

**ANIMATION**

**A  
WORLD  
HISTORY**

**VOLUME 1**

**FOUNDATIONS  
-THE GOLDEN AGE**

**GIANNALBERTO  
BENDAZZI**



# ANIMATION: A WORLD HISTORY, VOLUME I

A continuation of 1994's groundbreaking *Cartoons*, Giannalberto Bendazzi's *Animation: A World History* is the largest, deepest, most comprehensive text of its kind, based on the idea that animation is an art form that deserves its own place in scholarship. Bendazzi delves beyond just Disney, offering readers glimpses into the animation of Russia, Africa, Latin America, and other often-neglected areas and introducing over fifty previously undiscovered artists. Full of firsthand, never-before-investigated, and elsewhere unavailable information, *Animation: A World History* encompasses the history of animation production on every continent over the span of three centuries.

Features include:

- Over 200 high-quality head shots and film stills to add visual reference to your research
- Detailed information on hundreds of never-before-researched animators and films
- Coverage of animation from more than ninety countries and every major region of the world
- Chronological and geographical organization for quick access to the information you're looking for

Volume I traces the roots and predecessors of modern animation, the history behind Émile Cohl's *Fantasmagorie*, and twenty years of silent animated films. Encompassing the formative years of the art form through its Golden Age, this book accounts for animation history through 1950 and covers everything from well-known classics like *Steamboat Willie* to animation in Egypt and Nazi Germany. With a wealth of new research, hundreds of photographs and film stills, and an easy-to-navigate organization, this book is essential reading for all serious students of animation history.

A former professor at the Nanyang Technological University of Singapore and the Università degli Studi of Milan, Italian-born **Giannalberto Bendazzi** has been thoroughly investigating the history of animation for more than forty years. A founding member of the Society for Animation Studies, he authored or edited various classics in a number of languages, and has lectured extensively on every continent.

‘Giannalberto Bendazzi is a highly gifted historian, scholar, observer, teacher, and most of all, lover of animation in all of its many forms. His painstaking and detailed research, as well as his social and cultural observations about the various times during which many animated pieces were produced, give his writing an authenticity rarely seen in other books on the subject. I cannot think of anything better than to curl up with one of his books and have him tell me the world history of the animation medium I love.’

**Eric Goldberg, Animator and Director,  
Walt Disney Animation Studios**

‘Giannalberto Bendazzi’s book gives us the complete overview of how the art of animation developed around the world in the last one hundred years. It is a book global in scope for an art form now global in appeal and being created around the world. This work is an essential addition to the library of any serious scholar of cinema.’

**Tom Sito, Chair of Animation,  
University of Southern California**

‘A staple of any animation library, this encyclopedic book covers the far reaches of production worldwide, throughout history. It is an incredible resource from one of the animation world’s leading scholars.’

**Maureen Furniss, Director of the Program in  
Experimental Animation at CalArts**

‘Giannalberto Bendazzi is one of the world’s finest historians and scholars of the art of animation. We are indeed fortunate that his thorough research, cogent perceptions, and eloquent writing is now in this . . . acclaimed masterly tome on world animation.’

**John Canemaker, Oscar winning independent Animator,  
Animation Historian, Author, and Professor**

‘I feel that one looks into Giannalberto Bendazzi’s exhaustive book as one does into a mirror – it is the whole history of the animated film and all its creators . . . In taking up such a grand endeavor, Bendazzi has shown a determination, a predisposition, and above all, a talent comparable to that of the finest filmmakers . . . With this talent Giannalberto Bendazzi gives meaning to our work. To our creativity and volition, to both the ability to withstand hard work and the temperamental nature of a creative spirit, to study, to our artistic caprices, to accuracy, and to our eccentricities, creative perfection and human imperfection, expectations and improvisations, passions and doubts, successes and failures . . . This is a book that has long been anticipated by professionals and enthusiasts of animation from all over the world.’

**Jerzy Kucia, Director, Poland**

‘Giannalberto Bendazzi is the greatest animation historian I have ever met.’

**Priit Pärn, Director, Estonia**

‘I am extremely proud that Giannalberto Bendazzi, at the beginning of my career, was my first official biographer. And I like to believe that I was the flame that led him to become one of the world’s top experts in the field of animation.’

