUTIONS**

Simulation can play a role in both creating problems and solving them. In the film *SimOne* both these possibilities are well exploited. Problem solving is one of the most potent strategies in the natural world for advancement of a species who are viewed within cognitive sciences as integrated systems of specific solutions in which behaviours, developmental patterns and organs are the major role players (Camazine, Deneubourg, Franks, Sneyd, Theraulaz, & Bonabeau 2001). Boyd (2009:324) observes that culture follows biological patterns of problem solving and that it does so by "making available to the whole group behavioural solutions more responsive to novel circumstances than genetic evolution can offer".

The narrative of the film exposes a series of behavioural solutions and decision-making which are varied as to their anticipated effectiveness. One can speculate that Taransky's choice of using a synthetic actress in place of a live one might

have had far different and more desired outcomes in terms of survival strategy had he disclosed to the public the digital origin of his synthespian as technological to supplement our biological resources. Instead the audience witnesses a series of self-absorbed, self-focused decisions made by Taransky.

The solution addressing the motley of enmeshments offered by Taransky's daughter at the conclusion of the film is of a cooperative kind, valued in many biological situations — symbiosis, collective behaviours or the self-organisation of insects. According to Camazine et al. (2001:370), such self-organisation in biology is “a property of certain dynamical mechanisms whereby structures, patterns and decisions appear at the global (colony) level of a system, based on interactions among its lower-level components (agents, individuals)” and that those processes are carried out on the basis of purely local information, without reference to the global level.

If that observation about biological structures of problem solving can be used to elucidate Taransky's daughter's behaviour in her dilemma, then it can be said that her solution simultaneously operates at both local and global levels. Locality of the solution involves the reconciliation of Taransky's family and includes not only their immediate wellbeing but the forecast of the desired future. The global level of problem solving is illustrated in the film through the Internet research Taransky's daughter does to find out how mythology handled similar problems and the specific resolution of the Pygmalion myth.

The value of collective, cooperative solutions — which often lead to the formation of valuable social alliances — as a fundamental element of human sociality and the evolution of culture has been not only well explored in many social and cognitive studies but has often been used in films and narratives for addressing a problem at hand. Neo, for instance, the hero in the Wachowski brothers' film *The Matrix* (1999), comprehends the nature of the simulated world he occupies when

he joins a group of freedom fighters. Together through close cooperation this eventually leads toward a triumph over the preying, life extracting virtual reality. The replicants in Ridley Scott's *Blade Runner* (1982) take advantage of cooperation and experience sociality when they team up for survival against the powers that destroy them. The hero of *Harry Potter* books, or Luke Skywalker of the *Star Wars* series, are both well supported by a reliable network of friends who collectively help each other to solve mounting, escalating challenges and fight the evil forces together.

Cooperation toward a common goal occurs on all levels of biological life and in all spheres of culture. Bassler (2008), for instance, who specialises in studying chemical communication and cooperation between bacteria, believes that the primordial cooperation observed in bioluminescent bacteria set the scene for the emergence of cells and cell specialisation leading to complex organisms. Bassler also argues that human democratic concepts of legislature and quorum are the analogous mechanisms employed by bacteria for decision making that propagate their collective survival. Cultural cooperation of humans, claims the evolutionary palaeontologist Roberts (2009, 2011), has played a major role in human longevity that is well past its reproductive capacities and that grandparenthood is nature's and culture's result of cooperation between generations toward ensuring child rearing.

#### **4.6.1 Cooperative and competitive problem solving**

The narrative of the film, however, addresses the collective, cooperative way of problem solving only at its conclusion and before reaching its conclusions it can be conceptualised as a concatenation of interlocking crises (problems) in which one crisis leads through its attempted solution to the next one. This is in agreement with observations made in the field of biological systems and amplified by Boyd (2009:324) who says that, “[a]ny solution can create new problems” and in the film the viewers can observe exactly this biologically founded truth.

The initiating crisis in the plot happens when the actress employed to play the main role in Taransky's new film, *Eternity for Ever*, breaks the contract with him. Unable to contract anyone else to finish the film, Taransky's project is in danger of total collapse. The fortunate solution to this problem is provided by a former acquaintance of Taransky, the computer software developer who created a computer programme enabling simulation in real life which the film director uses to concoct a synthetic actress for his film.

The very next crisis arises directly from this solution as Taransky, despite the favoured reception by the audience of his new work, decides to omit the fact that his leading actress is in fact a digital fusion of facial features of real famous actresses and that the “acting” is in fact done through motion capture where a computer programme reads actions of the programme operator and re-enacts, copies them into a digital “persona” (in this case an actress for Taransky’s film).

