# Science, Fables and Chimeras

# Science, Fables and Chimeras: Cultural Encounters

Edited by

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*Quelle chimère est-ce donc que l'homme?*
*Quelle nouveauté, quel monstre,*
*quel chaos, quel sujet de contradiction,*
*quel prodige!*
—Blaise Pascal. *Pensées* (1670), 434.

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# INTRODUCTION

The Mayan calendar had predicted a change in December 2012 that was interpreted as the Earth's doomsday. This event – which soon turned out to be a "non event" as the year 2013 began to unfold – is a timely instance of the close relationship between science, belief, and humankind's irrational fear of extinction.

It also illustrates the way in which our ultra modern world is still able to feed on ancient stories, entertain the idea that there might be alternative forms of life and question the ways in which we use or abuse our planet and run our lives. In one word, our contemporary civilizations are still steeped in myth – despite scientific progress and nanotechnology, despite Darwinism and modern art. But is "despite" the right term to use? Or shall we rather say, "because of"? The essays in this volume all address the issue by examining the interplay between 'science, fables and chimeras' – three words that made up the title for a conference that was held at Paul Sabatier University in Toulouse in June 2011.

Deliberately moving away from the way research and expertise have too often been compartmentalised, our concern has been to favour an interdisciplinary dialogue and recreate the dynamics that those cross-boundaries encounters created during the conference. For similar reasons we have decided to publish articles both in French and in English, depending on each contributor's preference, relying on consistent proof-reading and editing to forge a harmonious whole.

The very composition of the volume transgresses established orders and borders as it both uses and subverts the classical 'three-part' structure of conventional French essay-writing: while the first three parts of the volume offer academic contributions to the debate, the fourth part includes contemporary artistic responses that all explore the interaction between science, fables and chimeras in a more intuitive and experimental way. Such an editorial choice is meant first to record the particularly creative atmosphere that enriched the discussions during the conference, spreading to the University Library and further afield to the hall of Toulouse Natural History Museum. As our university library walls were illuminated with the display of Hervé Delamare's works shown alongside a small but beautiful selection of books drawn from our local university Old Books collection, so the conference also greatly benefitted from the presence of the novelist Margaret Drabble who kindly allowed a performed French reading (by

actor Phil Wharton) of selected passages from some of her novels. In addition, another contemporary French artist living in California, François Miglio, generously contributed to the conference debates by showing some of his canvasses, one of which so captured some of the themes running through the discussions at stake that we chose to use its three parts as headings to illustrate the first parts of our book.[1]

## The union of matrices

The first part of the volume, called "The Union of Matrices" engages with the relation between myth, fable and science. In chapter one, Ralph O'Connor offers a stimulating introduction to the questions underlying the study of "fables" in the broad sense of fictitious stories or narratives, or myths. He retraces the most recent critical theories on myth and suggests that myth should be truly examined and incorporated into the work of science in modern culture. Building on the critical work of the well-established theorist of myth Robert Segal, O'Connor contends that Segal's argument relies on "a sharp dichotomy between science and myth, in which science is assumed to have no function other than that of explanation" (O'Connor, 20). He goes on to suggest that myth can, and should be approached as an integrative part of science with which it shares a number of features – the most prominent of which is what could be called the urge to tell a story.[2] Having thus defined the common ground between myth and science, O'Connor convincingly revisits the cannon of the major intellectual figures who have looked into the definition of myth (such as Popper, Mircea Eliade and Joseph Campbell) to demonstrate how some of their insights could be applied, improved, or prolonged when considering today's science. In the last part of his article, O'Connor thus examines how such contemporary intellectual figures as the entomologist and sociobiologist Edward Wilson and the zoologist Richard Dawkins present the general public with an evolutionary epic that celebrates the progress of science in true mythical mode. What arises from O'Connor's analysis is a clear sense that myth and science go hand in hand, constructing their own definition, uncovering new territories to travel, evolving and building their own narratives. As fields of knowledge,

[1] For the purpose and coherence of the book François Miglio has given us permission to change the order of the panels of his triptych and we are most grateful to him for this.

