Sens public

Deconstructing Andrei Tarkovsky's Magic Realism
Sound Design and the Category of Irreal

Julia Shpinitskaya

Citer cet article

Résumé de l'article

Rejetant les pratiques habituelles de son temps, Andreï Tarkovski confia au compositeur Edouard Artemiev la tâche de créer un design sonore sans précédent pour ses films en lieu et place des bandes musicales conventionnelles ; voie qu'il poursuivit dans ses derniers films avec d'autres collaborateurs. Cet article analyse le rôle du design sonore dans les transitions du réel au magique dans plusieurs séquences audio-visuelles des films réalisés par le cinéaste russe dans les années 1970 et 1980 ; et en particulier les apports d'une nouvelle technologie et du son électronique dans le processus de création. Des synthétiseurs uniques en leur genre tels que l'ANS et le Synthi 100, avec lesquels E. Artemiev composa, devinrent les instruments décisifs d'un travail sonore original. Ils permirent de créer un espace sonore capable d'absorber des sources hétérogènes telles que des sons naturels et ambiants, des bruits, des sons instrumentaux, et des citations musicales, et de les transformer afin de générer un son aux caractéristiques ambivalentes. Cette analyse s'attache à recréer la genèse de la composition, de sa conception initiale à sa production finale à l'aide des commentaires effectués par Eduard Artemiev et Owe Svensson (mixeur suédois qui travailla avec A. Tarkovski à la création de la bande sonore de son dernier film, Le Sacrifice).

Deconstructing Andrei Tarkovsky's Magic Realism

Sound Design and the Category of Irreal

Julia Shpinitskaya

Résumé

Rejetant les pratiques habituelles de son temps, Andreï Tarkovski confia au compositeur Edouard Artemiev la tâche de créer un design sonore sans précédent pour ses films en lieu et place des bandes musicales conventionnelles ; voie qu'il poursuivit dans ses derniers films avec d'autres collaborateurs. Cet article analyse le rôle du design sonore dans les transitions du réel au magique dans plusieurs séquences audio-visuelles des films réalisés par le cinéaste russe dans les années 1970 et 1980 ; et en particulier les apports d'une nouvelle technologie et du son électronique dans le processus de création. Des synthétiseurs uniques en leur genre tels que l'ANS et le Synthi 100, avec lesquels E. Artemiev composa, devinrent les instruments décisifs d'un travail sonore original. Ils permirent de créer un espace sonore capable d'absorber des sources hétérogènes telles que des sons naturels et ambiants, des bruits, des sons instrumentaux, et des citations musicales, et de les transformer afin de générer un son aux caractéristiques ambivalentes. Cette analyse s'attache à recréer la genèse de la composition, de sa conception initiale à sa production finale à l'aide des commentaires effectués par Eduard Artemiev et Owe Svensson (mixeur suédois qui travailla avec A. Tarkovski à la création de la bande sonore de son dernier film, *Le Sacrifice*).

Abstract

Rejecting the common practice of his time, Andrei Tarkovsky challenged the composer Edward Artemiev to create unprecedented sound design for his films in the place of conventional musical soundtracks. He also followed this path in his later films produced without Artemiev. This article analyzes the audio-visual sequences of Tarkovsky's films from the 1970s and the 1980s, exploring transitions from real mode to magic mode, as well as the role of sound design in these cinematic shifts. The new technology and the novel electronic sound that influenced creative processes are at the heart of this analysis. Unique media, such as the ANS and Synthi 100 synthesizers that became available for Artemiev, were key factors that motivated his original sound work. They allowed him to create a sound space capable of absorbing divergent sources (natural sounds, noises, acoustic instruments, and musical quotations), and triggering off transformation of the initial sound sources into sounds of ambiguous nature. This analysis recreates the process of sound-making from its conceptual origins

to its final representations, interpreted through comments by Edward Artemiev and Owe Svensson (a Swedish sound-mixer, who worked with Tarkovsky on his last film, *The Sacrifice*).

Contents

Deconstructing Andrei Tarkovsky's Magic Realism

Julia Shpinitskaya

Introduction

In his *Sculpting in Time*, Andrei Tarkovsky categorically asserts: "Artists are divided into those who create their own inner world, and those who create reality. I undoubtedly belong to the first" (Tarkovsky 1986, 118). In the films of this legendary Russian filmmaker, one balances between irreal and real without being able to define the border between them. The key to this cinematic language relates to Tarkovsky's notion of the "poetic logic", in which magic is understood as an alternative representation of reality, present as an organic element of dreams, patterns of thinking and mechanisms of memory (Tarkovsky 1986, 18–24, 28–30). This notion results in a paradoxical attempt to recreate an authentic feel of integrity of reality via a magic experience. While two of his films created in the 1970s, *Solaris* and *Stalker*, relate to science fiction plots and indeed feature two realities, the film director meticulously avoided explicit declaration of the magic mode in his screen interpretations. Instead, he included only subtle hints of the miraculous or mysterious that imperceptibly penetrates the everyday life, the poetry that breaks down ordinary links between objects. Similar representations run through his later films, with no actual references to irreal elements suggested by the thematic and narrative conventions.

Striving to create realistic films, Tarkovsky required not music but a sound design more akin to sound forms as they occur in reality[1]. As a result of his vision, his films include multiple sound sources: natural sounds, noises, electronic music, the sound of acoustic instruments, and musical quotations. Those sound sources are sometimes unrelated, suggesting separate sound spaces; and sometimes they are combined through mixing and masking procedures into complex soundscapes which emerge and dissolve, suggesting a subtle duality of the meaning and origin of the sound. The category of irreal, above all, rests in the very sound substance: there was a novel synthetic sound, and that sound itself represented unprecedented magic. It became possible owing to the appearance of the ANS synthesizer in the late 1950s and its sound aesthetics: the synthesizer invented by the audio engineer Yevgeny Murzin and used by Edward Artemiev in his work on the soundtrack for *Solaris.*

This article will focus on audiovisual transitions from real dimension to magic, recreating the process of sound work, discussing the sound concepts and new media involved in the making (the ANS and Synthi 100 synthesizers), and discovering sound origin and its transformations. Beginning from the creation of the ANS—one of the most advanced synthesizers of the time,—the meaning offered by new sound and its interpretation in the artistic process, the discussion will explore the category of irreal in Tarkovsky's films, the transition episodes from different films, and the sound work made for them.