Niccol gathers and creates more and more problems in his narrative by allowing his main fictional character to continue concocting an escalating series of deceptions. Each solution does not only create new problems but also instigates the evolution of the synthespian and affects Taransky. The initially two-dimensional synthespian is later reworked by Taransky into a three-dimensional hologram that occupies and shares real time and space with the deceived public. He does this out of desperation to avoid unmasking and to continue his agenda to prevent the detection of his fabulations.

Niccol reveals that the choice of nondisclosure by the director Taransky about the real nature of his actress leads to aborting the flow and sharing of knowledge. When cultural objects are solely made for the purpose of status seeking by their creators, they are not fulfilling their function as vehicles for transmission and sharing cognition. However, they still might transmit and spread the knowledge about status seeking patterns and as Harris (2006:239) explains “the status system

searches for self-knowledge in the social cues provided by others. It then uses this information to plot a long-term strategy that will involve direct competition only in those areas of endeavour in which the individual has a hope of succeeding and, if possible, avoid competition in other arenas”.

Ironically, in the film, it is not self-knowledge that is sought by Taransky, but finding the means to survive and succeed in the capricious Hollywood environment of film making and to elevate himself above the others is the focus of all his creative and improvisational actions. After the making of the synthespian Simone and testing the motion capture capacities of the computer programme, Taransky experiences a powerful moment of amazement — he starts to speculate about the nature of reality and the manufactured reality but by keeping these ponderings to himself, he fails to explore the relationship between the real and virtual in the way that broadens human knowledge. He is immersed in his own confabulations and becomes gradually devoted to maintaining and safeguarding the illusion that Simone is human. By portraying Taransky’s unwillingness to disseminate knowledge, Niccol presents his audience with an opportunity to engage with questions about some aspects of the nature of cognition, such as propagation, transmission, sharing and spreading information or secrecy and exclusivity.

*The Truman Show* also addresses virtual reality and the cognitive consequences that follow a lack of awareness of simulated events. The awareness situation in *The Truman Show* is reversed. While in *SimOne* nobody but Taransky himself is aware of the truth behind his digital actress, Truman, the hero of *The Truman Show* is the only one who is unaware of his total immersion in simulated life. There are cognitive consequences of awareness and non-awareness of being in simulated situations.

In both these films, fabrications of simulation are portrayed to serve the societal

need to be entertained. In both instances, the secretive mechanisms of simulation are shown to be disadvantageous to the propagation of cognition. In the case of *SimOne*, the spread of cognition about the means of fabricating reality is aborted the moment Taransky decides to keep his knowledge about such confabulations to himself. In the case of the film *The Truman Show*, the propagation of cognition among the viewers of the television programme happens only when his hero, Truman, does his own cognitive work toward modifying his own understanding according to his new insights about his situation.

In *SimOne*, on the first level, the public starts an active, intense and indiscriminate, almost absolute worship of the synthetic actress by putting her on an absurdly high pedestal. On the second level, Taransky's personal relationship with his family, his ex-wife and his daughter, is driven into an escalating series of lies and cover-ups for the non-existence of Simone. The even more grave results of these lies and cover-ups are situated in Taransky's own psyche, manifested on the third level, when he becomes increasingly unable to distinguish the boundaries between himself and his now alter ego; in other words he loses the ability to observe his own thinking and his meta-cognitive skills deteriorate.

On the meta-level of the film, it is Niccol, the director, who attempts to address his problem with excessive celebrity worship in America by making a film which points to this very issue. He uses the medium of film to spread his particular insight about the society's naivety and blind idolatry of actors and actresses. After all, Niccol tells his viewers, actors and actresses are but vehicles of simulations, skilled simulators, and performers of other people's ideas. Creating narratives, films and art objects is one of the biocultural strategies of problem solving and drawing attention as to how real problems can be dealt with through the fictional world.

#### **4.6.2 Problem solving through confabulation**

Sperber (2000:3) says that “cognitive systems are characterized by their ability to construct and process mental representations” and that the human ability to construct “mental representations of mental representations”, in other words metarepresentations provide a base for forming “second-order intentional systems”, with aptitude for having “beliefs and desires about beliefs and desires”. Sperber explains that in terms of Dennett’s study on intentional systems the “[s]econd-order intentional systems are, for instance, capable of deliberate deception. In a population of second-order intentional systems, a third-order intentional system would be at a real advantage, if only because it would be able to see through deception. Similarly, in a population of third-order intentional systems, a fourth-order intentional system would have a greater advantage still, having greater abilities to deceive others and avoid being deceived itself, and so on” (Sperber 2000:3).