[2] For a novelist's fine analysis of humankind's urge to tell stories, see Nancy Huston's book: *L'espèce fabulatrice* (Paris: Babel, 2010).

neither can stand alone, and both are clearly steeped in the culture from which they have emerged.

Olivier Keller's subsequent article on mathematics, myth and chimeras similarly stresses the primary role of traditional myths in the elaboration of thought in gerneral and offers a dual perspective on the use of chimeras in the construction of mathematical concepts by making a distinction between fruitful chimeras and sterile ones. In the first part of his article, he describes how the surface of caves was used by the hunters gatherers to symbolise the crossing from the natural world to the world beyond. Arguing that "distorted perspective" (a concept developed by Abbé Breuil) was purposely used so as to embody the ritualistic passage from this world to the next, Keller endeavours to show how the initial surface of the grotto was then used to create key-objects of elementary geometry such as the figure, the line and the dot. His next example takes us to a lesser-known area and the geometrical constructions known as *Sulbasutras* (meaning in Sanskrit "aphorisms of the rope") originating in India in the third century B.C. in which a creation-myth has given birth to an elaborate use of geometrical shapes. By contrast, the second part of Keller's article offers a decidedly provocative analysis on how mathematical knowledge has been and might be used to project modern interpretations on archaic sources – a claim he illustrates through two examples (megaliths and the Ishango bone found in Congo). The result, Keller argues, is purely chimerical and only draws attention to the interpreter's mathematical skills and/or fanciful imagination.

As the next section in part I demonstrates, at the heart of the debate lie three main human faculties: imagination, reasoning and faith, the focus of Alice Lamy's article on medieval thought. The first section of her article firmly anchors the scientific knowledge of medieval philosophers in Aristotle's definition of imagination (or *phantasia*) as a faculty needed to bridge the gap between the mere perception of sensory objects and abstract knowledge. She demonstrates how the English scholastic philosopher and logician, Walter Burley (1275-1344), drew on Aristotle's *Physics* to defend the view that imagination holds a very strong abstracting power. Lamy then retraces Burley's disagreement with William Ockham over Aristotle's categories of substance and quality showing how in his *De formis,* Burley holds that quantity is a form separate from the quantified body. Such an excursion into the complex scholastic debates of the medieval period allows us to become aware of the impact of philosophical thought on scientific theories and the perception of the world. If faith played a major role in the theory of knowledge of the fourteenth century, it also bore a huge weight in the way nineteenth-century natural philosophers

tried to reconcile myth with science. As Robert Segal reminds us in the introduction to his massive anthology on myth, "the issue of the relationship between myth and science was the preoccupation of nineteenth-century theorists. Because myth was assumed to be so much like science, the rise of science was assumed to threaten the survival of myth"[3].

The discovery of the fossils of the Burgess Shale by Charles Walcott in 1886 is a case in point and a good example of the collision between myth, science and faith. In her article on the subject, Alexandra Borsari rehearses the terms of the debate and examines the diverging interpretation of the fossils at the time of their discovery and their reassessment by evolutionary biologist Stephen Jay Gould. Looking at Gould's charges against Walcott in his best-selling book *Wonderful Life*, such as how, in Simon Conway Morris's words[4], "Walcott attempted to 'shoehorn' a range of previously unknown creatures into a few familiar categories to fit his preconceptions" on the diversity of living organisms, Borsari shows how the nineteenth-century scientist's knowledge and cultural background could only lead to the conclusions he drew.[5] In the same fashion, she argues, one can probably conjecture that Stephen Jay Gould's analysis of the fossils hinges on his own beliefs and cultural background, an idea also endorsed by Simon Conway Morris himself as he recently argued against Gould, declaring that he "held views on the mechanisms and nature of evolution — and even on humankind's place in the universe — as the 'lessons' to be drawn from the Burgess Shale".

That one should see a miniature replica of the formation and order of the universe in a fossil or a shell, or in William Blake's famous poetic line "to see a world in a grain of sand" is certainly the common feature between such figures as Walcott, Conway Morris, Gould, or D'Arcy Thompson. What is less common though, in the case of the last-named, whose work and achievements are detailed by Matthew Jarron in his article

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[3] *Myth: Critical Concepts in Literary and Cultural Studies*, ed. Robert Segal (London and New York: Routledge, 2007), 6.