The ANS Synthesizer

According to Edward Artemiev—the composer who worked with Tarkovsky throughout the production of his three films (*Solaris*: 1972, *The Mirror*: 1975, and *Stalker*: 1979)—they first met in 1968[2]:

> We were introduced to each other with a mention that I was working at the Studio of Electronic Music. And, after a couple of days, we met with Andrei in the studio, in the first floor of the A. N. Scriabin Museum. I made him listen to some recordings of

---

[1]Tarkovsky's views on sound and music in relation to realistic film have been explored in my previous articles: see (Shpinitskaya 2011, 386–88) and (Shpinitskaya 2015, 136–38).

[2]At a party in the apartment of the painter Mikhail Romadin, who became a production designer in *Solaris.*

> the electronic avant-garde, in particular, Stockhausen's *Song of the Youth*, only to acquaint him to the newest elitist electronic sound: he had not heard anything like that before. I remember his response; he said that this music was "above human". And he noticed that for his future *Solaris* he, probably, will need something of this kind (my translation, Petrov 1996).

More than a year later, Tarkovsky sent to Artemiev the screenplay for *Solaris*, and they discussed music for the film. Artemiev recalls Tarkovsky saying:

> I remember music that you showed to me a year ago. I think that something in this "irreal" spirit suits me. Because I do not need an ordinary film music. I cannot stand it, and I do my utmost in order to escape it [...] Only ambience, only organisation of sounds and noises... Read the screenplay, watch the film footage, and try to determine which sequences need music. After that I will tell you, where I consider it really necessary (Petrov 1996).

While making *Solaris*, Artemiev worked with the ANS synthesizer, a unique photoelectronic musical instrument created by the engineer Evgeny Murzin (1914-1970). The synthesizer was named after Alexander Nikolayevich Scriabin, as Murzin was inspired by his ideas of colour-coded music and expansion of temperament. It took almost 20 years, from a technical idea to the release of the first experimental model of the ANS in 1958, and Murzin invited composers to explore the new instrument, first at the laboratory. The Studio of Electronic Music opened, however, only in 1966[3].

The ANS was designed for composers who could completely control their creations without interpreters. One peculiarity of the device was its graphic representation of sound. The so-called *score* was a glass panel painted with black mastic: a composer could draw on it freely by hand or by using a special keyboard with the coder that helped to set pitch, duration, volume and timbre. There was also a reading mechanism that transformed the score into sound. The ANS was based on the idea of the additive synthesis. The sound generator was a photo-optic device constructed with 5 glass discs, each

---

[3]For a contextual survey of the invention and the development of the ANS, see: (Schmelz 2009).

with 144 sound tracks of pure tones. The discs rotated with different speeds that resulted in 720 pure tones, covering all audible frequencies[4].

In practical terms, working with the ANS offered great potential: on the one hand, it enabled the creation of new timbres and control over the overtones and spectral structure of the sound; on the other hand, it gave an opportunity to work with microtones. Murzin, after Scriabin, sought to expand the tempering: he studied Boleslav Yavorsky's theory[5], and brought into life a construction in which the octave was divided into 72 parts, with the smallest unit making up 1/6 parts of a semitone. This invention allowed experiments relating to the creation of new artificial scales, and the use of any existing scale, such as, for instance, Indian Śruti (Artemiev 2008, 10), (Kreichi 2008, 13). Stanislav Kreichi, a composer and engineer who joined the laboratory in 1961 and had been working with the ANS since then, states that the core of their experiments was a search for new timbres, gradual transitions from one timbre to another, transitions from noise to a chord, and other sound properties, which were hard to achieve with musical instruments but formed part of the ANS resources (Kreichi 2008, 13).

Electronic Sound, the Novel Meaning

How did those, who experimented with the ANS, experience the electronic sound? Above all, it was an *unknown* sound associated with an *unknown* source that could easily acquire fantastic or mysterious meaning. Thus, it could be applied to any unknown or unidentified situation or object, and it could indicate anything with no established musical or sound paradigm. Moreover, it could replace such a paradigm, breaking down a fixed meaning and shifting conventional meanings.

Artemiev said that electronic music was "above emotions" (Belzhelarsky 2006). One of his first pieces, written with Kreichi, was the music for a commissioned 10-minute motion picture *Cosmos* (1961). However, the electronic origin of the sound was too evident, and this was a reason why it was

---

[4]For more details about construction of the ANS, see: (Kreichi 1997). Murzin wrote a large volume about his creation, talking about philosophy, aesthetics and acoustics: (Murzin 2008).

[5]A prominent Russian musicologist, whose theory of modal rhythm could be expanded into microtonality.

perceived as artificial compared to other musical sounds. In search for new expression, the electronic sound had to be explored through experimentation. Murzin invited young composers including the avant-gardists Alfred Schnittke, Sofia Gubaidulina, and Edison Denisov, among others[6]. Each of them composed a piece with the ANS for a vinyl record[7].

Denisov described electronic sound as "lifeless" or "dead", while speaking about the difficulty of overcoming the unnatural effect (Shulgin 2004, 201). For his piece *Birds' Singing*, he found a solution in combining natural sounds (recorded bird calls[8], and also some other forest sounds, such as sounds of frogs or deers) with the sound of musical instruments such as the piano, and the sound of the ANS, and their transformations—in order to transit the borders between the sounds. Thus, the forest sounds were partly transformed electronically in the studio, and the piano was prepared to imitate natural sounds (Shulgin 2004, 199–203), (Kholopov, Yuri and Tsenova, Valeria 1993, 143–44). Denisov mentioned[9] that the sound of the ANS was used very carefully, in some soft clusters and colour spots only. Thus by sound sources, the entire composition in reality represents the concept of concrete music (*musique concrète*) rather than electronic music.