In the film *SimOne*, Niccol portrays the rapid development of higher-order intentional systems in his hero Taransky. Each time Taransky has to appease the increasing curiosity of the public about his synthespian, he devises more and more creative ways to meet those growing demands by being a step ahead. His methods consist of, among others, a clever hiring of the body double for the digital actress as well as the invention of a very eccentric character for her to explain away her utter seclusion.

The deception culminates with Taransky’s deployment of holographic technology for the “live” on stage performance by Simone. The initial technology Taransky had been handed down by the inventive computer programmer has been supplemented by a variety of other deceptive resources aimed to keep Taransky in control. The third and fourth-orders of intentional systems take on a rapid development in the film towards Taransky’s goal of deception, while his mirror neuron system appears to live through an increasingly confused relationship with his creation.

## 4.7 CONCLUSIONS

Makers of cultural objects depend on exploitation and manipulation of the biological characteristics which secure the attention of the viewers of the objects. Pattern recognition is relied on by cultural object creators both to secure attention in viewers and to satisfy their desire for patterns. The makers of the cultural objects face a range of problems — mimetic, perceptual, cultural, political, epistemic problems of identity and problems of representation. Through the solutions offered in the making of the cultural objects the evolution of culture is further enabled.

The photographic style of Niccol's *SimOne* is crisp and he uses uncluttered, minimalistic frames. This quality of Niccol's approach to filmmaking sometimes even a sterile style of frame composition is visible in his other films like *Gattaca* (1997), or *In time* (2011). The different "tints" Niccol uses in *Simone*, like the overall green in the scenes where Victor Taransky and Hank Aleno hold conversation or the blue tinting of the VIP function, allude to the film practice of blue and green screen techniques for creating seamless illusions. The method applied in this study is that of linking the characteristics of the individual cultural object to the biological base that enables the creator of the object to exploit the possibilities of both the object and the biology of the viewer to achieve the spread of cognition.

Second order intentionality, the ability of human beings to "recognise that another individual has a belief that they know to be false" (Dunbar, 2000:239) is at the core of *Simone*. Niccol exploits this ability of humans. He develops a narrative about multiple deceptions at multiple levels. The satire which Niccol uses to underline the fact that viewers of films can be happy to be duped into false beliefs, is a cognitive deictic tool which facilitates insights.

*Simone* is a film about a synthespian when, Kurzweil ironically observes, no

synthespian technology was used to make the film. That irony can be extended to a number of films about robots, replicants and artificial intelligence in which people, living actors simulate the man-made creatures.

Niccol, throughout the film, consistently subverts many signs of cognitive activities like pointing, simulating, categorising and sorting out. This is done in the context of Hollywood film production where these activities “lose” their value as cognitive gestures.

Culture is defined by many terms depending on the intentions of those who define it. It is sometimes used as a weapon in the defence of cultural identities that define the Self within these cultural structures. From the biocultural point of view, however, the Self is a process and so is culture.

## **CHAPTER 5: CONCLUSIONS**

This chapter concludes this study. The study was an investigation of Niccol's satirical film *SImOne* from a biocultural critical point of view. The structure of this chapter is such that it is a reflection on the entire study. It offers general conclusions about the significance and value of a biocultural approach for a critique of cultural objects. More conclusions, specific to the way a biocultural approach has helped to amplify the critique of a film (although that object of the critique, the film *SImOne* could have been any satirical film) are offered. Some conclusions about satire as a tool for spreading of cognition are offered, in the context of the significance of humour for human understanding of moral values. Simulation as one of the themes in the study is discussed to draw general biocultural conclusions.

How cognition is propagated through cultural objects was part of the investigation of this study. A wide reading programme in unfamiliar scientific literature after Boyd's *On the origin of stories* (2009) as an introduction to the possibilities opened up by the biocultural approach was the first step towards this study. Grau's (2003) *Virtual art — from illusion to immersion* was a beacon as was Stafford's (2007) *Echo objects — the cognitive work of images*.

The film discussed in this study is a narrative and narrative has been the subject of research in terms of a biocultural approach (Boyd 2009). One of the reasons for taking up the biocultural standpoint in this study is that, although much has been said about the “cognitive turn” in film studies, there has been no serious look at the film *Slumdog Millionaire*. As a satire in the oeuvre of the New Zealand/American Nicoll it deserves attention for its elegant use of the Hollywood “arc” of narrative and because film satire in America is dominated by political satire rather than social satire.

