

## CINEMA MUSIC IN THE SILENT MOVIE ERA<sup>1</sup>

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**SUMMARY.** In the silent movie era, the tendency of using original music specially written for a certain motion picture was abandoned, probably due to its high costs, and the creation and use of musical collages of preexisting cultured and entertainment music was preferred instead.

The cinema musician, in his attempt to follow (R-Receiver) and illustrate (E-Transmitter) by musical accompaniment the cinematographic projections, encountered multiple problems specific to this preoccupation.

The success of this activity would depend on the optimal correlation of a number of general skills (intelligence, creativity, a developed emotional sensitivity, spirit of observation, visual memory etc.) and special artistic skills (rhythmic sense, melodic, harmonic, polyphonic, timbral, and inner hearing etc), on deepening the musical knowledge (both in theory and performance), as well as on certain extramusical skills (knowledge and intuition of the human psychology, psychological intuition, artistic emotion).

An inadequate musical theme, stranger to the action, could easily ruin the effect of the movie, stultifying the hero in his most dramatic moments, causing guffaws from the audience. The producers were quick to understand this danger, and consequently, a lot of movies were distributed together with lists containing suggestions about the musical fragments these were to be accompanied by.

The classic repertoire definitely represented a never-ending source of music in creating the collages. The careful study of successful works was an optimal method of identifying and selecting passages which could be universally applicable in various circumstances, just as the texts of many arias could easily be associated with certain thoughts and emotions.

The music of Verdi, Rossini, Wagner, as well as Tchaikovsky, Liszt or Beethoven was amongst the most frequently quoted in the motion picture theaters. By the diversity of the musical accompaniment, the motion picture theater of the first quarter of the century offered continuous musical education to the large audience.

**Keywords:** film music, silent movie, Lumière, *cinema*, pianist, organist, skills.

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In a slightly surprising way, most of the expert papers dedicated to film music are satisfied with the general and erroneous wording related to the date of the first cinematographic projection with musical accompaniment. In order to highlight this tendency, we are hereby annexing four quotations (the list could be much longer than this), taken out of relatively recent publications:

*“A key date in the history of the cinema is 28 December 1895, when a pianist apparently provided for the first time musical accompaniment for a film, in this case a series of shorts presented by the Lumière brothers at the Grand Café in Paris”<sup>3</sup>.*

*“A piano accompaniment for a film was said to be first heard in 1895 in France at one of the early presentations by the Lumière brothers”<sup>4</sup>.*

*“From the time of the first public demonstration of a Lumière Cinématographe, for which a pianist is said to have improvised an accompaniment, until today’s widescreen features with their multi-channelled, digitally recorded scores, there has always been music for the motion pictures”<sup>5</sup>.*

*“From the very beginning, there were probably musical accompaniments to films, though the first documented incidents were in 1895 and 1896 when the Lumière family screened some of its early film in Paris and London with musical accompaniment”<sup>6</sup>.*

### **Accompaniment Music and Its Beginnings**

The merit for first using musical accompaniment at a commercial cinematographic projection (November 1, 1895) indisputably belongs to the Sladanowsky brothers<sup>7</sup>.

The approximate 15-minute duration of the musical material would allow multiple repetitions of the 8 short movies (approx. 6 seconds/film) which made up the initial program created by the inventor Max Sladanowsky (1863-1939) and his brother, Emil Sladanowsky (1866-?), thus ensuring the entertainment throughout the replacement of the film reels, as well. Their projector was patented under the name Bioskop.

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<sup>3</sup> Brown, R.S., *Overtones and Undertones: Reading Film Music*, Univ. of California, Berkeley, 1994, p. 12.

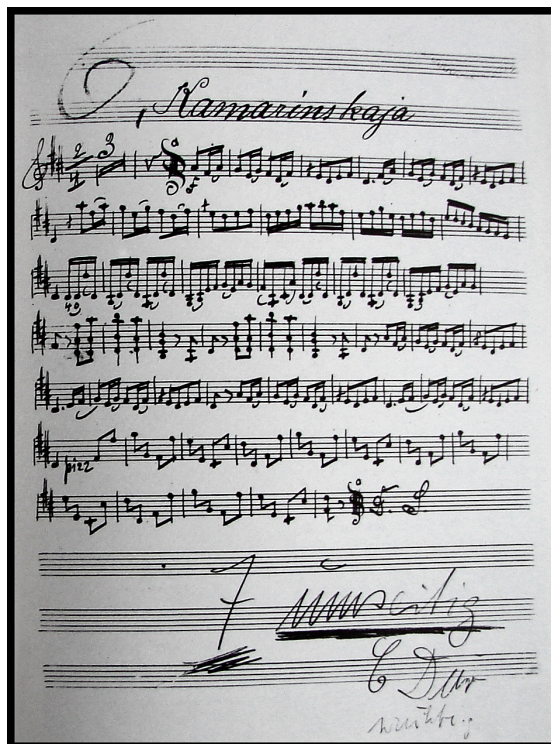
<sup>4</sup> Limbacher, J.L., *Film Music: from Violins to Video*, Scarecrow Press, New Jersey, 1974, p. 13.

<sup>5</sup> Marks, M.M., *Music and the Silent Film, Contexts and Case Studies, 1895-1924*, Oxford Univ. Press, New York, 1997, p. 3.

<sup>6</sup> Davis, R., *Complete Guide for Film Scoring*, Berklee Press, Boston, U.S.A., 1999, p. 17.

<sup>7</sup> *Musique et Cinéma Muet*, Editions de la Réunion des Musées Nationaux, Paris, 1995, p. 24.

Fig. 1



This is a page of the part for the violin. On the first page of each orchestra, material there is the following remark imprinted: Sladanowsky Bioskop<sup>8</sup>.

Although Louis Lumière (1864-1948) declared, in an interview given to Georges Sadoul, on 24 September 1946, that: *"I am a music lover, I attended the courses of the Conservatory in Lyon and I received the second mention in piano"*<sup>9</sup>, the projections during the first weeks (beginning with December 28, 1895) and even during the first months of the Lumière theatre did not have any musical accompaniment. Numerous contemporary descriptions indicate the presence of a commenter, who would present each movie, but they all fail to mention the presence of the musical accompaniment<sup>10</sup>.

<sup>8</sup> Idem, p. 25.

<sup>9</sup> Sadoul, G., *Louis Lumière*, Ed. Științifică, Bucharest, 1966, p. 109.

<sup>10</sup> *Le Radical* - December 30, 1895, Paris; *La Poste* - December 30, 1895, Paris; *La Chronique* - March 2, 7 and April 4, 1896, Bruxelles; *L'indépendance Belge* - March 2, 1896, *L'Etoile Belge* - March 2, 1896.

The *Lumière Institute* did not provide us with satisfying evidence in this respect<sup>11</sup> (a service provider agreement entered into by the Lumière brothers and the alleged pianist or musicians, or any information relating to the musical fragments played, photos, manuscripts, sheet music, etc.).

Fig. 2



The first advertising poster apparently presented at the end of 1896, which, beside mentioning the program and alerting the public against the gross imitations of Lumière's cinematograph, was also announcing the participation of the composer-pianist Emile Maraval. For this show, the musical accompaniment was executed on a Gaveau piano.