Similarly, the title of Gubaidulina's work *Vivente-Non Vivente* (*Alive-Not Alive*) refers to the perception of the electronic sound as lifeless or artificial (a machine sound) as opposed to live sound. In the same manner as in Denison's work natural and electronic sound sources were transformed to resemble one another, and to mask the border between them. In an annotation of her piece on the LP *Musical Offering*, Gubaidulina explains:

> The oppositions of "alive" and "lifeless" in the piece are given
> in very different elements. The sounds of bells, choir, human
> voice, laughter, crying, and breathing have an ambiguous nature

---

[6]Others, mentioned as composers experimenting with the ANS approximately at the same time, were Oleg Buloshkin, Alexander Nemtin, Andrei Volkonsky, Pyotr Meshchaninov, and Sandor Kalloś.

[7]*Musical Offering. A. Schnittke, E. Denisov, S. Gubaidulina, O. Buloshkin, E. Artemiev perform their works on synthesizer "ANS"*, recorded in 1971 but released only in 1991 as Melodiya C60 30721000. As stated in the title, the L.P. also included works by O. Buloshkin and E. Artemiev.

[8]From the collection records by the biophysicist Boris Veprintsev.

[9]In annotation to his piece at the cover of *Musical Offering.*

(artificial and natural), and they undergo transformations of one
state into another. (my translation)

Nevertheless, what seems lifeless may create a different meaning in another context. The lifeless or inanimate thereby becomes a metaphorical description of *another reality* as something unreal, unnatural, disassociated from nature, and outside of human experience. The unidentified sound—or the sound with an unknown source—suggests that it belongs to an unknown world, obtaining the meaning of magic, enchanted, unexplained, and irreal. A the turn of the twentieth century, Russian composers of musical Symbolism already attempted to recreate a fantastic image such as an irreal place or state. They did so via a certain minimalistic technique, achieving a still, motionless and static sound by orchestral and tonal means as in Liadov's *The Enchanted Lake* (1909). Today, equipped with modern media and sound technologies, a new generation has come to represent the irreal imagery on a new level, and yet with similar expression and connotations.

The Category of Irreal

The magic reality can assume various forms: it can be something that surpasses human experience, ordinary reality and consciousness. It can relate to unexplained phenomena, whether it is fantastic, magic, irreal, mystic, mysterious, illusory, spiritual, or sacred. When talking about irreal in Tarkovsky's films, it would be relevant to specify what falls into this category, and to define the context of the extraordinary phenomena and experiences that overcome a sense of reality. What pertains to this framework within the films can be divided into three categories, relating to situations, places, and characters:

- There are happenings or situations that belong to irreal space, like dreams, illusions, or visions. Memories may belong here too as they often become a part of dreams or illusions, without a clear borderline between those and patterns of thoughts akin to a stream of consciousness. Levitation scenes can be considered in this context too: although the levitation in *Solaris* is explained by the moment of weightlessness at the research station, similar scenes in *The Mirror* and *The Sacrifice* remain irrational.

- There are places that have functions and meaning corresponding to fantastic, magic or sacred space and time. They are: Solaris (the planet in *Solaris*), the magic Zone with the Room that grants wishes in *Stalker*, the pool that has to be crossed while burning a candle in *Nostalgia*, and the house of the Witch in *The Sacrifice*.

- There are mysterious or strange figures: the *visitors* at Solaris Station, Stalker as a figure of a guide to the mystic place, Maria (the Witch) in *The Sacrifice*, dogs or birds that penetrate dreams like mythological messengers or guides (in *Stalker*, *Nostalghia*, and *The Mirror*).

Above all, magic acquaint the meaning of the spiritual and sacred world. Tarkovsky's films refer to the spiritual search of a man and personal relationship of a man and the sacred. The latter is represented rather in a symbolical manner, often masked under fantastic circumstances in *Solaris* (the planet as an intellectual ocean) and *Stalker* (the Room granting wishes). It does, however, become increasingly explicit by the last film, *The Sacrifice*. There is much more that contributes to this appearance of spiritual and sacred essence, such as the use of religious music (quotations from Verdi and Pergolesi, and many quotations from Bach), prayers and textual quotations (for instance, from the *Book of Revelation* or the *Gospel of Luke* in *Stalker*), the series of sacred (religious) images—paintings (those of Andrei Rublev in *Andrei Rublev* and *The Sacrifice*, Leonardo da Vinci's *Adoration of the Kings* in *The Sacrifice,* and Piero della Francesca's *Madonna del Parto* in *Nostalghia*) and images of temples as sacred places or spaces in *Andrei Rublev* and *Nostalghia.*

The Transition. Solaris: A Meditation on the Breughel and the Levitation

Solaris was the first sound experiment of its kind. The challenge was to find a sound that could describe the unknown, and to incorporate it organically into the film's sound space. The sound made with the ANS synthesizer was truly new in the context of Soviet art; in the film it identified the unknown, and also indicated its presence (the surroundings, Solaris' ubiquitous mind, and the *visitors*). In the initial stages of the ANS experiments, Artemiev claims that he had already worked on the creation of a sound design for

a film before *Solaris* and, moreover, that it had been a science fiction film with space theme[10]: "I composed my first film score in 1961, using the ANS synthesizer. It was a feature called *Meeting the Dream*, and I was asked to create aural settings for several of the film's fantasy sequences—a job which today would be known as sound design" (Varaldiev n.d.).