In the context of American culture, satire of every kind deserves attention, whether it is Colbert’s political and critical pedagogy, Moore’s endless deflation of the chicanery practised by government in relation to war, the cult of the individual at the expense of sociality in South Park or Nicoll’s ironic deflation of entertainment’s foolish celebrities, all of it calls into question the globalising and dominating values of the country which are expanding to every place on the earth’s surface. A biocultural approach is a valuable way to investigate the close connection between culture and biology — a topic which is currently being scrutinised in disciplines other than film studies. The use of the biocultural approach to narratives is a way of accommodating what amounts to revolutionary scientific findings and technology over the last four decades.

Narratives have always been used to disseminate knowledge to the society in which they arise and are spread. Some scholars, like Oatley (2002), claim that there is a particular value in fictional stories, to encourage empathy, which is sometimes referred to as the emotional knowledge or information about inner workings of emotions in ourselves and others. He understands that the power of fictional stories, as opposed to non-fiction, lies exactly in the empathic responses humans produce while listening to, watching or reading stories about others’ experiences and the human trait of being available for strong identification with the characters of such fictions. Oatley (2002:39) explains in a nutshell his ideas

about empathy:

I think the reason fiction but not non-fiction has the effect of improving empathy is because fiction is primarily about selves interacting with other selves [...]. We can think about it in terms of psychology of expertise. If I read fiction, this kind of social thinking is what I get better at. If I read genetics or astronomy, I [become] more expert at genetics or astronomy.

In this view of the value of fiction, a simulation becomes the desired re-enactment of emotional states and processes which are transferable through media such as stories, films and other cultural objects from human to human or human groups to human groups. It is this quality of emotional knowledge transfer, according to Hirsten (2005) and Nicholson (2013) that can be both enabling and incapacitating for humans. Nicholson (2013 loc 673) observes that it is disturbing to reflect on and acknowledge the power of the human propensity (the fundamental need for stories that can be believed in and adopted as the map for human interaction) to make ourselves vulnerable and open to stories. Of course in this way we allow abuse by “cohorts of myth-makers and truth-pedlars who have consciously enlisted storytelling as a tool of influence” (Nicholson 2013:loc 673).

But narratives and stories, like metaphors have their roots in our very biology, our embodied minds (Lakoff & Johnson 1999; Boyd & Richerson 2005). Narrative is one of the key ways in which humans construe their worlds and experiences so as to make sense in what might otherwise be a daunting and terrifying environment as many studies of brain damaged individuals have shown (Ramachandran 1998; Stroud 2008).

Most narratives rely on language. When exactly language arose is still a hotly debated topic but as mysterious would be the question about when narratives were first told. Certainly at least 10,000 years ago narratives were being written down in Sumeria, China, and Egypt (Mithen 2003). But with the revolutionary

advent of technologies to see into and outside the brain simultaneously (such as Positron Emission Tomography, PET scans, and the development of the fMRI) it has become possible for scientists to deduce many answers to previously impenetrable problems of narratives relating to cognition and emotion.

Although narrative as a form of cultural object is the direct outcome of our human cognitive structures, the content of such objects is intuitively felt as open for interpretative actions. But, interpretation, pattern recognition, information processing, securing attention and problem solving, all the traits needed for interpretation, are part of human cognitive processes also.

For a narrative to transmit knowledge there are two necessary grounds for cognition — first there must be a transmission from one mind to another consciously alert mind and secondly, there has to be a persistence in time during which something is modelled and something is mimicked or learned (Givón 2005). Many variations are enabled in this way and this strengthens the ongoing evolution of culture. Renaissance painters such as da Vinci trained their apprentices in this old way based on an intuition of how learning came about (Vasari 2008).

Boyd and Richerson's research over three decades (2005) provides a framework of constituents for the evolution of culture, and includes the model of "Darwinian evolutionary processes" based on "cultural variants" — these are results of and causes for changes of ideas and values. Innovative narrative artists are part of the cultural variant species which all cultures need in order to remain vigorous. The examination of the film in terms of points that Boyd and Richerson provide in their analysis of how culture evolves, was a valuable test for my approach to the biocultural critique and has confirmed its usefulness for me.

With information as illuminating as that which is now available to humanities scholars, not only to scientists, it would be a pity not to pursue Boyd's (2009)

path into a biocultural investigation of cultural objects.