Until 1905, commercial spaces, old theatres had been rented out in order to be turned into motion picture theatres (named Nickelodeon) in almost every big city in America and Europe. In order for the experience to become even more profound, the images were accompanied by pianists. The exclusive cinemas employed the services of string trios or even chamber orchestras. Thus, the era of the movie soundtrack had begun.

<sup>11</sup> We have personally requested it by electronic correspondence, which has been especially formulated for this purpose.

### The Motion Picture Orchestra

In Great Britain and the United States of America, the cinematographic shows were initially organized in *music-halls*, which would host famous theatre orchestras.

At the *Empire Theatre* (located on the northern side of Leicester Square, London), where Lumière's Cinematograph premiered on March 9, 1896, the orchestra conductor was George Byng. At *Alhambra Theatre* (located on the east side of Leicester Square, London), where the British cinematography pioneer, Robert W. Paul (1846-1943) was competing against the Lumière brothers with his *Animatographe* (as of March 25, 1896), the musical director was Georges Jacobi. "We can easily imagine that these two theatres musicians had no problems whatsoever, considering their experience in adapting the accompaniments to the genres of the themes presented on the screen"<sup>12</sup>.

In his book entitled *Tours de manivelle*<sup>13</sup>, Felix Mesguich, the operator of Lumière's Cinematograph, describes the atmosphere at the premiere in the United States of America in the tiniest details. "I am making the first projecting attempts in Koster & Bial's Music Hall in New York (other sources<sup>14</sup> cite that this is in fact an error, and they indicate the *Union Square Theatre* in New York as the actual location) before an audience formed of a few local authorities – the director and the conductor – I first unroll the opening program. In this environment, which is actually used to not getting too easily impressed, surprise and enchantment occur. The next day (June 18, 1896), I make direct contact with the American public. Each tableau is accompanied by a storm of applause. Once the projections are over... I am carried, in triumph, on the stage and introduced to the audience. The orchestra is playing the *Marseillaise*".

In 1908, two composers received an order to compose original music for prestigious motion pictures. On October 15, the movie *Stenka Razin* premiered (duration: 10 minutes), produced by the Drankov Company in Moscow, directed by Vladimir Romashkov, based on a script by Vasili Goncharov and accompanied by an original musical score signed by Mikhail Ippolitov-Ivanov (1859-1935), created in such a manner that it allowed various interpretation possibilities. It was either sung by a human voice, or played on the piano, or by an orchestra, or rendered by a gramophone. The Parisians had the opportunity to watch the following month (November 16) the motion picture entitled *The Assassination of the Duke of Guise*<sup>15</sup> (duration: 15 minutes), directed by André Calmettes and Charles Le Bargy, based on a script by Henri Lavedan. The original music in five tableaux (op.128 for strings, piano and harmonium) belongs to the famous French composer Camille Saint-Saëns (1835-1921). The *Film d'Art*

<sup>12</sup> *Musique et Cinéma Muet*, quoted work, p. 28.

<sup>13</sup> Mesguich, F., *Tours de manivelle*, Ed. Grasset, Paris, 1933.

<sup>14</sup> Sadoul, G., quoted work, p. 146.

<sup>15</sup> Original title: *L'assassination du Duc de Guise*.

Company that produced this motion picture was founded in January 1908 by Paul Lafitte, with the purpose of executing the images and the scenes meant for the motion picture projection, with the help of renowned artisans. Projected in silence, this motion picture seems to confirm the criticism passed on it: excessive scenery, static camera, emphatic acting. However, music integrates the acting of the actors in order to create an imitation regime which is entirely original, rhythmical, elegant, and psychologically expressive. However, probably due to high costs, this tendency (of using original music specially written for a certain motion picture) was abandoned, and, instead, the creation and use of musical collages of pre-existing cultured and entertainment music was preferred.

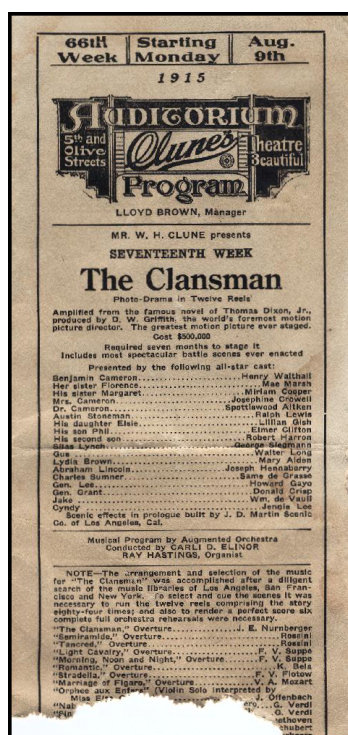
The musical director of a luxury theatre was responsible both for staging, as well as for the success of the cinematographic show. Selecting and managing the orchestra, as well as choosing and processing the musical material, which would accompany the projected images, were part of his duties. Pierre Millot, the musical director of the Mogador Theater (located in the centre of Paris, Rue de Mogador no.25) explained his working technique: *"I generally watch the movie twice. Firstly, I am satisfied just to watch it, in order to understand it in the smallest of details. At the second projection, I time it with exact precision, determining the quality of certain scenes. I decompose the film into sad parts, funny parts, sentimental, and tragic parts, and I make a note of the nuances and the precise places where each section begins and ends. When this preliminary work is finished, all that I have to do is to carry out the most delicate of tasks. I search my library for fragments which are suitable to the passages and which are susceptible to fill them, emphasize them, and underline them"*<sup>16</sup>. Millot did not compose any transition phrases, he identified the most appropriate moments in order to cut and subsequently join the various musical fragments in such a manner that the finite musical product resulted from these multiple operations would coincide with the temporal frame and the character of the projected film.

The daily routine of the motion picture theatres would drastically limit the number of rehearsals. In most of the cinema halls, one rehearsal was allowed a week (either by the trade union, or by the management), with a duration which would vary between two hours and a half and three hours. Within this relatively short period of time, the overture needed to be rehearsed (which was considered to be the crucial point of each cinematographic show), the show accompaniment and the synchronization of the music with the motion pictures would be checked to see whether it was indeed ideal (whether the duration of the music would correspond in full with the duration of the film. More than often, the adjustment of the projector would be practiced, modifying a little the rolling speed of the film reel). *"If you do not dispose of a very good orchestra, then the only way to obtain an honest result is to rehearse nothing*

<sup>16</sup> A conversation with Pierre Desclaux, Source: *Almanach de Mon Ciné*, Paris, 1927.

but the most important moments and to adjust the rest during the performances. In order to do this, the orchestra conductor and the instrumentalists need to get along very well<sup>17</sup>, highlighted Ernő Rapee (1891-1945), an eminent cinema musician – and American pianist, conductor, and composer of Hungarian origin.

Fig. 3



Although the musical performance of the orchestras represented a real attraction at these cinematographic shows, it was very seldom that any information about the musical material to be performed was included on the advertising poster.