Within a fantastic context, electronic sound in *Solaris* is used rather openly and is barely masked, especially compared to later film soundtracks. A quotation from Bach's *Choral Prelude*[11] works as a thematic refrain in the film, representing the Earth and memories[12]. Electronic sound is sometimes merged into the end or the beginning of the *Prelude* to help with the transition; however, the sound sources are quite evident. At the same time, the *Prelude* itself is actually arranged with the ANS, imitating the organ timbre, with extra voices or with an electronic choir added in different versions. The synthesized sound of the *Prelude* facilitates changing to and from other sound types, for instance, natural sounds or the electronic sound of Solaris. The work made for this soundtrack was Artemiev's first attempt to approach acoustic and electronic sound and find a blend which resolves the discrepancies of sound sources:

> The first important cinematic work for which I used the synthesizer, however, was *Solaris*, almost ten years later. And although we also used an orchestra in that score, it too basically functioned as one gigantic synthesizer. Then, in the mixing, we combined the sounds of these two different elements—acoustic and electronic—to achieve a seamless musical texture (Varaldiev n.d.).

Let us focus on the irreal "double" *Library Episode* that becomes a magic lapse when time stops and seems equal to a meditation that continues as a levitation scene. The sound flow starts with Hari observing Breughel's painting *The Hunters in the Snow*. Tarkovsky used a strategy wherein the static image becomes animated and filled with sounds corresponding to the visual

---

[10]The work coincided with realisation of music for *Cosmos*.

[11]Bach's *Choral Prelude* in f-minor, *Ich ruf ' zu Dir, Herr Jesu Christ* (*I call to you, Lord Jesus Christ*) BWV Anh. 73-2.58, a variant of the famous prelude BWV 639 from the *Little Organ Book* of W. F. Bach.

[12]However, sometimes a memory or a dream is mixed with a mystical moment, as in the levitation episode and the final illusory scene.

images of the painting: human voices, birds, dogs barking, hunter's horns, and church bells. People speaking indistinctly emerge from the silence, and a bell sound eventually joins them. It becomes a soundscape, a sounding universe, concrete music with the effects of natural sounds and voices which appear hazy, vague and echoed. Imperceptibly, along with the sound, we enter a contemplative state and become completely absorbed by audible space, coming back to reality when the sound fades away, paused with a short intervention as Kris interrupts Hari's contemplation. Bach's *Prelude* then opens a different episode. Due to the intervention the episodes do not follow on from one another, and yet the re-sounding of the Breughel reads as a prelude to the next mysterious scene of weightlessness and floating in space. The sound of a chandelier becomes a signal of a return to the miraculous. And then an electronic voice mixed with a theme from Bach can be heard. The return to reality is sudden: Bach is interrupted with the sound of a broken container with liquid oxygen. The scene therefore overlaps with the next episode[13].

Sound design is what makes an ordinary contemplation an extraordinary magic experience, when reality is perceived as irreal. This sound solution corresponds to what Truppin refers to as the ''spatial signatures'' of Tarkovsky's films. The *Library Episode* in *Solaris* could perfectly illustrate this statement about sounds in *Stalker* : "often too loud, too present, too highly reverbed for the space in which they are apparently located" (Truppin 1992, 242). Here, *spatial signature* clearly shows that sounds are not realistic but treated as a matter of Hari's sound perception or sonification of her visual journey into Brueghel's painting: they are immersive and absorbing. The soundscape, in which original sound sources have been mixed, distorted and replaced with synthesized voices, performs the shift, involving the viewer into the irreal space, and making the viewer enter the painting.

Artemiev recalls a long path made from the idea of sound for *Solaris* as it was intended by Tarkovsky to the final version—going through a creative process with a number of obstacles. On this path the primary objective was to represent different worlds via sound, wherein each world could correspond to a different sound environment and sound source. However, the divergent sound objects disrupted the organicity and integrity of the sound space. When overcoming this dissociation, the composer developed the idea

---

[13]The sound of the chandelier and the broken container, however, are not from the soundtrack. I assume that they were added during the sound design process.

of a common space, and ever since his strategies of blending divergent sounds and masking their sources has become his signature.

> As a main task for a composer in *Solaris,* Tarkovsky saw the creation of a specific sound world of the planet-ocean, the space station—the shelter of earthlings—and finally, of the sound element of the planet Earth—infinitely rich, native to our soul, well-known to us but always new. Initially, the task seemed impossible to me, but with time I had an idea to take sounds of nature—the sound of water, the sound of grass—and to weave them with the artificial sounds of the ANS synthesiser and with the sound of orchestra. Along the way, another problem arose: fundamentally different in their nature, timbres and sounds of different elements—natural noises, electronic sounds and symphony orchestra—"live" in their own individual spaces. At first, nothing worked at all: the nature was on its own, the orchestra was on its own, and the electronic sound was on its own. They did not add together. Until I realised that they should be united by a common space. Then everything connected. Nowadays this is a trivial thing, but at that time one had to arrive at this point. The main [idea] in *Solaris* for me was to give hints and to take them away on time, so that people would not analyse how it was made, and they would not be distracted from emotions by thoughts and reflections. The recording of *Solaris* gave me a colossal experience, which was incredibly useful in further work (my translation, Boyarinov 2015).

While characterizing the ANS as a grandiose machine with huge and infinite potential, Artemiev insists that a composer writing for a synthesizer must overcome the instrument, discovering that which is not on the surface (Tomilov 2006). In addition to the difficulty of overcoming the discrepancy between sound sources, the composer would have to find an approach to the electronic sound and the mixing procedures. A work with the ANS and mixing the sound sources at that time must have been very demanding. Thus, Denisov admits that even though he had very few effects made with the ANS in his *Singing of the Birds*, the work was nonetheless very slow because one needs time to find a sound and avoid cliche in electronic music, but also for technical reasons:

> In fact, we did everything in a primitive way, since all montage was done on the old ordinary tape-recorders. We cut the tape with scissors, glued it for nothing—the tape was old, terrible, it burst and cracked, coming off at the most inopportune moment, and the domestic Scotch did not hold this glueing, of course, so it was almost impossible to bring the material together from different tapes to one. Even a four-channel recording was impossible. And the work itself went in the most primitive conditions—in the basement under the *Scriabin Museum* (my translation, Shulgin 2004, 200).