The old debates between the humanities and sciences can be revisited and many new ideas and insights become available to the intellectual world from the fruitful mix of the two approaches. Topics from neuroscience and anthropology such as the ToM amplify our understanding of literature (Zunshine 2006), or, as Stafford's (2007) work in fine arts shows — neuroscientific findings applied to those works can explain them in novel ways. We are drawn back to the realisation that the author or creator of a cultural object is an autonomous, innovative, adaptive and perceptive being, who does not deserve to be dismissed as in many Postmodernist critiques because that leads to sterile conclusions. The recent development of technologies that enable viewing of activities that range from the workings of the human brain to satellite movements has an effect not only on the expansion of knowledge but naturally contributes to the increase of the spectrum of visual productions like holograms or 3D movies, virtual environments and other simulation technologies. In addition the way of writing about the sciences has evolved to become more accessible to everyone. The mode of writing also reflects the change of attitudes to knowledge and information: previously inaccessible findings have been moved to a platform of sharing, spreading and popularising rather than protecting. The work that neuroscientists like Damasio (2003, 2006, 2010), Ramachandran (1998, 2011), Tomasello (1999, 2003, 2010) or Kandel (2008, 2012) do to contribute their knowledge to other disciplines is an effort towards “bridging the two cultures” — the sciences and humanities. These new attitudes to knowledge open more “gates” to spread ideas throughout “different” knowledge platforms and enable what is often called in humanities “the cognitive turn”. This free flow of information is the evidence of the evolution of culture at work — through the intense exchanges of knowledge within different disciplines by means of the accessible way of writing about those ideas. Through understanding and popularising how culture changes and evolves, people everywhere are enabled to

notice and ask more vigorously about stifling or harmful ideas in politics, religion, and all areas of culture. Not questioning ideas and cultural practices feeds into human credulity and cumulatively can lead to great oppression and lack of freedom. I do not suggest that the biocultural critique prevents this happening, but the analysis of *SImOne* through that lens has enabled me to reflect on ongoing flow and transmission of ideas and their value/or not to humans.

An important question about potentially maladaptive behaviours is why they continue to thrive regardless of costs. In the biological domain maladaptation and maladaptive behaviour is dealt with swiftly as it does not carry gains and costs too much in energy or survival terms to be continued. In cultural terms, the immediate suspects for spreading potentially maladaptive behaviour are the formations of kinships and the adherence to the customs, traditions, beliefs and ideas of dominating figures. Imitation of their ways of being in the world and not questioning those ways transmits both, the adaptive and crucial for survival behaviour, as well as potentially maladaptive behaviour (Mithen 2003).

It is the degree of credulity that enables the transmission of culture in the first place and imitative behaviour spreads behavioural patterns which, when adopted immediately, ensure the survival of particular cultures and their participants; and they sustain them. That the very enabler of cultural transmission is at the very same time the main culprit of the survival of maladaptive behaviour is ironic. In cultural terms, however, the costs of maladaptive behaviour, unlike in biology, are outweighed by costs of acquiring information for survival individually. The transmission of culture encompasses the whole range of well suited and less suited behaviours including those accumulated over time as a variety of tools for testing and analysing the transmitted information and the methods for the exposure of potentially maladaptive, stifling, behaviours.

Niccol as a film maker uses his craft as a vehicle to spread his ideas about society. In the script for *The Truman Show* he discloses the central deception about how we are imprisoned in our thinking with the allegory of a man who is entirely imprisoned in virtual reality. In *Gattaca*, a film about a future society that is governed by the genetic engineering, Niccol drives home the fact that technology can limit development, freedom, humanness amongst humans and points to an incorrect governing relationship between signified and signifier. In *The Lord of War*, Niccol points at the maladaptive practice of the undercover condoning of illegal arms trading by leading world governments. In his latest film *In time* (2011) he ridicules a social system based on unequal access to resources. All these films comment on maladaptive human behaviours. In *SimOne* the excessive status given to individuals is targeted. Mocking of the potentially maladaptive behaviour is the signature of this auteur.

Through Niccol's satire about movie production and technology in *SimOne* he suggests the possibility of cognitive and emotional entanglements with simulations. The issue of mental entanglement, however, might have less to do with technology and more with the lack of equilibrium between the creative and the inhibiting forces (Hirstein 2005) that play a role in the human ability to confabulate and relate through stories. Taransky, preoccupied with 'damage control' of situations which might expose the true nature of his synthetic actress, does not spend any time on reflecting and interpreting his own actions. Given the human propensity, foible, for confabulations it is not unexpected in the film, that when its main character, after designing labyrinthine duplicities, loses himself within them, he tries to repair his mounting problems by further exercising his skill at creating more and more deceptions. One lie leads to the next...