**Bruno Bozzetto, Director, Italy**

‘I don’t know any historian of animation more reliable than Giannalberto Bendazzi.’

**Yamamura Koji, Director, Japan**

‘I have been anxiously waiting for this sum total on animation . . . Giannalberto Bendazzi monitored, saw, and noted everything and met everyone in the world of my beloved profession – and for so long, way before it was fashionable. Wherever I went – to both festivals and meetings throughout continents – he was there. Welcome to the monumental book that takes into account a great art and the whole planet.’

**Michel Ocelot, Director, France**

# ANIMATION: A WORLD HISTORY

## Volume I: Foundations— The Golden Age

Giannalberto Bendazzi

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FERENC MIKULÁS, AND MIDHAT AJANOVIĆ AND  
TO THE SMILE OF ILARIA, 23 YEARS OLD.



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# 1

# FOUNDATIONS

## What It Is

This history is a linear narrative, chronologically structured in ages and, furthermore, divided up into nations and authors – a traditional approach.

There were other, newer options.

Worth taking into consideration were, for instance: a history of the cross-pollination between animation and society or a history of transnational market networks – namely, the American 1910s until today, the 1945–1991 in Russia, and the Japanese 1960s until today. Counterfactual history could have been a promising option, too: For instance, what would have happened to the art, craft, and industry if no theatre had decided to screen Walt Disney's *Steamboat Willie* in 1928?

Those unbeaten tracks, based on already known (or easy to get) information, would have been exciting intellectual exercises, both for the writer and for the readers.

However, animation studies – as a whole – are still in their infancy. In history, many facts, pure and simple, still need to be unearthed. No less important is the need to honour quality. Too many good films and filmmakers, be they mainstream or independent, were (are) risking oblivion and are missing from the current showcase.

On this ground, investigating, exploring and, eventually, reporting were considered the writer's primary duties – and goals as well.

## Mapping Chaos

Mapping is one of the strongest tools the human mind can use to achieve knowledge. It is unsophisticated and possibly

elementary, but certainly it is needed when a journey has to start in a *terra incognita*, an unknown land, like, in our case, the facts and feats of animation as they developed globally.

Mapping is the principal ambition of this book: finding paths; setting landmarks; entering names, titles and dates into the sector's general knowledge as a result of the aforementioned exploration. To younger scholars, the pleasure to examine everything closely. . .

## Turning Points

One more avowal. Periodization is one of the most difficult tasks a historian has to face. It's mandatory to identify coherent periods of mapped facts, basically through the 'discovery' of clear turning points.

A turning point is an event that's so important as to characterize what happened *before* and *after* it as two separate chapters – although linked by elements of continuity.

A historical period shows an affinity between certain events and a component that stabilizes them all around a core.

In such a context, we *narrate* – i.e. we *explain* the facts.

In this writer's opinion, a good historian seeks to narrate/explain the facts, not list them. In order to narrate them, he or she must go back to the origins and decipher the causes and effects, since a fact, to be historical, must be significant.<sup>1</sup>

## Periods

Let's then identify, within the history of animation, periods and turning points.

---

<sup>1</sup> This is the basic difference (not always clear even to highbrow people) between chronology and history. Chronologically, there is no doubt that the Europeans (Vikings) landed on the American continent 500 years before Christopher Columbus – but with no lasting effects. Historically, the event that produced a world revolution was the 'discovery of America' on 12 October 1492. Again, a fact, to be historical, must be significant.

**The First Period** spans the years before the screening of Émile Cohl's film *Fantasmagorie* in Paris, France. There is no 'animation' as such there, but the film still incorporates many features that look like what nowadays we would consider to be animation. We will call this period 'Before *Fantasmagorie* (0–1908)'.

**The Second Period** embraces the entire silent film era and ends with a specific date: 18 November 1928, the day of the public screening of Walt Disney's first 'talkie', the short film *Steamboat Willie*. We will call this period 'The Silent Pioneers (1908–1928)'.

**The Third Period** includes the years when Walt Disney dominated the industry and the development of film animation as a primary form of entertainment, acclaimed by critics and beloved by audiences throughout the world. An appropriate denomination of this period is 'The Golden Age (1928–1951)'.