A notable exception is certainly represented by “*The Clansman*” movie poster, known today to the wide public as the “*Birth of a Nation*”, by director D.W. Griffith, made in 1915. Beside the complete cast and the announcement of the participation of the organist Raz Hasting together with the orchestra entitled *Augmented Orchestra*, under conductor Carli D. Elinor’s baton, it let the audience know that the arrangement and the selection of the music for the picture had been completed after industrious research in the music library in Los Angeles, San Francisco and New York. In order to select the right music for each particular scene, it was necessary to watch the picture (namely the 12 film reels) 84 times; also, in order for the interpretation to be ideal, 6 orchestra rehearsals were necessary. Next, the poster enumerates all the musical pieces, which were going to be performed: beside the overture signed by J.E. Nurnberger, the audience could enjoy fragments composed by Rossini, von Suppé, Flotow, Mozart, Offenbach, Verdi, Beethoven, etc.

### The Cinema Pianist and Organist

While within the great urban cinemas, the ambitions and the musical sophistication were reaching new heights, the conditions in the theatre halls located in the provinces, as well as in the suburbs were extremely precarious. The musical accompaniments were rare in the first ten years of the 20<sup>th</sup> century, most frequently provided by a pianist, or occasionally by a violin player or a percussionist, and the complaints would flood the professional press of that period, signalling inadequate themes, unadjusted music, un-tuned instruments, precarious performance etc.

<sup>17</sup> Rapee, E., *Encyclopedia of Music for Pictures*, Ed. Belwin, New York, 1925.

Fig. 4



A cinema organ in the “Wurlitzer Unit Organs” series created to replace the symphonic orchestra. It is the invention of an electrician and amateur organist, Robert Hope-Jones (1859-1914). Between 1887-1911, he built several models (approximately 246 instruments) both for churches (controlling, with the help of electric current, the air pressure in the pipes and the closing and opening of valves), and for motion picture halls. In April 1910, Hope-Jones became associated with the *Rudolph Wurlitzer* company in order to manufacture (under his direct supervision) on a large scale, several organ models. Until 1927, over 60 companies were in the business of manufacturing organs of this type throughout America, and the total production reached approximately 2,500 instruments a year.



Gradually, the cinema organ came to be predominantly used in most of the motion picture theatres possessing more humble financial means (especially those in the province). It had been invented and produced with the certain purpose of imitating the expressivity and the timbre variety of symphonic orchestras, which accompanied the silent period films in the select motion picture theatres.

Thus, particular attention was given to the use and conscious combination of different registers of the same instrument, this being considered a new means of mirroring and awareness in the mind of the receiver (the audience) of a psychological frame of mind. Different registers of the organ would be used, in most of the cases, separately (tongues, brasses, wood) and not over combined; in most cases, a solo instrument with accompaniment would be preferred (for example, *solo flute 4'* + *string/harp* accompaniment for romance; *clarinet* + *string* accompaniment for suspicion, *oboe* + *string* accompaniment for temptation, etc.). The music had to vitalize the action on the screen, without however absorbing the attention or the hearing of the spectator. Thus, *Full Organ*, as a sonority, would be used only in special situations (the moment of victory, etc.), and, preferably, only once during the projection.

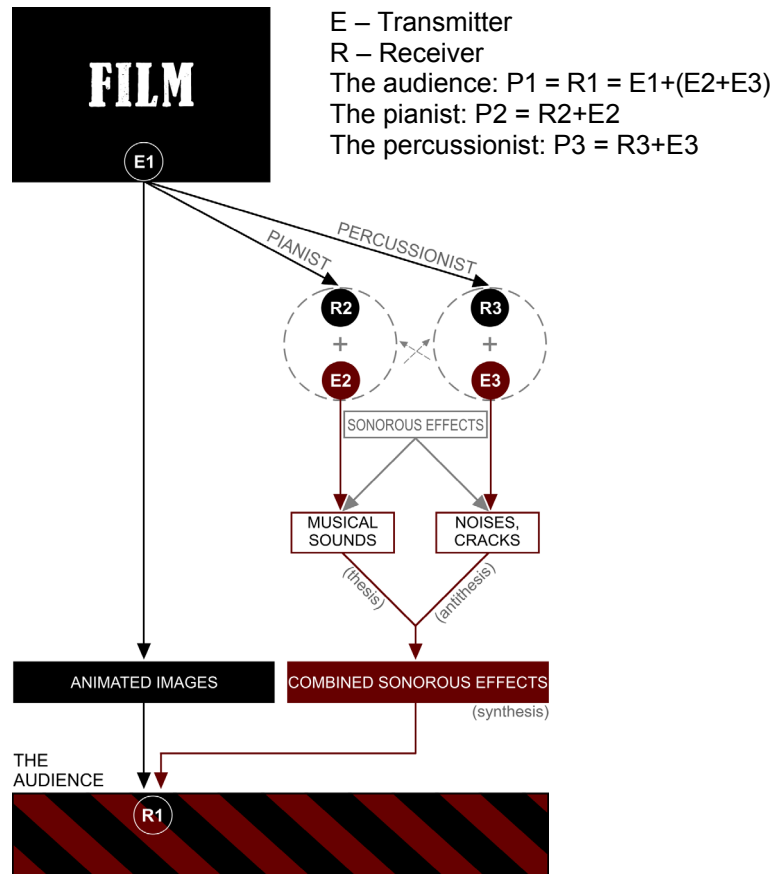
W. Tyacke George, a forerunner in his attempt to approach the musical accompaniment based on methodical principles, was lamenting, in 1912, over the general state of the moving picture soundtrack in that period. He was saying that the most amazing aspect of the entire "business" was that after the theatre hall owners had spent enormous amounts of money in order to buy magnificent places and top-class equipment, they would jeopardize the success of the show by employing a musician worthy not even of a tavern of the lowest class. *"Up to the present moment, this industry has failed in attracting musicians of a certain calibre because of the embarrassing nature of the work and of the small wages. Nevertheless, as soon as every theatre director realizes the necessity of ensuring the best music, the conditions can only improve, and the unexpected results, which will follow from this, will manage to persuade the people of the interest of such an alliance... We hope that one day will arrive when music will have finally found its rank within the cinematographic industry."*<sup>18</sup>

The cinema musician, in his attempt to follow (R-Receiver) and illustrate (E-Transmitter) by musical accompaniment the cinematographic projections, encountered multiple problems specific to this preoccupation.

Most certainly, the success of this activity would depend on the optimal correlation of a number of general and special (artistic) skills, on deepening the musical knowledge (both in theory and performance), as well as on certain extra musical skills.

<sup>18</sup> George, W.T., *Playing to Pictures: A Guide for Pianists and Conductors of Motion Picture Theatres*, Kinematograph Weekly, London, 1912.

Fig. 5



**The Optimal Correlation of Certain General and Special (Artistic) Skills**

The general skills are necessary for any musical activity. The intelligence (the process of assimilating and processing the variable information received) and the creativity (the constructive imagination to create new and different forms) are the most important human features, which the motion picture musician needed to be endowed with. The intention was not to synchronize music and affection in a perfect manner; the basic function of the accompaniment music was to capture the general atmosphere of the film. Thus, a developed emotional sensitivity came to help the performer in creating, reflecting and becoming aware of an adequate musical atmosphere in the mind of the audience, of an emotional state, which was in tune with the theme of the action on the screen.