What Niccol points to satirically by showing the excesses to which Taransky goes only to find himself overwhelmed by his creation is a general, unstated but

lively fear which the public has of virtual realities taking over the real world as we know and experience it (*Surrogates*, *Gamer*, or *Blade Runner*). *The Truman Show* was Niccol's opposite stab at the same problem — the confusion which results from making what is unreal hyperreal). Whereas Irishmen feared the beggars in Swift's streets as they were so numerous as to overwhelm genteel folk, nowadays some people worry about our children's engagement with technology in case they cannot distinguish the real from the unreal. What is clear though is that Niccol uses narrative and simulation to good effect in the film. He pokes fun at himself in making Taransky a fool and someone who discredits his own profession as a filmmaker and director (Duval 2007).

Hollywood is revealed in *SimOne* to be the venal, mega business industry it is. One might argue that the culture of successful filmmaking has been driven by that intuitive grasp of cognitive processes and the 'tricks' of filmmaking are passed on and their spread results in the expansion of the techniques. This is the example of the transmission of culture Tomasello (2010) talks about.

Transmission of the culture of filmmaking happens at many levels: transmission of culture to the film industry, to the spectator, transmissions of skills to all the directors who are watching and analysing the films by others film makers. And this is what a cultural tool does — it propagates itself. Transfer of the intuitive repository of understanding of how film makers can exploit the biological base for storytelling proceeds apace.

Satire is Niccol's way of reminding his peers he understands how venal the film industry is. Satire is one of the examples of methods used to expose maladaptive behaviours and it is a valuable vehicle to rapidly and widely spread ridicule of disturbed and disturbing actions and beliefs — maladaptive ones. It is the human form, face and its expressions that humans respond so strongly to that ensures imitation, the success in the evolution of culture and its different forms

that proliferate in visual forms of communication. The satire Niccol aims at his viewers, when examined from a biocultural perspective, becomes less amusing as the realisation dawns on a reflective viewer that idolatrous attitudes to celebrities have roots in the human wiring for pattern recognition, the use of which is exercised almost immediately after birth by babies in relation to human faces. Metacognition, when functioning in line with satirical communication, is deemed to activate learning, provided that spectators reflect on what the satire targets. Questions about our humanity and its nature have always been central in the reflections about the world and ourselves. The ‘cognitive turn’ and the biological insights into human culture, like Darwinian ideas, result in a way of reflecting on humanness differently. The old debates about the divisions between nature and nurture can be directed toward fresher grounds where the connectedness and dependency of culture on biology are unfolded.

Our human emotional range, such as sadness, anger, happiness and joy as well as all the nuanced emotional states, is exploited by satirists — some cultural objects are not only for reflection on human cognition but have entertainment value, a unique feature of the species. Boyd (2009) and Nicholson (2013) observe that there is a need for a deeper examination on the part of cognitive sciences of the distinctively human phenomenon of the sense of humour. Although Darwin believed that laughter is universal and humans share it with the apes, yet cognitive processes involved in sharing a joke as a metaphorical shortcut that takes us right into the core of the matter, are still fairly mysterious. Kandel (2008:387) supports the idea that it is the exaggeration which underpins caricatures and satire that conveys emotions and influences “the brain’s perceptual and empathic processes”.

Both Damasio (2010) and Johnson (2008) attempt to explain the role of emotions in human cognition. The way that genes and culture have evolved over millions of years to appear in the forms they have at present, among humans, seems to go

back to the deepest biological/cytological needs of all organisms on earth for survival — the need for homeostasis (Damasio 2010). Laughter and humour perhaps help restore that homeostasis emotionally. (Sadly the bulk of funding for cognitive research is allocated to exploring cognitive systems like pattern recognition which can be used for enlarging our technologies, and not laughter.)

Culture transmission becomes more potent and widespread than ever because of many factors. Popularisation of scientific knowledge that is made accessible to the public not only about the neuroscientific and cognitive basis for culture but also about the way the culture is processed and changed by the principles of evolution. The accumulation and development of technical resources for making simulations and narratives that transmit the range of scientific and emotional knowledge depend themselves on the biological ability humans have for passing on and transmitting information.

Art-making is an active actor which participates in the evolution of culture and is especially “profitable” for accessing and the spreading of both technological and the emotional knowledge. The emotional knowledge for the spread of behavioural options, if seen from the point of view offered by Damasio (2010) or Kandel (2008), proves to be of evolutionary value for culture — as it is the emotional biological base that enables behavioural patterns that seek the release from pain and fear and the search for joy, trust and wellbeing.