[4] For a glimpse of the current controversy between Simon Conway Morris and Stephen Jay Gould on the fossils of the Burgess Shale, see the following article: Simon Conway Morris and Stephen Jay Gould, "Showdown on the Burgess Shale," *Natural History* magazine, 107 (10): 48-55.
http://www.stephenjaygould.org/library/naturalhistory_cambrian.html.

[5] To some extent, Umberto Eco's article, *Ils cherchaient des licornes*, adopts a similar line of argument when he explains that the Europeans travelling abroad all carried with them a whole library of virtual "reference books" that conditioned their approach and understanding of other cultures. See *La licorne et le dragon. Les malentendus dans la recherche de l'universel*, eds.Yue Dayun and Alain Le Pichon (Peking: Peking U.P. 1995).

"Transformations", is the sheer breadth of knowledge covered by the great Scottish naturalist whose studies ranged from foraminifera to geometry and classical literature. Today, one could hardly imagine a university professor giving her students the following advice: "Try also to understand that though the sciences are defined from one another in books, there runs through them all what philosophers used to call the commune vinculum, a golden interweaving link, to their mutual support and interpretation" (quoted in Jarron, 84). And yet, reading about the multifarious and far-reaching repercussions of d'Arcy's observations in such diverse fields as chaos theory, fractals or biomathematics, one can only be struck by the beauty of that "golden interweaving link" running through all things. Among them, perhaps the most unexpected outcome of D'Arcy's interest in geometry is the descendant of his transformation diagrams now used in computerized sculpture form-making – examples of which were recently on display at Dundee.

The final article in part one of the volume also examines the interactions between science and art in the nineteenth century, this time from the perspective of the novel. Isabelle Percebois further explores the blurred frontier between art and science in so-called pseudo-sciences such as phrenology or animal magnetism – all of which became hugely popular throughout Europe at the time. She then goes on to demonstrate how those "soft sciences" such as mesmerism actually derive from real science and technological advances combined with the dream world of the supernatural. Conversely, literature drew from those newly invented pseudo-sciences to imagine new plots and unsolved mysteries. In such novels as Mary Shelley's *Frankenstein* or Villiers de l'Isle-Adam's novel, *Claire Lenoir*, invented notions such as "magnetic fluid" or "vital fluid" are used to substantiate fanciful theories and stories.

## Holistic visions

Part two, entitled "Holistic visions", mainly focuses on chimerical perspectives within the exploration of the dialogue between science, spirituality and religion.

The notion of an "inescapable" conflict between religion and science has been the subject of a centuries-old debate. The historiography of the relationship between science and religion highlights the ever-sensitive character of the matter at stake: how have boundaries shifted between the two concepts? The 'Conflict Thesis' firmly substantiated by the Irish apothecary John Rutty in the mid-18$^{th}$ century in *A spiritual diary and soliloqui* (1776), and then reinstated by John William Draper's *History of*

*the conflict between religion and science* (1875) and Andrew Dixon White's *A history of the warfare of science with theology in Christendom* (1896), establishes a formal state of opposition between the cause of science and that of religion. It was then taken over by major historians and scientists such as Galileo Galilei (1564-1642), Charles Darwin (1809-1882) or Richard Dawkins, and prevailed as the commonly accepted theory much into the twentieth century. This approach considered that religion and science are separate but equal, where religion is a source of ethical and religious inspiration, while science deals with objective, quantitative modelling of physical phenomena.

In section I, the three articles offer a broad view of the intertwined relationship between the scientific and the imaginary. Daniel Larangé explores the synthesis of the sciences by engaging the debate between imaginary science and the science of the imaginary. By taking the example of esoteric mysticism, Larangé presents a thorough analysis of the reenchantment mechanism in which faith becomes more rationalized within a search for harmony. Soul, conscience and body are analysed as embodiments of the three categories of sciences. In addition, magnetism, mesmerism, positive thinking and spiritism are auxiliaries of the romantic bridging of science and religion in the nineteenth century.