The spirit of observation allowed him to identify and neglect the subsidiary details to the benefit of the key elements of the movie. The visual memory helped in developing the ability to anticipate, thus allowing the music to be one fraction of a second ahead of the images, and their optimal junction took place in the important moments in the movie. Memorizing, in full, different music scores, supplied the musician's "mental shop" with a considerable stock of motifs, phrases and periods adaptable to various basic emotional states specific to the human nature, in order to be able to employ them at any time, being ready and reacting promptly in emergency situations.

Musical skills may be grouped into

- Basic skills (indispensable to the musical activity): rhythmic sense, melodic hearing, inner hearing;
- Secondary skills (which complete the primary nucleus and which are necessary in order to experience music professionally): timbre, harmonic, polyphonic and dynamic hearing;
- Specific skills (necessary to develop a certain type of activity): creation, instrumental, vocal or conducting performance<sup>19</sup>.

#### **Thorough Musical Knowledge (Theoretical and Interpretational)**

The Wagnerian "*leading motif*" (*das Leitmotiv*) has had a tremendous influence on the evolution of the movie soundtrack, becoming the primordial element in the musical illustration of motion pictures, under the name of *main theme*. With an emotional attraction, being easily recognizable, allowing various treatments and subsequent developments, its basic role was the individualization of the main character. It was presented at the beginning of the movie, stressing, emphasizing from its very first moment the personality of the character it was connected to, and it reached the culminating point at the end of the movie. The sonorous identification and particularization of the space (anthropological – geographical), as well as the depiction of the supporting characters (with a decisive role in the action's finale), was also achieved with the help of representative musical themes which were carefully selected.

An inadequate musical theme, stranger to the action, could easily ruin the effect of the movie, stultifying the hero in his most dramatic moments, causing guffaws from the audience. The producers were quick to understand this danger, and consequently, many movies were distributed together with lists containing suggestions about the musical fragments these were to be accompanied by.

Although the fundamental requirement for this profession was not musical creation, the cinema pianist and organist certainly needed to possess thorough theoretical-applicative knowledge which would allow them, in the

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<sup>19</sup> Gagim, I., *Psycho-pedagogical and Musicological Foundations of Music Education, a scientific report*, Chişinău, 2004, pp. 25-26.

first place, to identify the structural typology (either typical or atypical) and the tone frame of a given theme, in order to subsequently treat the same theme. This is what we mean, to be more exact:

- The addition or subtraction of the theme: on the level of extension (which maintains, however, the bi-phrase symmetry of the antecedent phrase and consequent phrase type) or on the level of contents within the phrases (asymmetric or atypical period);

- Modulation through structure: according to the morphological unit by which it is operated, differentiating between motif and phrase modulation, both achievable by transposition, cellular-motif evolution, transposition with the exchange of functional relations;

- Transposition: the logic tonality change has been (and still is) an efficient method of creating a contrast. Even if the majority of performers prefer or avoid certain tonalities, it was not recommended to use tonalities only with sharps or flats at the armour for too long;

- Tempo change: special attention was given to cultivating the taste and the sense of matching in the temporal adaptation of the musical material to the projected images;

- Rhythmic variations: punctuated rhythms, interposed by pauses, rhythm augmentations and diminutions, exceptional division of values, etc.;

- Metric variety: the reorganization of the periodic succession of accented and unaccented beats;

- Improvisation: *“There is great number of pianists who boast of the fact that they can improvise throughout the duration of a motion picture and, by this, they claim to be getting to a superior result than the one provided by any written music. This makes no sense at all. Certainly, it is possible for someone, in a moment of inspiration, to find something that corresponds to the atmosphere of the picture projected before their eyes, but they shall find themselves compelled to repeat their ideas so often that their music will not be able to avoid degenerating into the saddest monotony”*<sup>20</sup>;

- Transition: never expected, abrupt, only if a certain effect was wanted, of discontinuity, etc.

In the practical manual written for motion picture pianists and organists entitled *Musical Accompaniment of Moving Pictures*<sup>21</sup>, we have discovered a representative example of the multiple development possibilities applicable to a certain musical period, and which expresses a large range of the main character's psychological states (of the female gender, in this case), as well as some ideas of how to apply these variants directly, in the various key moments of a moving picture.

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<sup>20</sup> George, W.T., quoted work.

<sup>21</sup> Lang, E. -West. G., *Musical Accompaniment of Moving Pictures*, The Boston Music Company, Boston, 1920, pp. 8-12.

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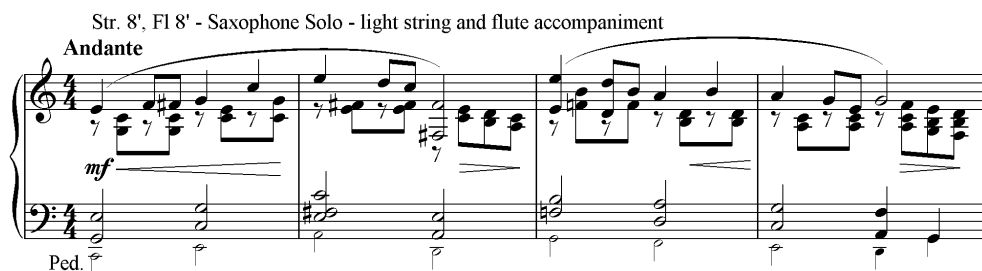
Let us offer an overview of the structural typology of this theme:

Fig. 6A



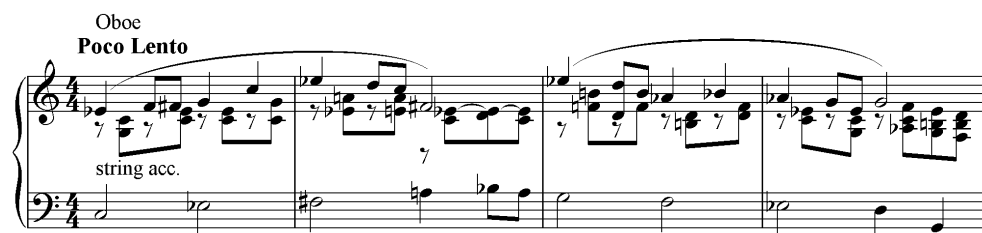
It is a typical, two-phrase period, 4-measure subtractive, the antecedent and the consequent phrase consist of two rhythmic-melodic motifs, crusic (phrase a =  $\alpha + \beta$ , phrase c =  $\alpha_{\text{varied}} + \beta_{\text{varied}}$ ) which, in their turn, consist of rhythmic-melodic cells x, y and their variants.