**The Fourth Period**, covered in Volume II of this series, is short and runs from 1951 (the date of projection of the UPA short *Gerald McBoing Boing*) to 1960, the date of the first international animation film festival (Annecy, France). It is characterized by indecision. Disney and his imitators lost momentum, the UPA proposed a new style, the television age began and an original animation output was born in Europe. We'll christen it 'The Birth of a Style (1951–1960)'.

**The Fifth Period** (Volume II) begins with the blooming of the television series and *auteur* animation and ends with the conclusion of the Cold War. Although it is varied and subjected to strong changes within the market (in the field of television or advertising) and within technology (e.g. computers), it is substantially uniform, as it obeys the political and economic division of the world into two major areas: one influenced by the liberal United States and one influenced by the communist Soviet Union. This period is called 'The Three Markets (1960–1991)'.

**The Sixth Period** (Volume III of this series) begins in 1991 and features economic globalization; the expansion of television series; the progress of countries like Japan, Korea, China, and India; and the consolidation of elitist

*auteur* animation. But it is impossible to write history while it is still being made. We'll leave this period uncharacterized until the day we witness its ending: These are then 'Contemporary Times (1991–2015)'.

## Guilty, but with an Explanation

No written history is but a subjective history. Sincerity, respect and honesty may be guaranteed; objectivity, never. No narrator is the same.<sup>2</sup>

This writer is acutely aware of his personal limitations. We must be even more aware of the project's limitations. Could a better mind, or the best possible mind, write a completely satisfactory history of a phenomenon that spans over three centuries and the whole globe?

Obviously not.

Nevertheless, the phenomenon called animation is – perversely – as important as it is underestimated and underinvestigated. This book will try to answer a few questions (perhaps too few) but will hopefully raise many.

In other words, this is a step upwards – and just this. Both the book and the step will have achieved their goal as soon as they simultaneously become useless.<sup>3</sup>

## Traces

Sources about animation are scanty. Film copies, drawings, puppets, sketches, accounting books, and letters are perishable. Most of them have perished. Almost always, they were disbanded or thrown away once a company or a single filmmaker died. Very scarce media coverage and very scarce opportunities for screening have always been given to *auteur* animated films. Sometimes people who control some sources deny access to them, for reasons known to them only. And so on and so on.

So, beware. 'Historical study', G. R. Elton stated,

<sup>2</sup> This writer is a European, born during the Cold War, with an education based on classical studies, influenced by the cultural, political, social, philosophical, and religious beliefs and disbeliefs of his times. The reader will either agree or disagree with the approach. An example? This historian praises quality over quantity. He might believe that a film, famous and extremely successful at the box office, was artistically poor: You will be reading in these pages that that film was a poor film. This historian cares about freedom. Any blessed-by-money film has enough power to stand up and make itself known. A film of humble origins has much less power and hence much less freedom. To rectify the situation, more room will be devoted in these pages to the less powerful films – value being the same, of course.

<sup>3</sup> Links, names, and chapters will almost certainly be missing from the following pages. In addition, other pages (filled with names, titles, and dates) may be boring to the reader but were necessary because it was imperative to do some 'pre-emptive archaeology' (pardon the oxymoron) and leave at least a trace that could be later used by younger and better-equipped scholars.

is not the study of the past, but the study of present traces of the past; if men have said, thought, done or suffered anything of which nothing any longer exists, those things are as though they had never been. . . . The past is over and done with: it cannot be relived. It can be reconstructed – seen and understood again – only if it has left present matter behind.<sup>4</sup>

## You Won't Find. . .

For more than forty years, Henry Jamison Handy (1886–1983) operated one of the leading industrial film studios in the United States: the Jam Handy Organization. Based in Detroit, Handy's studio was conveniently located in America's industrial heartland and produced hundreds of advertising, training, and informational films for General Motors, RCA, the National Cash Register, and a number of growing industries looking to take advantage of business opportunities afforded by the new media. Until the firm dissolved in 1970, its clients included local governments, the military, and educational and religious organizations.

There have been thousands of Henry Jamison Handys in the world. Future historians will acknowledge their merits and relate their accomplishments.

This book, instead, focuses on entertainment and art. To satisfactorily deal with advertising and training and educational films, too, would have required many more years of research. As the old saying goes, 'Perfect is the enemy of good'.