He also notices that transformations were plain, because of the simple system of filters, and that only a few things were available, such as changes of speed of the initial sound material or sound loops (Shulgin 2004, 201). The final sound depended too much on the quality of devices, tapes, and loudspeakers, as well as fortuitous circumstances during recording.

Addressing the potential and the limitations of the ANS, Artemiev himself talks about its major shortcomings, such as an overly evident electronic effect of the produced sound, revealing the necessity of its adjustment in sound design:

> Creation of an artificial sound is quite a difficult process. There are several types of synthesis, but the most promising is the additive (augmented) synthesis, that is, synthesis by means of setting appropriate overtones. The ANS is a synthesiser of the additive type. The dynamic range between the harmonics of the ANS is very limited, six dB only. And sound is formed not only by overtones, but also by their dynamic relationships. With different dynamic patterns of the same set of harmonics, timbres can be completely different. In this respect, the overtones of the ANS synthesiser vary in dynamics very little (one of the reasons of the specific electronic sounding), but one simply needs to know how to use it; it is important to turn a shortage into a positive quality (my translation, Tomilov 2006).

The Transition. Stalker's Dream

Breughel's episode in *Solaris* is an example of a familiar object becoming unfamiliar, and of contemplation becoming meditation. The sound design is hypnotising, and it transports the viewer into another reality. In relation to Breughel's episode and meditative experience, it is relevant to emphasise a particular theme in *Stalker.* The theme works as a refrain in the film akin to Bach's *Prelude* in *Solaris.* And it is a recurrent meditation in itself. Stalker's theme repeats several times, but in variations, and the length of the fragment differs: it is an improvisation that fades away and reappears, sometimes as if it was picked from the point it was left at the previous time. Listening to the film's soundtrack, you would experience it as a "circular" sound, that is, a kind of loop. On a large scale it turns the film into an extended meditation, especially given that not many sound effects are used[14] and many of the images are static. Once again, time stops, as if reality was displaced to a magic space.

Let us consider this experience in the context of Tarkovsky's range of interests. As it is known from various sources (Volkova 2002, 48), the film director involved himself in studying Eastern philosophy (including Taoism, Zen Buddhism, and yoga) and he has meditated since the mid-1970s[15] (Tarkovsky Jr. 2017). In *Sculpting in Time*, Tarkovsky himself refers to the aesthetics of Zen and Japanese art. Artemiev connects Tarkovsky's interest, in particular, to the times of *Stalker*, commenting that Tarkovsky was reading about it and suggesting books for Artemiev. While he spoke a lot about music for this film, he also spoke about connection between the West and the East (Petrov 1996). In another interview, Artemiev directly relates *Stalker* with the influence of Zen Buddhism on the director:

> At that time, Tarkovsky was very interested in Zen Buddhism, and wanted the music to reflect certain contemplative elements that are part of Eastern religion and philosophy. To achieve this quality, I borrowed from the Indian classical tradition of using a single basic tonality, whose rhythmic patterns are slowly

---

[14]Steps, some natural sounds, birds singing, dripping or flowing water, echoes, rustles, etc.

[15]Andrei Tarkovsky Jr. also mentions his meditation practice and yoga and Buddhism among interests, as well as reading esoteric literature (Rudolf Steiner) and Russian religious thinkers (N. Berdyaev, V. Solovyov, P. Florensky).

and constantly changing, creating a background over which the melody of a solo instrument can soar (Varaldiev n.d.).

The secret behind Stalker's theme is its composition strategy. Tarkovsky asked to make "Eastern" music by "Western" hands, i.e. by applying European techniques. It was so important to him that he was going to attend the recording session himself. Artemiev proposed an improvisation based on a European theme from the 14th century, *Pulherium Rosa* (*Beautiful Rose*), performed by a dutar (an Asian two-string lute[16]) player, and accompanied by a simple arrangement with the strings, oboe, and harpsichord. However, for Tarkovsky, this arrangement was not suitable, and he rejected this version, commenting that "[he] do[es] not at all need that an Eastern instrument would play a Western tune. [...] [He] need[s] quite another thing—merging of spirits of two cultures" (Petrov 1996).

The next time, Artemiev followed a more "authentic" approach to sound:

> This time I decided to exploit the method of the so-called "minimalism", and also the improvisational style of Indian musicians, when a stringed veena[17] sustains an endless single sound, with some events developing over it (Petrov 1996).

He mixed sources and let the theme of *Pulherium Rosa* be improvised on the medieval recorder (a European instrument of the time), being thus more organic to the tune. He used the dutar to improvise using an original Azerbaijani *mugam*[18], which appeared as faint background. Therefore, he blended an acoustic sound with a synthesised one. The third element was an electronic sound that embodied the aforementioned Indian style, maintaining a continuous pedal and imitating an endless vibrating sound flow. At the same time, subtle manipulations with instrumental sounds such as reverberations and dynamics, allowed to combine different sound sources into a united whole with ambiguous sound origin. Rejecting the first version of the sound blend, Tarkovsky in fact also turned down the pure orchestral version in favour

---

[16]Dutar has Central and South Asian origins and has been practised since the 15th century.

[17]*Veena* is a string instrument making a vibrating sound. It is one of the oldest Indian instruments.

[18]The *mugam* is a highly complex musical genre of Azerbaijani tradition. It is associated with concepts of modes, tunes and genres.

of the mixture of orchestral and synthesised sound, or a finer blend of the acoustic and electronic spaces (Petrov 1996).