Fig. 6B



If musical example 6B illustrates the female hero in regular circumstances, her appearance under emotional stress or in pain might be characterized by interpreting the theme into a minor tonality, such as:

Fig. 6C



In a moment of faltering, doubt, or when faced with having to make an important decision, the heroine might be characterized by the fragmenting of the theme, introducing pauses in the following manner:

Fig. 6D

Light reeds - one manual  
**Moderato**

*sfz sfz sfz mf f risoluto sfz*

Her restlessness might be illustrated, by accelerating the tempo (*Allegretto*) and by diminishing the durations; if this state has a pleasant cause, the theme will be rendered in a major tonality:

Fig. 6E

Flutes 8', 4'  
**Allegretto**

*mp mf*  
 Harp accompaniment

In addition, if her restlessness is caused by worrying or fear, the tonality will be minor again, and the tempo *Agitato*:

Fig. 6F

Str. 8', Fl. 8', 4', Bassoon 16' (Oboe on 16' coupler)  
**Agitato**

*p misterioso*  
 Strings

The attention must be drawn to the manner in which these multiple theme aspects are treated with respect for registers and accompaniment. They offer a great variety, which may be perfected by common sense handling. Only a few basic emotional situations (spiritual states) have been illustrated in the aforementioned examples. A developed psychological intuition allowed numerous possibilities. The performer took into consideration the thematic differentiation upon every occurrence during the picture, so that these new aspects would intensify the attraction of the theme. An efficient variation method may be achieved by placing the melody in the grave tonality (inferior) and decorate it with arpeggios in the acute tonality:

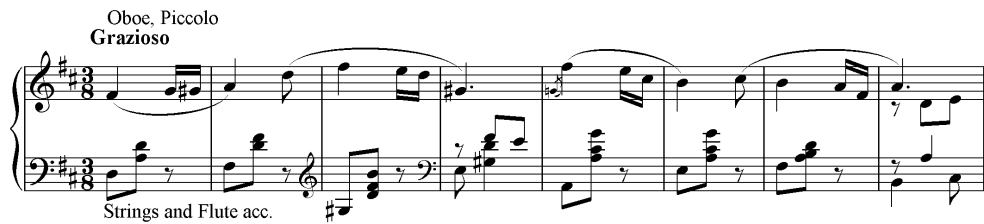
Fig. 6G



With the 6G example we can illustrate scenes where the hero is presented in a meditative state (the subject of this meditation is, of course, the heroine). On the other hand, when he is reading a letter received from her; in other words, when the heroine is not physically present on the screen, but her thoughts are involved in the plot of the picture.

The character of the theme may fundamentally alter by reorganizing and including it in the simple 3/8 ternary beat, conferring it luminosity, buoyancy, ease.

Fig. 6H



This type of treatment matches the scenes where the heroine appears in pleasant and happy circumstances, or even when she is dancing.

On the other hand, a theme initially presented in 3/4:

Fig. 6I



may “weigh” more and gain in importance, if reorganized in 4/4, thus:

Fig. 6J

Full Organ  
Maestoso

*f* *ff cresc.*

A great emotional intensity can be suggested by including the theme within the composed 9/8 ternary beat:

Fig. 6K

Strings 16', 8', 4', 2' - both hands on the same manual  
Largo, ma non troppo

*mf* *f*

In case the action takes place within a recurrent and well-defined location, its recurrence should always be announced by the same musical theme. Moreover, here, the variety is that of the essence. The image of a garden on a sunny day might be illustrated (using the same thematic material) in the following manner:

Fig. 6L

Flute 4'  
Un poco vivace

*mf*  
Light strings

The same location wrapped in diffuse light, which spreads before sunrise or after sunset, might determine the following handling of the musical theme:

Fig. 6M

Vox humana - both hands same manual  
Placido

*p tutto legato* *poco cresc.*



All the aspects of the musical period presented above (Fig. 6A-M) were subject to interpretation by changing the registers of the organ, but, in order to identify the optimal timbre colour for a certain special character or emotion, the performer definitely needed an educated aesthetic thinking and a lot of experience.

But the cinema musician's problems have not always been related to the aesthetic choice. When the waiting lines outside the theatres were getting longer, the projectionist was usually asked to shorten the duration of the picture by different technical manoeuvres, and thus, the temporal frame of the pianist/organist might fluctuate from one projection to the other.

The performance process has been made difficult by the specific conditions of this profession. In the theatre halls, the only source of light came from the direction of the projector, and the eyes of the performer were fixed on the screen, for as long and as constantly as possible. These performances were nothing like a piano or organ recital in the concert or church halls. In these small rooms, theatrical music was being supplied for a theatrical production, in "counterpoint" with the strong background noise (produced by the projector which would usually be placed in the centre of the hall) and with the infernal hubbub which came from the audience reacting spontaneously and noisily to the development of the story on the screen. Even under these circumstances, nothing could have been more boring and impracticable than monotony (the homogeneity of execution), there where, on the contrary, variety and individuality were essential, without however interrupting the musical continuity.

### **Extra-musical Skills**

Knowledge and intuition of the human psychology – the performer needed to assess, carefully appreciate their audience, location, etc. (and the necessities would vary from one theatre hall to another), and to select their repertoire quite meticulously.

Psychological intuition – the plot of the motion pictures in the majority of the cases was the same, and what varied was the development of the action, but in a restricted manner. The psychological states, the fundamental emotions, as well as the reporting of the events needed to be thoroughly studied by the performer so that they could become able to recognize these emotions and states and to render them in the development of the music.

Given the fact that the actor was lacking the possibility to speak, he would show his emotions by face acting, a look or a smile, and, consequently, it was the pianist who needed to have the ability to read facial expressions.

Artistic emotion did not happen unless in connection with inspiration, passion and constant interest manifested by the performer in this activity. Even so, a musician needed a lot of practice and experience in order to develop his own accompaniment style.

In his book entitled *Motion Picture Making and Exhibiting*<sup>22</sup>, published in 1914, John B. Rathbun alarmingly disregarded the work and effort of cinema musicians, asserting that:

*“Almost any city or town is capable of producing a performer or a pianist to accompany the projection of a motion picture, at a moderate price. The salary for these people varies considerably, that is for sure, depending on how big the city or town is, or on the available local union agreements, but it ranges between \$1-3 a night. When the “orchestra” is supplemented by a percussionist, he shall receive the same wages as the pianist, unless otherwise provided by the union agreements. An automatic piano or an orchestration may be rented or bought, thus efficiently reducing the expenses in the small theatre halls. In certain situations, these instruments can provide the music during the projection, and the pianist may take over other obligations related to the show, such as selling tickets or showing the spectators to their seats. It is a frequently practiced situation, especially when the manager also undertakes the role of the pianist. The automatic mechanism is also very useful in the situations where musicians fail to show up”.*

Gradually, the shops (transformed into motion picture theatres) gave way to the big halls specially built for the motion pictures, and the press of the professional cinematography started to publish regular columns dedicated to the musical accompaniment techniques.

### **Repertoire – the Interrelation between the Covered Musical Fragments**

Silent movie musicians were often blamed for lacking creativity and aesthetic perspective in their selection and mixing process (without too much discernment) of the different musical fragments (that they used in the accompaniment of the projected motion pictures). The repertoire would consist of a multitude of fragments of classical music, entertainment music, ethnic music, etc, which could easily be joined with the scenes in the pictures, being able to transmit and to awake certain emotions and fundamental emotional states, specific to human psychology. Musical fragments associable to different events such as: baptism, wedding, funeral; the special seasons of the year (Easter Holidays, Christmas, New Year’s), patriotic exercises, military parades, as well as sailing songs, college songs, church hymns etc., also needed to be at the performer’s disposal.