## A Hybrid

For many reasons, a book that started with one author became a hybrid between an authored and an edited book. This writer read, edited, in most cases interpolated and eventually approved every single line of the contributors' texts in order for the final result to be consistent. (Obviously, no *concept* by any contributor was modified or censored.) This is a claim for shared responsibility, not for shared authorship on my part. In other words: If readers enjoy the texts by the contributors, let these authors be praised; if not, let this writer be blamed.

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<sup>4</sup> G. R. Elton, *The Practice of History*, Fontana Press, London, 1987.





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# THE FIRST PERIOD

The First Period spans the years before the screening of Émile Cohl's film *Fantasmagorie* in Paris, France. There is no 'animation' as such there, but the film still incorporates many features that look like what nowadays we would consider to be animation. We will call this period 'Before *Fantasmagorie* (0–1908)'.



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# 2

## BEFORE *FANTASMAGORIE* (0–1908)

### Archaeology

A forerunner is just a runner. He doesn't – nor does he care to – predict what posterity, with hindsight, will call him.

Most of the actions, productions, and inventions that took place before the nineteenth century and look like something we now call animation were produced by forerunners. To what we now call animation, they have no cause-and-effect connection. They are purely anecdotic and thus useless to our historical discourse.

For the sake of completeness, we will look for a few examples from history.

On 30 December 2004, an article called 'First Animation of the World Found in Burnt City, Iran' was published.

This is the text:

An animated piece on an earthen goblet that belongs to 5000 years ago<sup>1</sup> was found in Burnt City in Sistan-Baluchistan province, south-eastern Iran.

On this ancient piece that can be called the first animation of the world, the artist has portrayed a goat that jumps toward a tree and eats its leaves. . . . On this goblet, with a diameter of 8 cm and height of 10 cm, the images show movement in an intricate way that is an unprecedented discovery. Some earthenware found in Burnt City show repetitive images, but none of them implicate any movements.<sup>2</sup>

Trajan's Column is still standing in downtown Rome. It was erected in 106 to 113 AD to commemorate Emperor Trajan's victories in Dacia (now Romania) between 101 and 102 AD and 105 and 106 AD.

A helicoidal band of beautifully carved reliefs winds around its height of 42 m (138 ft). The band is more than 180 m (600 ft) long. Its width varies from 60 cm (2 ft) at the bottom to 120 cm (4 ft) at the top. There are more than 2,000 carved figures depicting the story of the expeditions. These start with soldiers preparing for the war, and then we see the bridges Trajan built, the forts he attacked, the camps he destroyed, and the enemy he forced to retreat. The reliefs were not always in plain white: Originally, they were gilded and, like many Roman monuments, brightly coloured. This was a story told with figures – perhaps like an animated puppet film, a comic book, or a documentary.

In 1952, French animation scholar Marie-Thérèse Poncet published a book to state that Middle Age illustrations had a lot in common with animated cartoons;<sup>3</sup> even better, they already were animated films. She wrote:



Figure 2.1 Earthen goblet of Burnt City, 3000 BC Tehran, National Museum of Iran.

<sup>1</sup> More precisely, to 2,600–2,700 BC.

<sup>2</sup> A serious filmed reconstruction of the action is available at [http://cela.etant.free.fr/stories/wp-content/burnt\\_city\\_old\\_animation.mov](http://cela.etant.free.fr/stories/wp-content/burnt_city_old_animation.mov).

<sup>3</sup> A. G. Nizet, 'Étude comparative des illustrations du moyen âge et des dessins animés', Paris, 1952.

We won't be listing all the possible films; we will choose some typical examples. . . . In the XI century, the historical film of the Tapestry of Bayeux.<sup>4</sup> In the XII century, the evangelical films, narrative and didactic, of the frieze of St. Gilles du Gard and of St. Trophime d'Arles. In the XIII century, the jubé of the church in Bourget du Lac, around Chambéry in Savoy. . .

Like animated cartoons, these Middle Age images took their subjects from flora and fauna, and were designed, inked, painted, and put in the order that spectators watched them. The ancient chromatism is not different from that of Walt Disney – the education and entertainment of common people, via simple but attractive drawings, are the goals of both forms of art.