The next article by Sébastien Grégov stresses the importance of hermeticism in the chimerical encounters of science and religion by unveiling the deeper meaning of Christian Rose-Croix's *Noces Alchimériques.* Back in the seventeenth century the emergence of the Rosicrucian cult laid the foundations for a new pattern designed to show how to heal the world through experientialism and the imaginary. The main objective of hermetic experience is to bridge science, conscience and religion. The author also points out the necessity of a magic thought that results from a combination of religion and the sciences. Through the example of the *Noces*, Gregov shows how important it is to refocus the world onto the human individual himself, away from scientific discoveries. Man is meant to recreate chimeras to re-enchant the world. It is the purpose of a 'new conscience' where hermetic science would include all the other sciences: 'I am in the world, and the world is in myself'.

Egil Asprem's contribution offers an exploration of anti- and non-mechanistic tendencies in early twentieth century science, illustrated by the "vitalistic controversy", that deal with two epistemic aspects of the Weberian disenchantment thesis: first, the idea that the world is completely rationally explicable; second, that there is a strict epistemic divide between the domains of religion, philosophy and science, in which

science's vast potential is still restricted to cold facts, whereas it can tell us nothing about "ultimate questions" regarding value, ethics, or metaphysics – the presumed domains of religion and philosophy. The author argues that scientists in Weber's own day were far from universally committed to such a view of science; on the contrary, much groundbreaking scientific work took a very different stance. Through the examination of several historical examples, Asprem suggests that the illusion of disenchantment covers up some intriguing cultural links between empirical branches of science and religion, which also force us to move "the occult" out of the margins of early twentieth century science towards the centre. This holds particularly true for the sciences of life and mind.

In section II, the two articles unfold arguments for new claims regarding the importance of occultism or esotericism in the future of the science/religion dialogue. Over the last three decades, many historians of science have strived to develop a revisionist perspective on the conflict thesis. In the 1970s, John Hedley Brooke was one of the most significant revisionists in this matter, arguing against the partiality of the notions of both science and religion in this thesis, and emphasizing the more 'social' (and complex) implications instead of taking an essentialist approach. Later, David Lindberg and Ronald Numbers demonstrated the complexities and more subtle interactions between science and religion by initiating the 'Complex Thesis'. Science and religion are in agreement when one or the other is nudged, interpreted into conformity. The need for a revision of common approaches to this problematic relationship between science and religion has been supported by many recent discoveries and events, bridging the two categories. One example is the July 2012 announcement of Cern, the particle physics lab near Geneva, concerning their identification of the Higgs boson (aka the God particle), or at least a particle that behaved like it. Indeed, elementary particles, like the quarks and electrons inside atoms, derive their mass from an invisible field that stretches through all of space. Without something to give particles mass, there would be no stars, planets or life as we know it. The recent reappraisals of the categories of 'science' and 'religion' have triggered a new trend in historical and sociological inquiry: a shift from 'beliefs' to 'practices' within the perspective of a deeper questioning of these categories. And as Peter Harrison has suggested, the 'science' category

appeared in the nineteenth century, while the 'religion' category was introduced during the European Enlightenment.[6]

As Marco Pasi underlines in the first article, modern art is intimately connected to magic and esotericism. He shows how modern art has been influenced by the occult insofar as it promotes a return to the primitive 'mind' of magic. Would post-modern art become another religion or New religious Movement? Pasi also questions the equation of magic with modern art, thus suggesting a higher importance of occultism in the evolution of the arts. Should we interpret this phenomenon as a reactionary or anti-establishment stand? Contemporary art must be considered at a distance, as experimentation, a transgression of traditional religious values. Is art a substitute for secularization? Marco Pasi reveals that, with the importance of esoteric initiation and magic, secularization is not so widespread in the arts. With its heritage of resentment towards traditional religion, post-modern art has become an area of experimentation, of constant innovation, challenge, provocation and transgression of aesthetic, as well as political and social conventions. There seems to be an intriguing parallel between occultism and contemporary art.