In *Stalker's Dream*, the theme reappears three times. It is a large scene, with several shifts from reality to dream and back, as monologues of the Writer interrupt experience of a magic space. Accordingly, Stalker falls asleep and is pulled out from his dream before falling asleep again: thus, there are takes from "inside the dream" and from "outside the dream". Visually, the episode plays out with different colour schemes, and contains static images. A dog appears first outside the dream, then reappears inside the dream, as if it were a mythological guard. Moreover, there is no continuous soundtrack "inside" the dream: it alternates with the voice of Stalker's wife reciting passages from the *Book of Revelation* and the *Gospel of Luke.*

The Transition. Stalker: The Journey into the Zone

In the films following *Solaris,* the sound design of the unknown becomes more subtle and veiled, or concealed through its blending with the ambience or acoustic sounds. There is very little sound work in general[19]. In *Stalker*, apart from Stalker's theme, the sound design of the Zone contains mostly natural sound effects: steps, dripping or flowing water, a bird in flight, rain, and birds singing, among others. Artemiev explains that this idea came from Tarkovsky himself:

> It was important for Tarkovsky that music in his films would create a unique atmosphere in which his characters reside. The viewer plunged in a certain substance, sound plasma. Music dissolves in the noise of foliage, splash of water, and wind rumble— this kind of technique (Tomilov 2006).

However, the episode of driving into the Zone is an enduring "realistic" track that transitions into the irreal. Artemiev points out that making the sound implied transforming it constantly and gradually:

> There has been one more curious episode in *Stalker.* It was called (by the screen script) "Journey into the Zone". Do you remember

---

[19]In *The Mirror*, however, it was a result of Artemiev's involvement in another film. Instead, it seemed that Tarkovsky reinforced his strategy of work with musical quotations: there are many of them.

a three-minute journey on a hand car? Heroes depart from a more or less normal world to an abnormal, the Zone. Three minutes[20]. And nothing happens on the screen. Merely a trolley with the heroes zips along ahead. However, the viewer must feel that something changes. The reality changes in itself; there arises something like a new reality. I have been thinking a long time: what clue I can go by. Then I surmised: the rumble of wheels. What if I play with it in a way? At first, I simply added reverberation—in one place more, in another less. Then I replaced an acoustic rumble by "artificial". Then I laid a male choir under this sounding (and transposed it down by an octave). I added other acoustic background noises by the smallest, literally homeopathic doses. s a result, the rumble of wheels at first sounds natural and then, with every ten seconds, more fanciful, remote, supernatural (Petrov 1996).

Now, this last comment is very important, because while the composer actually recognizes the other—magic—reality, he also acknowledges the transition he made, and describes the process along the way whereas in many cases we are not so lucky to be provided with such details. The electronic music is masked as an ambience, it imperceptibly works as a substitute while the re-sounding is made. Above all, it is more about concrete music than electronic sound. Obviously, the sound transfers the listener into the Zone, focusing on a monotonous static state with the interplay of colour, rhythm and tone inside the structure, which causes a hypnotizing effect and involves the listener in the meditation. Similar to the *Library Scene*, with the focus on personal internal processes and experiences of reality, here it is an individual who creates reality. Reality, as Stefan Smith explains, "is not a predefined set of values and rules that can be applied collectively but is constantly shifting and blurring, as represented by the nature of the Zone itself" (Smith 2007, 44).

Apart from Stalker's theme and the episode of *Journey,* Artemiev was "mainly occupied with hardly noticeable and almost invisible effects—echoes, rustles or jingles—all kinds of mysterious soundings and play of volumes, with a certain sound outdoors and completely different indoors" (Petrov 1996). The sound work became more refined, aiming to create elusive sound

---

[20]In actual fact, this episode lasts about five minutes.

effects and delicate treatments of original sound sources, depending a lot on sound quality. At the time of making *Stalker,* Artemiev was working with the Synthi 100[21]. As a synthesizer of a new generation, the Synthi 100 provided him with a wide range of new qualities and possibilities of sound:

> There were 12 generators in the synthesizer, and the very principle of the invention was unique because there was already a small computer inside the instrument—not powerful, of course, but considered powerful for its time. And the generators themselves were of amazing quality. The Moog generator synthesizers were mostly used then, but this instrument was several steps ahead. Absolutely fantastic sound quality (Tomilov 2006).

Nevertheless, the technical aspects of the sound work—such as producing the sound, treating the sound and recording the sound—were still complicated. One difficulty involved memory:

> With the Synthi 100, the sound was synthesized by tuning numerous generators and associated instruments manually. But in our Synthi there was no memory—it was necessary to make a sound and to record it immediately, our Synthi 100 did not memorize the prepared sound. There was a sequencer that could register 220 notes, and for those times 220 notes was a huge volume! (Tomilov 2006).

Artemiev recollects that there was always a recorder connected to the synthesizer. In the 1980s, it was the powerful 8-channel Swiss-made Stude. However, earlier, when working on the sound for *Stalker*, there was always a compromise between preserving the sound quality and recording the sound:

> At first there were several stereo tape recorders, and we recorded constructed sounds by overwriting, and with a great loss of quality. There were also two keyboards, which made it possible to record two layers on one tape—we were finding ways to keep the quality. So, each timbre had to be done anew, and it was very problematic to repeat it. Even if we knew how and what had to be turned, we still could not repeat the timbre one to one—the functions slipped and drifted away, and the sample was always a bit different (Tomilov 2006).

---

[21]For the story of purchasing the Synthi 100 see : (Tomilov 2006).

The Transition. The Sacrifice: Alexander's Dream

In the last two films, *Nostalgia* and *The Sacrifice,* Tarkovsky had to manage without a composer, as the films were made abroad, and Artemiev was unable to work with him. However, his collaboration with the Swedish sound mixer Owe Svensson for *The Sacrifice,* brought sound design to an entirely new level. Svensson suggested a more differentiated and complex approach to sound that corresponded to Tarkovsky's aesthetic vision of film sound space as an organization of sounds and noises rather than a composed film music. For instance, Svensson refers to an incredible amount of sound effects wanted by Tarkovsky for the film:

> Andrei requested this long list of sound effects for The Sacrifice, page after page; there were 253 different examples of sound effects he wanted to work with. And straightaway I realised this wasn't going to be possible. There was no space left; the film was going to be crammed with a load of diverging sounds. To begin with I cut out half, and then I started to work (Svensson 2003, 113).