In 1999, animation director and fine intellectual Takahata Isao published a book on the art of *emaki*, picture scrolls, in relation to the 1999 exhibition at the Chiba City Art Museum. The exhibition showcased Ghibli's animation art and *emaki* scrolls side by side. *Emaki* is a horizontal, illustrated narrative form that was created during the eleventh to sixteenth centuries in Japan. It combines both text and pictures and is drawn, painted, or stamped on a hand scroll. Topics include battles, romance (the best known are *emaki* based on *The Tale of Genji*), religion, folk stories, and tales of the supernatural world. The reading of *emaki* alone, done so that the right hand opens the upcoming pictures while the left hand closes the scroll, resembles a film turning on the projector. The same characters appear from scene to scene, with their story continuing. *Emaki* show human poses and expressions, depicting their energy and movement; 'movement lines' represent quick actions; sometimes, within the same scene, a character is drawn in different stages in succession according to its displacement.

### Phidias' Animating Chisel<sup>5</sup>

1. In the Parthenon frieze, there is an intentional analysis of movement and a conscious use of this analysis.
2. The representation of the phases of the movements is a structuring element of the composition.

3. The frieze is designed like a musical symphony. The motion analysis provides support for rhythmic and melodic organization and also the use of counterpoint.
4. It is possible to decode the frieze as a musical score and for an orchestra to interpret the music.
5. The movement that between the lines connects several figures has a specific philosophical meaning.

## Representation

The Parthenon was built in Athens between 447 and 432 BC. Phidias sculpted on it a frieze in low relief, about 160 m (525 ft) long and 1.05 m (3.45 ft) tall. Experts see it as a representation of the great Panathenaic procession, a celebration in honour of the goddess Athena.

The action begins at the rear of the Parthenon in the western section; it continues along the northern and southern friezes and ends at the eastern frieze. Scenes of the preparations on the western wall are followed by impressive rows of knights on the northern and southern walls. Further, we see the representation of the *apobatein*, during which a young soldier jumps from a running carriage, runs by its side, and then jumps back on it. Bearers of offerings, musicians, and animals for sacrifice come before the carriages. In the eastern section, action converges towards the centre, where the scene of the offering of the peplos to the goddess takes place. The gods of Olympus are seated to the left and right of this scene, followed by two groups of men and framed by the arrival of young women, the *Ergastines*, who have woven the peplos.

## The Motion Analysis

Looking closely at the frieze, we see a deep knowledge of both anatomy and movement analysis. The first example is the cattle in the southern frieze. Although parts of the frieze are missing, we see

<sup>4</sup> The tapestry (made, preserved, and displayed in Bayeux, Normandy, France) has more or less the same meaning as the Trajan's Column. It was probably commissioned in the 1070s by Bishop Odo of Bayeux and is in fact an embroidery, 50 cm by 70 m (20 in. by 230 ft) long. It shows the events leading up to the Norman conquest of England under the aegis of William the Conqueror.

<sup>5</sup> By Georges Sifianos. Images digitally processed from pictures of Sokratis Mavrommatis.

that every animal is a stage – a ‘key frame’ – of the movement of an animal that resists being tamed.

If we superimpose the animals, we get a beautiful animation that shows the strength of the struggling beast. Another example is in the eastern frieze in the representation of the gods Athena, Hephaestus, Poseidon, Apollo, Artemis, Aphrodite, and Eros. Individually, the gods have positions that reflect their identities: Poseidon holds a trident (drawn and now deleted); Artemis adjusts her clothes in a gesture reminiscent of an archer, etc. Looking at the same figures as a whole, we find that their arms are organized in a sequence through the key phases of an action that points to the right. From Athena’s relaxed position, we go to Poseidon’s anticipation, and gradually we reach the outstretched arms of Aphrodite. Moreover, if we shoot these figures frame by frame, we obtain coherent animation. The movement implicit in this sequence has an important meaning, since the arms point to the arrival of the procession, which is the subject of the frieze.

We see another example in the northern frieze. There, we see a structured use of the analysis of movement in the *apobatein* exercise.<sup>6</sup> The action is implicitly represented through distinct figures, although it is more spread out this time.

There are other places where motion analysis is used, each time for a precise reason. In the cavalry, for instance, horses do not follow the entire movement (as in the case of the cattle) but deploy a variety of postures in a succession according to a musical logic.