The article by Philippe Murillo that follows examines the conversion of religion and science into metaphysics to contemplate a state of harmony between the mind, the spirit, the body and the cosmos. To what extent can spirituality and faith be secularized, if at all? Popular metaphysics has always been part of the fostering of American spiritual and religious identity. American metaphysical religion (New Thought) is the epitome of chimerical encounters between practical expectations and a spiritual quest. The author points out a reconceptualization of magical and therapeutic spirituality within a post-secular society. A new way is being proposed to spiritual seekers, like a crossbreed between science and spirituality, where western idealism and eastern mysticism are combined. Moving from a substance perspective to one of 'process', New Thought is undergoing a (chimerical) transformation into 'Process New Thought'. Science and 'process philosophy' are used to renew a century-old practical religion. In keeping with new philosophical trends and scientific developments, such as quantum physics, among others, Process New Thought emphasizes that the soul is less a "thing" than a history of experiences.

[6] Peter Harrison, 'Science' and 'religion': constructing the boundaries, in *Science and Religion, New Historical Perspectives*, Ed. Thomas Dixon, Geoffrey Cantor, Stephen Pumfrey (Cambridge: Cambridge University Press, 2010), chapter 2, 30-31.

## Gemmation

Part three of our volume moves away from the issues and historical debates surrounding science and religion to offer a selection of case studies that reflects the fertile cross-pollination between literature, science and the arts. The first section examines how literature and the arts have used the development of scientific knowledge and technology to hold up a mirror in which humankind can contemplate its own limitations and faults. In her article on fables, Sabine Gruffat offers an original account of La Fontaine's famous fables and of the writings of some of his followers, such as Houdar de la Motte and Fénelon. In her analysis she more particularly pays attention to the back-and-forth movement between the scientific exploration of the insect world in the emerging discipline of entomology and their translation into moralistic tales, arguing that the numerous changes in scale (from the very small creatures to be seen through the recently-invented microscope to the infinite and unknown bounds of the universe) illustrates the moralistic excesses of the human mind. She goes on to show how in the 18th century writers like Réaumur or Fénelon used familiar topics such as the history of bees or silk worms to renew the popular genre of the fairy-tale to include what could be called "the marvellous real".

By contrast, Houdar de la Motte – a somewhat second-rate eighteenth-century fabulist – went as far as to advocate the writing of fables combining the "erroneous naturalism" of the past (and its beliefs in fabulous creatures such as the sphinx or mermaids) with "modern truths" (Gruffat, 212). As Gruffat convincingly argues, in those writings, the fable gradually becomes a place of experimentation that allows readers to admire a homely and familiar representation of the marvellous. As such, the fable genre is able to popularize the more unsettling advances of science and to enhance the writings of the encyclopaedists. This is beautifully exemplified in the last part of her article where she analyses l'Abbé Aubert's *New Fables* (1773) and La Fontaine's *Fables* in relation to Buffon's natural history.

In the next article, Céline Cadaureille also offers a focus on supernatural creatures and the sense of wonder that arises from the merging of experimental research in the sciences with the inventiveness of the arts. In her analysis, she shows how Australian artist Patricia Piccinini uses art to show the blurred frontier between the human and the non-human. In her photographic series *Protein Lattice* (1997) and in *So2*, a pseudo-chimerical creature named *Exallocephalla parthenopa* after the mythological figure of Parthenope and inspired by recent developments in

synthetic biology, the artist questions the ever-changing definition of humanity. In the Venice Biennale Show (in 2003), her hyper-realistic moulages confront and engage the viewer in an unsettling and possibly disturbing experience. As Cadaureille underlines, the chimera here does not so much refer to mythology as to the potentially unnatural cross-breeding of different species (Cadaureille, 230).[7] In looking at how the artist stages her art works, the author refers to Freud's notion of the uncanny – a particular feeling of strangeness arising from a familiar scene turned alien – and clearly identifies the artist's awareness of the moving frontiers between life and its inanimate counterparts.