The classic repertoire definitely represented a never-ending source of music in creating the collages. The careful study of successful works was an optimal method of identifying and selecting passages, which could be universally applicable in various circumstances, just as the texts of many arias could easily be associated with certain thoughts and emotions.

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<sup>22</sup> Rathbun, J.B., *Motion Picture Making and Exhibiting*, Thompson Publishing House, Chicago, 1914, pp. 113-114.

#### CINEMA MUSIC IN THE SILENT MOVIE ERA

The music of Wagner, Verdi, Rossini, as well as Tchaikovsky, Liszt or Beethoven was amongst the most frequently quoted in the motion picture theatres. Pierre Millot, as the new musical director of Paramount in Paris, confessed that, in his adaptation for the movie *Hotel Imperial* (1927), directed by Mauritz Stiller, based on a script by Lajos Biró and Jules Furthman, he used almost the entire 5<sup>th</sup> Symphony by Beethoven, as he considered that, amazingly, Beethoven's music naturally adapts itself to dramatic creations.

It is a certain fact that, by the diversity of the musical accompaniment, the motion picture theatre of the first quarter of the century offered continuous musical education to the large audience. As an edifying example in this respect, here below is the impressive list<sup>23</sup> of "overtures" performed between January 6, 1918 – July 31, 1921, at the beginning of each performance (4 performance a day, 7 days a week), by the orchestra of the Rialto Theatre in New York, under the baton of conductor / theatre director Hugo Riesenfeld (1879-1939):

#### 1918

06 ian	von Suppé – <i>Pique Dame</i>
13 ian	Wagner – <i>Lohengrin</i>
20 ian	Goldmark – <i>Queen of Sheba</i>
27 feb	Wagner – <i>Tannhäuser</i>
03 feb	Liszt – <i>Symphonic Poem No.3</i>
10 feb	Rimsky-Korsakov – <i>Capriccio Espagnol</i>
24 feb	Goldmark – <i>In the Spring</i>
03 mar	Tchaikowsky – <i>Capriccio Italien</i>
07 apr	Tchaikowsky – <i>Romeo and Juliet</i>
21 apr	Verdi – <i>Aida</i>
28 apr	Liszt – <i>Mazeppa</i>
05 mai	Rimsky-Korsakov – <i>Semiramide</i>
19 mai	Rimsky-Korsakov – <i>Sheherazade</i>
26 mai	Verdi – <i>Sicilian Vespers</i>
23 iun	Massenet – <i>Manon</i>
04 aug	Tchaikowsky – <i>Symphony No.4 (II-IV)</i>
11 aug	Verdi – <i>Rigoletto</i>
08 sep	Tchaikowsky – <i>Solonelle (1812)</i>
15 sep	Dvořák – <i>New World Symph. (II, finale)</i>
06 oct	Rimsky- Korsakov – <i>Capriccio Espagnol</i>
13 oct	Tchaikowsky – <i>Pathetique finale</i>
20 oct	Rossini – <i>Wilhelm Tell</i>
28 oct	Liszt – <i>Rhapsody No.2</i>
01 dec	Liszt – <i>Rhapsody No.6</i>
08 dec	Saint-Saëns – <i>Danse Macabre</i>
15 dec	Goldmark – <i>Sakuntala</i>

#### 1919

19 ian	Beethoven – <i>Leonora No.3</i>
26 ian	Liszt – <i>Rhapsody No.1</i>
09 feb	Tchaikowsky – <i>March Slav</i>
16 feb	Sibelius – <i>Finlandia</i>

<sup>23</sup> Anderson, G.B., *Music for Silent Films 1894-1929*, Library of Congress, Washington, 1988, pp. XXIV-XXVI.

AARON FAZAKAS

23 feb Gounod – *Faust*  
 02 mar Thomas – *Mignon*  
 06 apr Liszt – *Les Preludes*  
 13 apr Herbert – *Natoma*  
 20 apr Liszt – *Rhapsody No.2*  
 04 mai Balfe – *Bohemian Girl*  
 18 mai Tchaikowsky – *Romeo and Juliet*  
 01 iun Weber – *Euryanthe*  
 15 iun Mendelssohn – *Midsummer Night's Dream*  
 06 iul Liszt – *Rhapsody No.13*  
 23 iul Massenet – *Manon*  
 03 aug Weber – *Freischuetz*  
 10 aug Verdi – *Aida*  
 17 aug Saint-Saëns – *Spining Wheel*  
 31 aug Liszt – *Ideale*  
 21 sep Wagner – *Tannhäuser*  
 28 sep Tchaikowsky –  
 05 oct Rossini – *Wilhelm Tell*  
 12 oct Goldmark – *Sakuntala*  
 19 oct Verdi – *La Traviata*  
 16 nov Liszt – *Rhapsody No.6*  
 23 nov Tchaikowsky – *March Slav*  
 30 nov Weber – *Oberon*  
 14 dec Liszt – *In Vienna*  
 28 dec Liszt – *Rhapsody No.1*

**1920**

04 ian Wagner – *Rienzi*  
 15 feb Dvořák – *Carneval*  
 14 mar Mascagni – *Hymn to Sun*  
 11 apr Liszt – *Les Preludes*  
 18 apr Liszt – *Rhapsody No.6*  
 25 apr Mendelssohn – *Ruy Blas*  
 16 mai Tchaikowsky – *Capricio Italien*  
 23 mai Liszt – *Rhapsody No.2*  
 06 iun Wagner – *Tristan*  
 20 iun Massenet – *Phaedre*  
 27 iun Thomas – *Mignon*  
 04 iul Mendelssohn – *Midsummer night's Dream*  
 11 iul Rimsky-Korsakov – *Sheherazade*  
 18 iul Massenet – *Manon*  
 29 aug Goldmark – *Queen of Sheba*  
 05 sep Liszt – *Rhapsody No.4*  
 12 sep Verdi – *Aida*  
 19 sep Rossini – *Wilhelm Tell*  
 03 oct Wagner – *Tannhäuser*  
 10 oct Weber – *Euryanthe*  
 17 oct Tchaikowsky – *March Slav*  
 24 oct Wilson – *Overture*  
 31 oct Wagner – *Lorengrin*  
 07 nov Goldmark – *Sakuntala*  
 28 nov Liszt – *Rhapsody No.13*  
 05 dec Wagner – *Die Meistersinger*

CINEMA MUSIC IN THE SILENT MOVIE ERA

1921	
02 ian	Wagner – <i>Rienzi</i>
06 feb	Elgar – <i>Pomp and Circumstance</i>
13 feb	Tchaikowsky – <i>1812 Overture</i>
20 feb	Liszt – <i>Les Preludes</i>
27 feb	Weber – <i>Freischuetz</i>
20 mar	Liszt – <i>Rhapsody No.1</i>
27 mar	Liszt – <i>Ideale</i>
03 apr	Rossini – <i>Barber of Seville</i>
10 apr	von Suppé – <i>Poet and Peasant</i>
17 apr	Liszt – <i>Rhapsody No.6</i>
29 mai	Liszt – <i>Rhapsody No.2</i>
19 iun	Gounod – <i>Faust</i>
26 iun	Massenet – <i>Phèdre</i>
10 iul	Auber – <i>Masaniello</i>
17 iul	Verdi – <i>La Forza del Destino</i>
24 iul	Massenet – <i>Manon</i>
31 iul	von Suppé – <i>Beautiful Galatea</i>

In an interview in 1913, the magnate Adolf Zukor (1873-1976), the founder of the *Paramount Pictures* corporation (1912), predicted a near future where, in theatres of the size and splendour worthy of a palace, the works of the most famous authors would be shown on a huge screen, to an audience of 5,000 people, while the orchestra consisting of approximately 75 musicians would play adequate music, which would embrace every moment of the plot and every emotional nuance. And indeed, in the second decade of the century, the great American theatre halls (such as *Roxy Theater* in New York, a hall with a 6,000 seat capacity) were able to take pride for the fact that during every season of the year they had an orchestra consisting of over 70 musicians at their disposal.