There is no single unifying biocultural framework which can be used to critique a cultural object. The establishing of new methodologies in view of new information is one of the very characteristics of the processes that underlie the evolution of culture. The desirability of “cultural selections” which allows good adaptations to survive and cognitive work to be done is part of new ways of interpreting the world. Controlling ideas and methodologies by academics, politicians, or religious leaders stifle cultural evolution. It is surely more

valuable to spread new ideas into the larger social and cultural landscapes so that more people have the freedom to interpret their environment and experiences. Some general conclusions about biocultural analysis are that it can prompt the maker of such an analysis to broaden her or his scope of knowledge originating from the humanities and enter the rich field of the sciences. As the biocultural approach is not rigid or prescriptive it affords freedom of choice in designing one's own layout for such analysis.

Further, it points at the larger picture of human sociality within the analysis of culture and supplements the contextualization of the postmodern cultural criticism. A biocultural approach enables us to encompass views of nature — where biological “inventions”, like an eye or pain receptors, are spread across species and that deepens our compassionate interaction with the environment. The approach allows for dynamic engagement of the humanities with the world of science in which new discoveries about human cognition may be communicated speedily because of the nature of close cooperative strategies in the sciences. Of course, a biocultural approach is open to certain dangers of a superficial imposition of biological terms and jargon and so to useless conclusions in cultural analysis. One of the chief conclusions emerging from the employment of a biocultural approach to analysis of cultural objects concerns attitudes to art as societal, political or “pure” self-expression. Art throughout the ages has been considered to be an expression or a reflection of social climate, social powers or an individual on understanding the world or environment, depending on the prevailing critical attitude. A biocultural approach to culture allows for the emergence of yet another kind of expression — art as a direct expression of human biology.

A biocultural approach to the analysis of culture has been employed in this study in order to arrive at insights concerning the use of such an approach. This includes the benefits and advantages as well as potential problems the biocultural

approach can pose for art critics. As the biocultural approach is relatively new and for some humanist scholars entering the field of hard sciences, like cognitive science or neuroscience, it is not enticing. The other potential problem (typically dealt with by humanists in relation to science) can be that a biocultural approach can be accused of determinism — however, it is contrary to the knowledge provided by neuroscience about the malleability of the human brain which refutes the deterministic attitudes in humans.

There is a great value in this approach for education in general but especially for the teaching of visual arts and multimedia as it exposes the foundations of visual communication as both culturally and biologically enabled. The understanding of the principles of visual arts like that of composition or sequencing and structuring of ideas in multimedia films and animations is the backbone of that artmaking. When such understanding is underpinned by the realisation that all these principles are not only a culturally shaped set of devices we use to communicate with each other but that they are biologically enabled in the first place by imitation, pattern recognition, wiring for storytelling, language and metaphors, a different appreciation of the ‘tools of the trade’ is achieved. Filmmaking, storytelling or art often thought of as the efforts of individuals allow themselves to be seen as also part of a bigger, collective effort humans have made for spreading culture and insights about human behaviour of all kinds. The effective methods of ‘teaching’ art and multimedia by example and imitation, as it is usually done in any case, are confirmed as biologically and culturally grounded. However teachers like me, by entering the field of biocultural critiques of cultural objects, are given an additional didactic tool for reflecting on their own teaching.

A biocultural analysis of cultural texts and objects relies on a combination of actions which simultaneously deal with cultural and biological phenomena which enable and facilitate human understanding of the particular object under

such analysis. How makers of cultural objects exploit our biological selves to emphasise where they want attention to be focused in an object means a good understanding of that biology is enabling for visual arts practitioners. In defining relationships between biological and cultural agents in a cultural object in terms of its form and content, actions such as pattern recognition, repetition, pointing, categorising and interpretation play a large role. The form of cultural objects is a direct outcome of the human cognitive make-up. The content of cultural objects is typically thought of as open for interpretative actions — but these actions in turn also rely on cognitive processes like anticipation, mind-reading, pattern recognition and emotional resonance and elevation.

A key element in this study has been simulation which is based on shared mental models and audiences who carry the mental models and respond to these models in varying degrees. Simulation and storytelling depend on the human capacity for empathy which is often described by cognitive science researchers as the power to identify oneself with a person or an object and, through this particular ability, humans are enabled to create stable inter-personal and inter-group relationships in which negotiations, transfer of knowledge and cooperation can be achieved. According to Gazzaniga (2005), Ramachandran (2011) and Rizzolatti and Craighero (2004, 2008), empathy has most probably been enabled by mirror neurons and is the key to the ‘mind-reading’ phenomenon that serves the recognition of emotions and intentions of others (ToM). One of Niccol’s strategies is to have the spectators empathise with Taransky remembering their own blunders. So Niccol draws his audience in.