The issue of cross-breeding or hybridization is also at stake in Peter Matthiesen's novel *Killing Master Watson* as aptly shown by Marie-Christine Noailles. Here as in most of his other novels, according to Noailles, the author combines scientific observation with lyrical, sophisticated prose that connects the world of art and the world of the natural sciences. As Noailles describes the various protagonists in the book, she underlines the parallel between some of the characters and Charles Darwin and his cousin, Francis Galton (inventor of eugenics and the "nature versus nurture" phrase). She goes on to demonstrate how the main characters in the novel embody underlying ideological positions regarding humankind and some of Darwin's key-notions, like variation under domestication which deals with the breeding of domesticated animals. In *Killing Master Watson*, she argues that hybridization is not limited to natural phenomena but can be seen to operate in all fields and at every level of human existence so that literature and natural science are seen to use and share the same concepts. Even though cross-disciplinary studies tend to even out differences and highlight the common features between science and the humanities as if they both cultivated the same infinite plot of ground, one has to acknowledge that investigating the significance of scientific theories in disciplines other than the science they emerged from may mean travelling long distances through uncharted waters.

As Monique Martinez and Michel Caffarel well illustrate in their jointly authored article on quantum physics, such an intellectual endeavour is inevitably risky and adventurous as it demands both scientific rigour and imagination. In the first part of the article, Martinez details how such

[7] Incidentally, Piccinini's latest show (and first solo exhibition) in London entitled "Those who dream at night" (December 2012) also addresses the issue of regeneration and fertility in the broadest sense as the artist herself declares in a recent interview. (http://www.rev-ma.blogspot.co.uk/2012/12/patricia-piccinini-haunch-of-venison.html)

theorists as Gregorio Morales have developed "quantum aesthetics", going as far as arguing that quantum theory had first instinctively been discovered by artists rather than scientists. The main point here, though, is to plead for what Edward Wilson called "the unity of knowledge" and become aware that "science needs the power of intuition and metaphor provided by the arts just as the arts need the new stock of knowledge that science can provide (quoted in Martinez, 258)." In the case of quantum physics principles applied to the arts a number of examples are given by Martinez in drama and in avant-garde music (John Gage) which all tend to illustrate the benefit gained from such cross-fertilization. However, in the second part of the article, physicist Michel Caffarel uncovers some of the complexities underlying the over-simplistic view of quantum physics and warns us against any hasty conclusions: the world of quantum physics should not be too readily opposed to classical physics as many aspects of the physical world also challenge our reason and defy our wildest imagination, all things that the science and art of tomorrow will undoubtedly explore.

The final article in the section moves one step further towards the future by discussing the changing nature of humankind through two lenses: science fiction and nanotechnologies, two fields that heavily rely on the power to envision the future through technology and the power of myth. After quickly retracing the major stages of the development of nanotechnology and describing the various actors involved, Mathieu Quet here examines a new kind of bestiary: human hybrids transformed in various ways with the help of technological devices or through medical advances. By choosing to focus on athletes and genetic doping, he demonstrates how numerous modern chimeras get created and designed: part human, part machine, these new beings (cyborgs, genetically-modified creatures) have become the focus of attention because they embody what humankind may turn into. However, as Quet concludes, the discourse on nanotechnology implies that those new chimeras are only part of an overall attempt to supervise as much as to encourage innovation. In this debate hovering between the public sphere of popular science and science fiction and the academic world of fundamental research and "scientific facts", the chimera still looms large in our imagination.

## Artistic voices

As mentioned at the beginning of the introduction, the last section in the volume is intended to offer a dialogue between first-hand accounts of how contemporary artists and writers use the raw matter of scientific

objects or theories to create their own cosmogony peopled with chimeras and give instances of the critical reception of their practises. In the first contribution in this section Laurence Roussillon-Constanty gives a synthetic and necessarily sketchy account of the representation of chimeras in canonical medical treatises such as Ambroise Paré's *Monstres et Prodiges*. As a very general commentary on the selection of book illustrations displayed as part of the temporary exhibition held in the university library of the science faculty in Toulouse, the article offers a conspectus of the visual representation of well-known chimerical creatures such as the so-called Ravenna Monster or the unicorn. Its main purpose is to show the continuity of motifs that run from the sixteenth century through to contemporary artistic practice, as exemplified by the practice of artist Hervé Delamare.