The contemporary entertainment music also entered into the musical repertoire performed in the theatre halls. At the weekly projection of the political or sports news, received from every corner of the world, the cinema musician would play the state hymn of the corresponding countries, also including in the program various representative ethnic music.

The production and distribution companies, being aware of the damage that inadequate music or poor quality music could do to the projected motion pictures, started to publish, in the newspapers and the professional magazines, musical suggestions for the films they were producing. *The Edison Kinetogram*, in its American and British edition, would regularly publish this kind of advice, starting with the year 1919. In the first stage, the suggestions tended to indicate more a musical style for each motion picture, and much more seldom did they incline towards concrete musical compositions.

As the motion pictures became longer and more complex, a desire to impose a sonorous illustration as efficient and as impressive as possible, but uniform at the same time (in all the cinema halls), something called *Cue*

*Sheets* would be compiled for each film. These documents (which came directly from the production companies or which were put together by independent specialized editors), contained all the musical quotes that they wanted to have included in the accompaniment of the corresponding motion picture with a detailed cue sheet, which would very precisely indicate the moment of start and the duration of the intervention.

The quality of many cue sheets was often challenged in the specialty press; consequently, around 1926 it was even suggested that a central committee should be established with the purpose of setting and maintaining the level and quality of the published musical suggestion lists<sup>24</sup>.

The use of these cue sheets meant that the musical director or the cinema pianist had access to a considerable repertoire. In order to solve this need, a vast industry of editing music collections meant for the motion pictures was created and developed between the years 1914-1929<sup>25</sup>. These compilations (consisting of a lot of musical pieces and well-known classical fragments) included indications of atmosphere and descriptive music for most of the situations. In some of them, there were musical recipes even for the scene of the first kiss.

According to *The American Organist*<sup>26</sup> publication, Hugo Riesenfeld's personal library consisted of 6,000 general music scores and thousands of songs in un-orchestrated form.

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<sup>24</sup> In England, *The Cine Music Directors Association* (C.M.D.A.) decide in 1928 to undertake this role.

<sup>25</sup> The most significant music collections meant for the cinema were published in the **USA**: *Folio of Moving Picture Music* by J.H. Remick; *Sam Fox Publishing Company* in Cleveland and Paris; *Descriptive Series* by S.M. Berg; *Photo-Play Series* by G.Schirmer; *Incidental Symphonies* at Belwin Inc.; *Red Seal Concert Series* by Robbins-Engel; *Motion Picture Music* by Geo H.Sanders Co.; *Loose Leaf Kinomusic Collection* and *Loose Leaf Film Concert Collection* by Emil Ascher; *Dramatic Octavo Series*, *Novelty Octavo Series*, *Photo Play Dramatics*, *Film Characteristics* and *Clasic Concert Series* by Irving Berlin Inc; *Capitol Photoplay Series* by Robbins Music Corporation. **England**: *Photo-Play Series* by Hawkes & Sons; *Lafleur Motion Picture Edition* by J.R.Lafleur; *Loose Leaf Film Play Music Series* by Bosworth & Co; *Cinema Library* de Chappell & Co. **Germany**: *Film Illustrationen für Salonorchester* by Albert Schaper; *Film Illustration*, *Capitol Serie*, *Filmharmonie* by Roehr A.G.; *Preis-Kino-Bibliothek* by Heinrichshofen Verlag; *Cinema Collection Brull* by Karl Brull, and the most influential one, *Kinotek Neue Film Musik* by Giuseppe Becce, published at Berlin by Rob Lineau between 1919 and 1933 in two issues, a German and an English one. **France**: *Salabert Film Series*, *Morceaux de Genre and Repertoire de casinos, hotels, brasseries et musiques pour cinema* by Francis Salabert; *Nouvelle collection d'oeuvres caractéristiques pour petits et grands orchestres, arrangées spécialement a l'usage des cinémas si Répertoire des cinémas* by the Choudens Publishing House. **Italy**: *Scene Musicali per films Conematografiche* by Franco Vittadini, published in 1926 at Ricordi (Milan). **Japan**: *Gendai Eiga Bansokyoku Shu* and *Eiga Bansokyoku Shu* (a compilation meant to illustrate historical films). Source: *Musique et Cinéma Muet*, quoted work, pp. 55-57.

<sup>26</sup> *The American Organist*, vol.3, no.5, 1920, p. 173.

Fig. 7

The first page (of 6, which totally contain 54 thematic musical suggestions) in the *cue sheet* of the film *Napoleon* (director: Abel Gance 1927), produced by Ernst Luz (?-1937), considered to be one of the most prolific cue sheet compilers in America. Based on this document, the cinema pianist or organist had to elaborate the strategy of the musical accompaniment, relying on the skills, knowledge and competence identified and presented throughout the present paper.

Above each of the thematic material, there are several written indications and pieces of information.

- The Arabic numbers indicated the number and order of musical examples;
- The next indication identified the moment to start the performance, as follows:

AT SCREENING – at the moment when the screening started; (*Title*) IN THE WINTER OF 1871 (e.g. fragment no.2) – when the text written in capital letters would appear projected on the screen; (*Action*) BOYS LET EAGLE OUT OF CAGE (e.g. fragment no.5) – the performer would wait for the scene described in the explanatory text to appear on the screen (in example no.5, i.e. the scene where the boys let the eagle out of the cage). There was no signalling for the end moment, because the speed of the projection of the picture (which directly influenced the tempo and the duration of the performance) varied from one hall to another.

- French National Defile March (Turlet) – information referring to the title of the recommended paper, and in between brackets the name of the composer. If a certain fragment could not be found in the property of the

cinematograph or in the musician's personal library, then it was recommended to either rent it, or borrow it, or to replace it with a fragment that possessed similar emotional characteristics.

- (BROWN) – Ernst Luz elaborated his own personal system (known as the *Luz Symphonic Colour Guide*), which referred to the themes used several times within the same motion picture. The *French National Defile March* fragment was replayed 6 times at different moments within the development of the plot (and intervention no.3 is, in fact, the reinterpretation of the first fragment), thus called “the brown theme” (a piece of brown paper would be glued in the part of each instrument opposite the fragment and was used as a mark) – this way it was easy to go back to it, and the transcription of the same musical material for 6 times was no longer necessary.

- 1 minute – the approximate duration of the musical fragment.