Elsewhere, as in the scene of the handover of the peplos, motion analysis provides fairly remote phases, so accurate in their attitude and perspective, though, that we can deduce the exact timing of the action.

In other places, there is movement that operates in two directions, following two actions that overlap but are carried out by the same figures.

Overlapping actions, anticipation, decomposition of movement, follow-up of harmonious action lines: All these things are common both to film animation and to the frieze.



Figure 2.2 Phidias’ Parthenon frieze.

## Music

What we have just discussed – the dual representation of both individual postures and implicit action – is a general principle of the dramaturgy of the frieze.

Another principle is the musical organization. Glancing at the frieze, intuitively, we look for the similarities. From the Gestalt psychology until cognitive science today, we know that the human brain seeks to establish correlations by examining the similarities. In the frieze, there is no movement in the sense of filmic *trompe-l’oeil*, but it is possible to identify the similarity of forms and establish associations. Via the similarities we create sequences between the lines, readable by a knowledgeable or simply attentive person.

<sup>6</sup> The analysis of the action is detectable despite the missing parts, and utilizing those known only from Jacques Carrey’s drawings, made before the bombardment of the Parthenon in 1687.

Analogy is the basis of music, too. The harmonic resonance of the octave is based on this very principle of proportional similarity of the frequencies of sounds. In the frieze, by resemblance, we bounce from one figure to another, and we do so in a rhythmic and melodic way, hence creating a harmony.

Just look at the frieze systematically: You will see that the development of the actions follows harmonic curves. Marey's chronophotography demonstrates that human or animal locomotion traces harmonic trajectories. This balance, in nature, is produced by a complex dynamism that is equivalent to the polyphony and to the counterpoint complementarity.

If we analyze the part of the eastern frieze with the gods (Figure 2.2), we realize that our glance is guided by a form, organized on several layers.

Large masses of bodies alternate profiles to three fourths; stools are rationally put in place; heads evolve in pairs responding one another; legs alternate a crossed position and a separated position; the abundant clothes drapery and the arms develop the main theme, responding in counterpoint to each other to form that significant gesture of indicating, suggested as an implicit meaning.

These groups are organized as 'sound', from the most bass (large bodies) to the highest one (the drapery of clothing). It is a polyphonic composition that commands the complementarity of counterpoint. The most surprising thing is that, according to most historians of music, the practice of counterpoint was developed from the ninth to the twelfth centuries, and that ancient music, in general, is considered to have been monophonic.

The mastery of a polyphonic composition with the use of counterpoint is also apparent in the overall composition which, furthermore, develops in space and not on a surface.

The procession begins in the western frieze in a random dissonance of preparations. It propels itself simultaneously in the northern and southern friezes, with the massive hammering of a cavalry divided into two unequal parades. The knights are a group, the carriages are individual subjects, but the procession always shows energy. Then, it softens in the serene and melodic representation of musicians and bearers of offerings, momentarily disturbed by the agitation of the animal sacrifice. Parallel and similar actions in

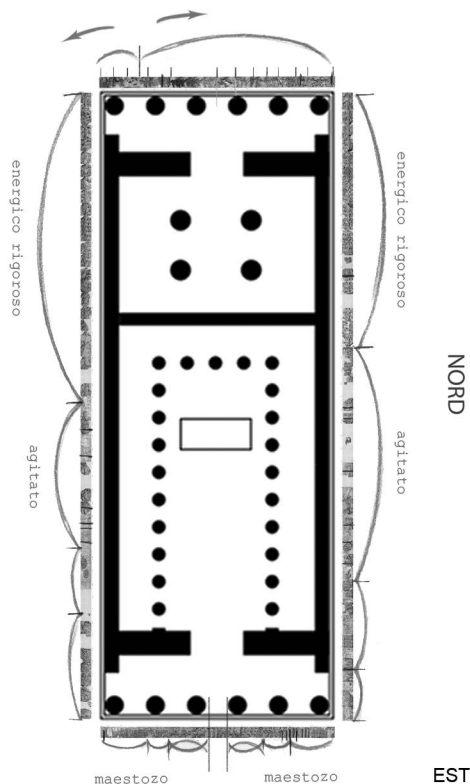


Figure 2.3 Phidias' Parthenon frieze.

the northern and in the southern wall respond to one another.