The interview with the artist reproduced in the volume will hopefully be seen as a lively follow-up to the exhibition and as an insight into Delamare's rich imaginary world and visual vocabulary. In his artistic practice the chimera is translated into various kinds of media (from drawing to sculpture and wax moulages), sometimes getting reproduced at different scales, and ranging from the gigantic (in sculpture) to the smaller, fragile structure (such as the figure that appears on our book cover). In the same way, François Miglio's work stems from close observation of the natural world and its inherent structure which he shares in his contribution on fractals in relation to the chimerical, fanciful and disorderly universe that surrounds us. What emerges from Miglio's personal artistic experience is a deep sense of the harmony underlying the seeming chaos of life and a feeling that the artist has freedom to build on science to create his own cosmogony.

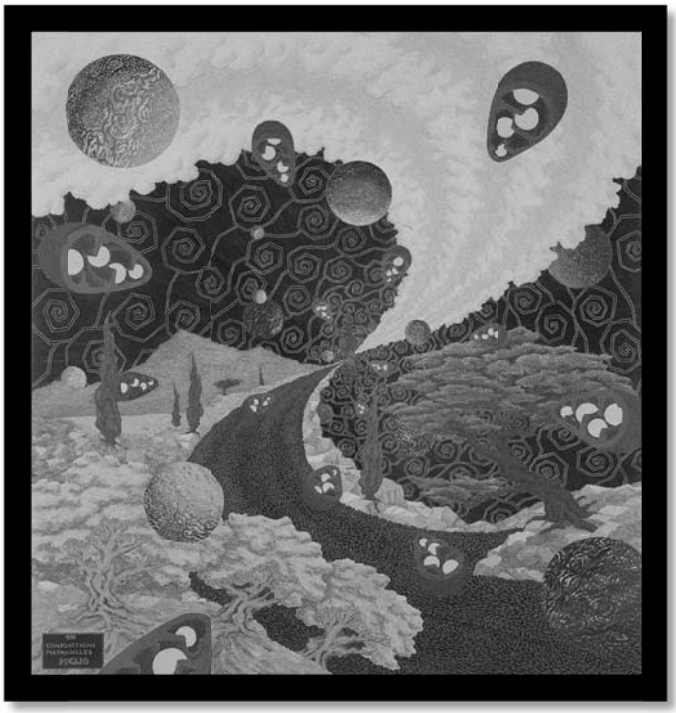
The final chapter in this section takes up the same cue, this time from the point of view of fiction. In her splendid contribution, Margaret Drabble retraces her own experience as a fiction-writer growing up in Britain in the 1960s and writing in the context of the now classic debate about the 'two cultures'. She goes on to illustrate how she herself used motifs and themes from the natural sciences in writing her family saga *The Peppered Moth*, in which this particular insect – said to be the only existing evidence of 'evolution in action' – as a metaphor for her characters' greater or lesser ability to adapt to a new environment. The volume concludes with Claudine Peyre's article on Margaret Drabble's novels, in which she describes how fiction is always intrinsically interlaced with myth, even in the most realistic stories. In Drabble's fiction, the domestic sphere itself resonates with echoes of debased mythical figures and uses science to reflect on chance, free will and unforeseen encounters.

In literature, art or science what ultimately seems to be the thread in all the essays in the volume might just be that profoundly human need to fictionalize, invent new myths or create artistic forms that suggest infinite patterns and "endless forms". As scientists tell us that the universe is for ever-expanding and philosophers argue that "now is the time for a finite world"[8] we find ourselves like the janus-faced chimerical figure in Delamare's sculpture – having to find a new balance in the Moëbius strip, torn between the desire to look forward to our future and the temptation to look back on the mysterious way in which our destinies have so far unfolded.

[8] Albert Jacquard, *Voici le temps du monde fini* (Paris:Seuil, 1993).

# PART A:

# THE UNION OF MATRICES



ILL. A-1 : François Miglio, *Unions of Matrices*, detail from Triptyque EXPLORATION I (H 85cm x L 80cm)