Technically speaking, for irreal episodes, they continued gathering and mixing different sound sources, including a musical instrument, recorded music, and noises.

There are several important sound sources employed throughout the film and they all join in the series of scenes combined into a long dream, including a levitation scene. As observed by Andrea Truppin, they work as "sound bridges" used to join "heterogeneous worlds", "the real with the unreal, making each more like the other", and "subverting our expectations of conventional depictions of reality that the films [of Tarkovsky] initially seem to follow" (Truppin 1992, 244). The two major components are the traditional forest herding calls and the sound of the Japanese flute *hotchiku.* Svensson discloses the source of the herding calls: in selecting the recording, it was important to find one with the most realistic sound, regardless of the quality. Once again, the use of mixing procedures eventually masked the original with its noises:

> This idea about this woman's voice that permeates the film occurred to us early before the sound editing began. Tarkovsky wanted to listen to some old recordings of cow calls. These calls

21

> were used by shepherds to keep in contact with the cows when they went grazing in the mountain pastures in Northern Sweden and then when they were herded. We thought of looking for these calls in the Swedish Radio archives but didn't find many that were recorded realistically. There were some that had been arranged musically, but he rejected those. He wanted it to be real. And then we came across a rather old recording that had been made via a telephone cable from Rättvik in the Swedish countryside to Swedish Radio in Stockholm. It was mastered on one of those wax cylinders. It was of very poor quality—there was crackling and static—but he still thought it was marvellous. In the soundtrack, it was mixed into the outdoor environment with a certain amount of reverberation, so the quality did not matter (Svensson 2003, 113).

The herding calls represent the maid Maria, who is a local living in the countryside and believed to be a witch. They are actually not music but signals, and in the context of the film they function as very specific signals, or calls. The Japanese flute *hotchiku* is a recording of Rinzai Zen master Watazumido Shuso, and this sound, which is related to Alexander, is the result of his great passion for Japanese culture. The following context applies to the scene: Alexander comes to Maria to persuade her to make a love ritual because Otto convinced him that she was a witch, and this could save the world.

The sounds of the scene are explained by Svensson through an interaction of several sound components, in which the Japanese flute and the herding calls are included in a larger soundscape represented by the overhead flights, ship sirens and foghorns of lighthouses:

> In the case of the dreams, it was very evident what needed to be done. The main component is naturally the overhead flights. In order to conjure up threats of war we had to create a sense of great anxiety, to make it seem as if a war was actually going on. It's a composition of many Swedish jet fighters with added bits of rumble and a few other things. Another sound component is the Japanese flute, a kind of long tube, which we took from a vinyl recording. Strangely enough, Tarkovsky wanted us to do a mix of the Japanese flute in combination with the voice of the

woman—the cow calls. And remarkably it worked; music was made out of two seemingly unrelated components. And there's another ingredient: there were ships' horns in the distance that sometimes reach the pitch of the Japanese flute. There are a number of different ship sirens, as well as lighthouses that sound foghorns. So, in the end, the dream is heard as a combination of the woman's voice, the Japanese flute and various ship sounds (Svensson 2003, 115).

Eventually, only the sound of the flute remains. Alexander wakes up and switches the recording off. It happens to be the sound that penetrated his dream "from reality". As for the ship sirens that Svensson mentions, they cannot be detected in this episode, but they do return in another, after the air raid when Alexander speaks to Maria. There, the ship sirens are finally substituted for the sound of the flute.

Sound Design for Irreal

As observed by Andrea Truppin, "Tarkovsky's use of sound permits his films to travel smoothly through multiple and equally weighted layers of experience. These layers flow simultaneously through one another without the rigid hierarchy that separates most filmic worlds into 'reality' and 'fantasy'" (Truppin 1992, 243). What follows from the transition sequences, the basic model of the magic category is a fusion of real and irreal in the audio-visual language, in which real and irreal are not necessarily synchronized: visual context may not represent the unknown, but sound becomes a major tool for performing a shift into the irreal. Let us emphasize the significance of the fact that the ANS enabled composers to create individual spaces from scratch, starting from the timbres as initial elements in order to bring to life virtual sound worlds. Electronic sound as a created space obtained values and identity of the unknown. In the process of identity construction of the irreal and finding a corresponding sound, along with the attempt to cover technical imperfections, the strategies of mixing, blending, and transforming the original electronic sound in order to mask the source become extremely important. This is what Edward Artemiev employs as a major strategy in his film soundtracks when he merges natural and electronic sound, blends electronic sound with musical quotations in order to dissolve the quotation

in the electronic sound or mixes the electronic sound with sound of musical instruments. Through these processes, he veils the sound source and conceals the borders between the electronic and the acoustic, making them become one, and achieving a mysterious unidentifiable sound.

Facing the task of finding an approach to sound design for Andrei Tarkovsky's films, the composer at the same time had to design the sound space of the irreal and to solve the problem of transition between real and irreal dimensions, which represent both "realities" in sound. Use of the most advanced modern technology available in the Soviet Union and new electronic sound with its potential (explored by Artemiev for about ten years by then) at the time seemed an evident solution to represent the irreal. However, the properties of this sound required elaborate strategies to conceal the overly blunt nature of an artificial sound and to provide the viewer with a magic experience. Thus, the composer and the filmmaker opted for a more sophisticated sound version. Eventually, natural sounds and noises as non-musical sounds, on the one hand, and sounds of musical instruments used in unconventional and unusual manner, on the other hand, became complementary components, adding in mixtures, especially in the transitional parts.