Niccol exploits our empathy with simulations to satirical advantage. Although he does conclude the film, *SImOne*, with a confirmation of the potency of simulation, he immediately cautions that it is belief in fiction/unreality and simulations that brings about cognitive confusion. Niccol’s construction of being caught in the grip of these powerful opposite outcomes of storytelling is

compelling and satirical, even more so as it is the protagonist himself who is the originator of the simulated actress and stories about her. It is the believable account of the cognitive ‘meltdown’, however, of what Taransky experiences on a psychological level by fusing his Self with the invented Self of Simone that signals the vulnerability of human perceptions in deceptive situations.

The conclusions about the hyperreal qualities of simulation by Baudrillard (1996) and Eco (1986) are confirmed in Niccol’s film — the essential properties of simulations to supplement or supplant reality can be described as being debated in the film. From the cultural perspective many intuitions and inklings about the value of simulation and imitation are formed. However, the explanations of how human cognition depends on simulation and imitation in all aspects of human communication are accounted for by scientists in the field. Gallese (2003:521) proposes:

... that simulation, that is, how we model reality, is the only epistemic strategy available to organisms such as ourselves deriving their knowledge of the world by check means of interactions with the world. What we call the representation of reality is not a copy of what is objectively given, but an interactive model of what cannot be known in itself. Of course, this also holds for the social interpersonal reality in which we spend all our lives.

Technology is filled with human content, and technological advances are shaped for and around human capacities for transmission of information and knowledge, reading of other minds, perception, and sharing of empathy. If there is no value for humans in the transmission of information, the emergence and the development of the Internet, Facebook accounts filled with human events and opinions or the satellite communication would not have succeeded. However, technology is often perceived as something that is separate from humanity and something to be wary of.

Niccol through Taransky’s voice shares the opinion with his viewers that the

human ability to produce fakes outgrows the capacity to unravel duplicities and deceptions, as discussed in Chapter 4 of this thesis. The duplicities and deceptions are part of potentially maladaptive behaviour for short term gains — like extensive and unjustified access to resources or attaining excessive status — and form the part of the biological package which enables the transmission of culture. The degree of credulity and gullibility that is necessary to accept and spread ideas can also be used for dissemination of false ideas and confabulations. That the content of technology is human and that technology arises from adaptive behavioural patterns to transmit information about all aspects of human life is already hinted at in the Greek root of the word ‘*techne*’ which means ‘the way of making things’, and it is the human way of making things which are vehicles of and for the sharing of knowledge.

Attitudes to simulation vary depending on the cultural, scientific and philosophical bias of those writing about it, but current research has established its biological basis especially through recent findings about the operation of mirror neurons (Carr, Iacoboni, Dubeau, Mazziotta & Lenzi 2003; Keysers & Gazzola 2007; Ramachandran 2011). I have argued through the analysis of *SImOne* that simulation in cultural objects can act as a means of cognition.

Finally, the argument of this study is that cultural objects, including human simulacra such as sculptures, artistic representations of human beings, and invented simulacra serve to spread cognition in several ways. These ways can be summarised hierarchically as, first, what the maker of the simulacrum intends his audience to understand — this is embedded in a particular time, place and culture. Secondly, stepping back and reflecting on the way in which cognition is transmitted through the maker and his simulacrum, it is worth noting that humans can interact with the simulacrum and do so. The third point is that although the simulacrum is known and recognised as an illusion, it can still set off a train of consequences which affect the real world of those who have interacted with it.

Deceptions, dreams, visions, hallucinations, illusions, the world of virtual reality, statues, sculptures, artworks, all kinds of objects relying on mimesis can give rise to the problem of reliably distinguishing between the simulacrum and what it imitates. I have argued that makers of cultural objects depend on exploitation and manipulation of the biological characteristics which secure the attention of the viewers of the objects. The creators of cultural objects rely on pattern recognition to secure the attention of their audience and to satisfy the audience's bioculturally grounded desire for patterns. As Boyd (2009:86) puts it: "The high concentrations of pattern that art delivers repeatedly engage and activate individual brains and over time alter their wiring to modify key human perceptual, cognitive, and expressive systems, especially in terms of sight, hearing, movement, and social cognition."

The makers of cultural objects face a range of problems — mimetic, perceptual, cultural, political, epistemic problems of identity and of representation, not to mention the economic necessity of making a living. Through the solutions to these various problems offered by makers of cultural objects the evolution of culture continues. The method applied in this study is that of linking the characteristics of the individual cultural object to the biological base that enables the creator of the object to exploit the possibilities of both the object and the biology of the viewer to achieve the transmission of cognition.

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