The cue sheet distributed by the *Fox Film Corporation* for the picture directed by F.W. Murnau (1888-1931) *4 Devils* is one of the last ones to have been made and certainly among the most sophisticated ones. The film appeared in two versions at the end of 1928 (other sources indicate the year 1929). It was a spoken version, with musical accompaniment, sonorous effects and a few dialogue sequences, but a silent version of the movie also seemed necessary (especially to be distributed in Europe, where many halls had not yet been technologically adapted to the requirements of the spoken picture). This document contains 120 input signals (an average of one signal for every 54 seconds in the picture). In several moments of the story, the document indicates “silence” or “brutal stop”. The most defining indications are “*make the cuts as percussive as possible*” or “*arrange in such a manner that you will find yourself in a grandiose state* (regarding the musical accompaniment) *for the kiss between Vamp and Charlie*”<sup>27</sup>.

Following the success of the first volume *Moving Picture Music* (in the series published by Sam Fox Pub. Co. starting with the year 1913), which included original musical compositions (for the atmosphere) for piano, composed by J.S. Zamecnik (1872-1953), famous composers were invited more and more often, such as Robert Stolz, Victor Herbert, Jerome Kern, Franz Lehár, Arthur Honegger, Jacques Ibert, Erik Satie, Maurice Jaubert, Paul Dessau, Florent Schmidt, Ernő Rapée, Hugo Riesenfeld, Edmund Meisel or Dmitri Chostakovitch, to compose the accompaniment music which was to be performed in the movie theatre halls. The copy of a piano reduction of the composition signed by Edmund Meisel for the film *Berlin* (1927) has been recently found. On the music score, beat by beat or every two beats, there are indications regarding the image correspondence, with the kind of care, which gives evidence that the objective was to achieve a perfect synchronism<sup>28</sup>, and thus, the music became the sonorous double of the image.

<sup>27</sup> *Musique et Cinéma Muet*, quoted work, p. 31.

<sup>28</sup> The indications, signalling the images illustrated by the music are of the following kind: cars, corset shops, telegraph poles, shutters, shop windows with dolls, sheets of paper in water, sheets of paper on the street, a house with inclined shutter etc.



### **Conclusions**

Cinema music during the silent movie period (1895-1929) found its justification in its illustrative character, the basic function of the musical accompaniment being to render the general atmosphere of the motion picture.

By the musical director or the cinema pianist's access to a repertoire worthy of being taken into consideration, both from a quantitative, and from a qualitative point of view, the cinematograph in the first quarter of the century offered genuine musical education to the large audience. This became one of the important stakes of the musical accompaniment in the first quarter of the century, which the composers themselves were very much aware of.

The multiple roles and functions ensured by the silent movie music are:

#### **A) Underlining the Physical Aspects through the Music in the Picture**

- The sonorous particularization of the space (anthropological-geographical): determining the scene location through the music was achieved by covering and rendering ethnic music specific to the area (Indian, Chinese, Mexican, Spanish, etc.) This was done either by implanting traditional and unique elements belonging to the corresponding folklore (by using specific musical scales, free processing of folk music) or, in the case of orchestras, by using specific traditional instruments, which would provide direct reference to a certain people or geographic area. For example, the mandolin (Italy), the flamenco guitar (Spain), the banjo (the USA), the accordion (France), the dulcimer (Hungary), the taiko drums (Japan), etc.

- The temporal defining of the space (period music);

- Sonorous double of the image;

- The rhythmic definition of images (known today as the Mickey Mousing technique): this was used in comic situations and, later on, mainly in the accompaniment of animated cartoons;

#### **B) The Psychological Role of Music within the Motion Picture**

- To create an atmosphere, adequate states: rendering and raising the awareness of an adequate musical atmosphere in the mind of the audience, as well as of the emotional states corresponding to the subject of the story on the screen;

- To materialize the characters' inner experiences (not shown);

- To amplify and intensify the action.

#### **C) The Technical Functions of the Music within the Picture**

- Cohesion of the dramatic development: music came to the spectator's rescue in achieving the transition from one scene to the next. This is the resultant of the way in which the human brain processes the information. If, after a certain scene, a new one suddenly appears (with different characters, a different location, etc.), the human brain becomes aware of this rupture and the continuity of the series of images is affected. However, if the brain is "invaded" by two senses at the same time (seeing and hearing) and the music connects the two scenes, with a common musical material, then the passage will become much smoother and more homogenous;

- Ensemble unity.

By using leitmotifs, which are organically connected to the characters with a decisive role in the plot development, by their constant presence, the music can unify all the component elements (visual and acoustic).

Gradually, the existence of double scenes was identified in numerous films, which never stopped following the musicians in their attempt to approach the musical accompaniment based on certain methodical principles. For instance, it was very possible for a fighting scene to appear in the remote background, while in the foreground the wounded hero would receive medical care; or a storm in the background and a romantic scene in the foreground. The recommended solution published in the professional press encouraged towards identifying and accompanying the most important scenes in the subsequent evolution of the story.

Although the French director Robert Bresson (1901-1999) asserted that sonorous cinema had invented, above anything else, silence, it had already been admitted in the silent movie era that the utility of background music could be better noticed only when temporarily it disappeared. Thus, the silence gradually became a frequently used element for dramaturgic purposes.

(Translated from Romanian by Andrea Kornis)

## REFERENCES

- \*\*\* : *Almanach de Mon Ciné*, Paris, 1927.
- \*\*\* : *Musique et Cinéma Muet*, Editions de la Réunion des Musées Nationaux, Paris, 1995.
- \*\*\*: *The American Organist*, vol.3, no.5, 1920.
- Anderson, G.B., *Music for Silent Films 1894-1929*, Library of Congress, Washington, 1988.
- Brown, R.S., *Overtones and Undertones: Reading Film Music*, ISBN 0-520-08544-2, Univ. of California, Berkeley, 1994.
- Davis, R., *Complete Guide for Film Scoring*, ISBN 0-634-00636-3, Berklee Press, Boston, U.S.A., 1999.
- Gagim, I., *Psycho-pedagogical and Musicological Foundations of Music Education*, a scientific report, Chişinău, 2004.
- George, W.T., *Playing to Pictures: A Guide for Pianists and Conductors of Motion Picture Theatres*, Kinematograph Weekly, London, 1912.
- Lang, E. -West. G., *Musical Accompaniment of Moving Pictures*, The Boston Music Company, Boston, 1920.
- Limbacher, J.L., *Film Music: from Violins to Video*, ISBN 0-8108-0651-7, Scarecrow Press, New Jersey, 1974.
- Marks, M.M., *Music and the Silent Film, Contexts and Case Studies, 1895-1924*, ISBN 0-19-506891-2, Oxford Univ. Press, New York, 1997.
- Mesquich, F., *Tours de manivelle*, Ed. Grasset, Paris, 1933.
- Rapeé, E., *Encyclopedia of Music for Pictures*, Ed. Belwin, New York, 1925.
- Rathbun, J.B., *Motion Picture Making and Exhibiting*, Ed. Thompson, Chicago, 1914.
- Sadoul, G., *Louis Lumière*, Ed. Ştiinţifică, Bucureşti, 1966.