In *Solaris*, the first collaboration with Artemiev, this complex sound representation has just been found and proposed in a more transparent form, which could partly be explained by the amount of work made with the ANS—this soundtrack was the largest ANS score in films. In *The Mirror* and *Stalker,* Artemiev went further to elaborate sound design, composing invisible and almost imperceptible effects: the sound blend became truly refined, reaching the status of an established technique. Even in his later films produced without Artemiev, Tarkovsky retains his signature principles in sound design, requiring compilation of divergent musical and sound sources and their blend in representation of irreal dimension. The sound model designed by means of the ANS and Synthi 100 synthesizers is based on the uniting qualities of the universal electronic space. This comprehensive space could, in principle, generate any sound which, through modifications, could be detached from its electronic origins towards the effects of acoustic space. Similarly, sounds of acoustic origin could be modified through modern media, approaching a sound of a more electronic nature. Through metamorphoses of the acoustic and electronic spaces, necessary compatibility was achieved. Devoid of origins, precise associations and identities, the sound blend obtains an *authentic* touch of magic reality.

Bibliography

Artemiev, Edward. 2008. "Vospominaniia O E. A. Murzine [Memory of E. A. Murzin]." In *E. Murzin. O Prirode, Zakonomernostiakh Esteticheskogo Vospriiatiia I Putiakh Stanovleniia Muzyki Elektronnoj I Tsveta [E. Murzin. At the Beginnings of Electronic Music. On Nature and Laws of Aesthetic Perception and Paths of Formation of Electronic and Colour Music]*, 6–11. Moscow: Kompozitor.

Belzhelarsky, Evgeny. 2006. *Elektronnaia Skhima [the Electronic Schema]*. http://www.electroshock.ru/edward/interview/belgelarskiy/index.html.

Boyarinov, Denis. 2015. *Eduard Artemiev: "Vozmozhnosti Muzyki Bezgranichny" [Edward Artemiev: "Possibilities of Music Are Infinite"]*. http://www.classicalmusicnews.ru/interview/eduard-artemev-vozmozhnosti-muzyiki-bezgranichnyi/.

Kholopov, Yuri, and Tsenova, Valeria. 1993. *Edison Denisov*. Moscow: Kompozitor.

Kreichi, Stanislav. 1997. *The Ans Synthesizer: Composing on a Photoelectronic Instrument*. Theremin Center. http://www.theremin.ru/archive/ans.htm.

———. 2008. "Moia Ansiana [My Ansiana]." In *E. Murzin. O Prirode, Zakonomernostiakh Esteticheskogo Vospriiatiia I Putiakh Stanovleniia Muzyki Elektronnoj I Tsveta [E. Murzin at the Beginnings of Electronic Music. On Nature and Laws of Aesthetic Perception and Paths of Formation of Electronic and Colour Music]*, 12–16. Moscow: Kompozitor.

Murzin, Evgeniĭ Aleksandrovich. 2008. *O Prirode, Zakonomernostiakh Esteticheskogo Vospriiatiia I Putiakh Stanovleniia Muzyki Elektronnoj I Tsveta [at the Beginnings of Electronic Music. On Nature and Laws of Aesthetic Perception and Paths of Formation of Electronic and Colour Music]*. Moscow: Kompozitor.

Petrov, Arkady. 1996. *Eduard Artemiev I Andrej Tarkovskij ("Muzyka V Fil'me Mne Ne Nuzhna…") [Edward Artemiev and Andrei Tarkovsky ("I Do Not Need Music in Films…")]*. http://www.electroshock.ru/edward/interview/petrov3/index.html.

Schmelz, Peter J. 2009. "From Scriabin to Pink Floyd: The Ans Synthesizer and the Politics of Soviet Music Between Thaw and Stagnation." In *Sound Commitments. Avant-Garde Music and the Sixties*, Adlington, R., 254–77. Oxford, New York: Oxford University Press.

Shpinitskaya, Julia. 2011. "Sounding, Quotation and Visualisation: Applying Poetic Logic. Realistic Cinema of Andrei Tarkovsky." *Imafronte. Revista de Historia Del Arte* 19-20: 385–404.

———. 2015. "Approcher L'irréel. Aspects Du Naturalisme Sonore Dans Les Films d'Andreï Tarkovski." *Ligeia. Dossiers Sur L'Art* 2 (141-144): 136–46.

Shulgin, D. 2004. *Priznanie Edisona Denisov [Confession of Edison Denisov]*. Moscow: Kompozitor.

Smith, Stefan. 2007. "The Edge of Perception: Sound in Tarkovsky's Stalker." *The Soundtrack* 1 (1): 41–52.

Svensson, Owe. 2003. "On Tarkovsky's the Sacrifice." In *Soundscape. The School of Sound Lectures 1998-2001*, Larry Sider and Diane Freeman and Jerry Sider, 112–17. London: Wallflower Press.

Tarkovsky, Andrey. 1986. *Sculpting in Time. Reflections on the Cinema*. Austin: University of Texas Press.

Tarkovsky Jr., Andrei. 2017. *Andrej Tarkovskij-Mladshij: "Fil'my Otsa Nado Smotret' Glazami Rebenka" [Andrei Tarkovsky Junior: "Father's Films Need to Be Seen by Eyes of a Child"]*. https://ria.ru/interview/20170404/1491424721.html.

Tomilov, Boris. 2006. *Eduard Artemiev — Prostranstvo Russkogo Dukha [Edward Artemiev — the Space of the Russian Spirit]*. http://www.electroshock.ru/edward/interview/tomilov/index.html.

Truppin, Andrea. 1992. "And Then There Was Sound: The Films of Andrei Tarkovsky." In *Sound Theory. Sound Practice*, Rick Altman, 235–48. New York; London: Routledge.

Varaldiev, Anneliese. n.d. *Russian Composer Edward Artemiev. Interview with E. Artemiev*. Accessed May 28, 2018. http://www.electroshock.ru/eng/edward/interview/varaldiev/index.html.

26

Volkova, P.D. 2002. "Stat' Samim Soboj [to Become Himself]." In *Andrej Tarkovskij. Archivy, Dokumenty, Vospominaniia [Andrei Tarkovsky. Archives, Documents, Memoirs]*, 9–94. Moscow: Eksmo-Press.