The procession synchronizes at the corners of the eastern frieze – and there and then it becomes solemn.

In the few notes that Aristotle wrote about music, he observed that nothing is more charming to the ear than 'the unity succeeding the diversity' (τὸ ἐκ διαφορῶν τὸ κοινὸν ἥδιστον). That synchronization of the overall composition around the eastern frieze corresponds to the form considered by Aristotle as pleasant. If we compare the organization of different segments, we find that they could be qualified as *energico con rigore*, *agitato*, *andante cantabile*, *maestoso*, etc.

Clearly the frieze is designed as a symphonic score as a whole and in detail. Georges Sifianos himself began the deciphering of this partition, and composer Ivan Boumans transcribed a fragment of the western frieze in music.

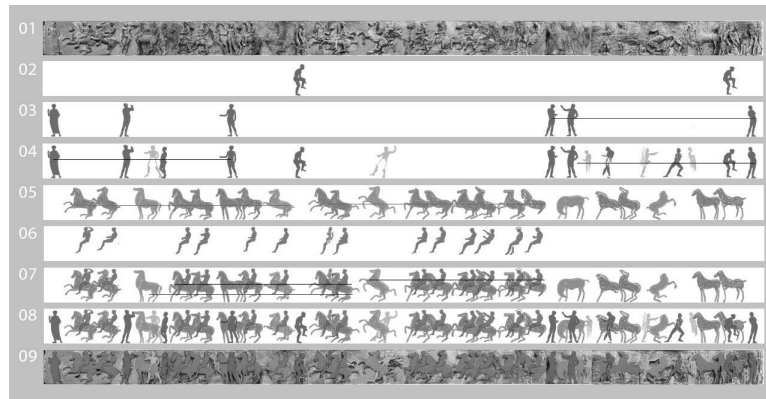


Figure 2.4 Phidias' Parthenon frieze.

## The Meaning of the Implicit Movement

At the time of the Parthenon, the debate of ideas was in an unprecedented blossoming. Philosophers such as Zeno, Anaxagoras, Protagoras, Gorgias, and Socrates were contemporaries to this construction; Parmenides, Heraclitus, Pythagoras, and/or Thales preceded it. Plato, Aristotle, and Epicurus were born later, but the foundations of their ideas were already taking shape. The dominant conception sees the cosmos as a perfectly harmonious entity. Hence, one's ethical duty was to seize this harmony and become one with it. The greatest evil, *hybris*, was excess: the rupture of the cosmic harmony.

The dialectical process of reasoning, which seeks the truth by comparing opposing views, was initiated at that time by Zeno of Elea. The synthesis of opposites comes from several philosophers, from the Pythagoreans ('music is a harmonious combination of opposites') to Heraclitus, and from Socrates' maieutics to the oxymoric proverb 'σπεύδε βραδέως' (more haste, less speed). In such a context, the analysis of motion in the frieze, and the representation of implicit actions, does not simply reflect a thorough knowledge of the movement in nature. It represents the thought of a society, a thought that works dialectically – i.e. by synthesis after a debate.

## An Object of Philosophy

The frieze shows a procession that every Athenian of the time witnessed or participated in. Set very high, it was hardly visible. But we know that the principle of our current society of communication 'only the visible exists' was not valid at the time. The statues of the pediments were carefully completed on their backs, too, though the sculptor knew full well that the back would never be visible. To an ancient Greek, harmony was to be sought as a value in itself – regardless of its visibility or not. Rather than appearance (to look), truth mattered (to be). In the frieze, we see the dialectical functioning of Athenian society, not its image.

The frieze is a 'model' or a 'paradigm' that mimics such functioning. Rather than a metaphorical form, we have a metaphorical structure. The frieze is dialectic – thus necessarily polyphonic – and the audience is necessarily involved; it's a representation of the Athenian democracy and of its conception of the cosmos.

A structure developed on several levels – anecdotal, musical/plastic, philosophical – is made possible thanks to the analysis of the movement.

The rhetoric of the frieze, like the maieutics of Socrates, leads the viewer to draw his or her own conclusions. Phidias provides a beautiful score; it's up to the viewer to interpret the music and catch the meaning.