

Approaching the Liminal in the Performance of Iannis Xenakis' Instrumental Solo Works

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Abstract: In contemporary music repertoire, the solo works of Greek composer Iannis Xenakis are known to be extremely demanding. In this paper, *Theraps* for solo double bass is examined, combining issues of performance practice with an aesthetical and theoretical approach. Using my personal study of this piece as a starting point, questions concerning its practice and performative experience are tackled: how can musicians practise, achieve high focus and stamina and deal with physical pain? How do perceptual phenomena encoded in the score inform the experience of performing this piece? As methodology, I am applying Turner's theory of liminality which offers a model to describe performance situations as acts of crossing a threshold. This is combined with perspectives from the medical, cultural and psychophysical aspects of instrumental performance, resulting in a complex view that can be expanded into further consequences for music practice and musicological research.

Keywords: Xenakis, performance, mind-body-relation, liminality

Within contemporary music repertoire, Greek composer Iannis Xenakis is commonly regarded as one of the most influential European composers of 20th century art music. Confronting both listeners and performers with high levels of musical complexity, his works have created the cliché of being “technological” or “architectural”, referring to Xenakis' second profession as an architect. (Frisius, 1987; Kanach, 2010) The challenges of this music invite responses from performers (many of these responses have been collected in Kanach, 2010). They all share an awareness of the extraordinary reaction that Xenakis' music creates: “His music has a particular type of violence and savageness. But it also implies a meaningful engagement, after which the performer is a different person.” (Terrazas, 2010, p. 43) The main activities of previous musicological research on Xenakis have been centered on the compositional and structural ideas of his music, but there are few detailed investigations of the physical preparations needed to play his pieces, or of their performative aspect. I argue that an adequate approach in how to actually *study* and understand Xenakis has to be informed by the performative and physical qualities of his works. In this paper, I will look at *Theraps* from a practitioner's perspective, investigate its performative and ritualistic aspects and explain some practical aspects of training.

Physical and perceptual aspects of the score

Most performers describe a shift in perception during a Xenakis performance: “a state of absolute presence” (Freedman, 2010, p. 3), “some level of conflict between the physicality of action and the kind of mental control” (McFarland, 2010, p. 253). Aspects that change are perception of time and speed and the ability to control one's body and mind. I argue that this is not just an accidental condition, but a conscious part of Xenakis' artistic strategy: physiologically changing the state of the performer and the audience, thus drawing on performative processes. In this sense, David Schotzko has already argued for the dramatic dimension regarding the percussion piece *Psappha* (Schotzko & Cesare, 2010). A look at the score of *Theraps* shows how this effect is achieved:

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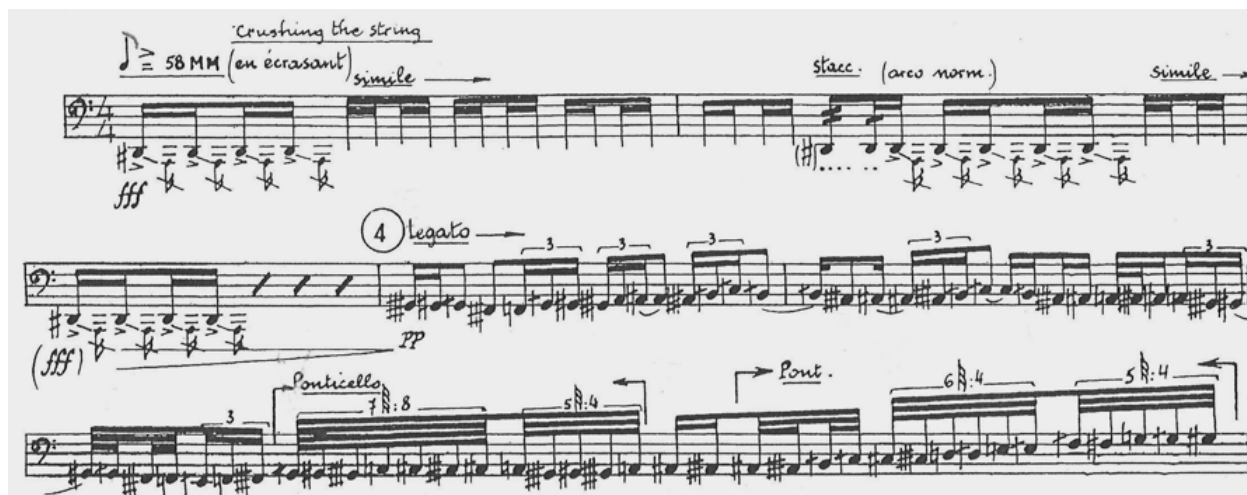


Figure 1: Iannis Xenakis, *Theraps*, bars 1-6.

The score of *Theraps* is extremely dense: twelve minutes of music without rest. All single-line glissandi through all ranges are meant to be played possibly with one finger, but all pitches should be articulated.² This presents a serious and interesting physical problem concerning muscular adjustment (Guy, 1976). The double glissandi sections (Fig.3) require great force and continuity of sound. A fast change of fingers is required when lines cross and great smoothness in bow changes. In contrast, the harmonics sections should be calm and fragile (Fig.2)

All dynamics are extreme: sections of triple *fortissimo* followed by triple *pianissimo*, rapid *crescendi* and *decrescendi*. The ending is meant to be loudest, transgressing pitched sounds and becoming pure noise.

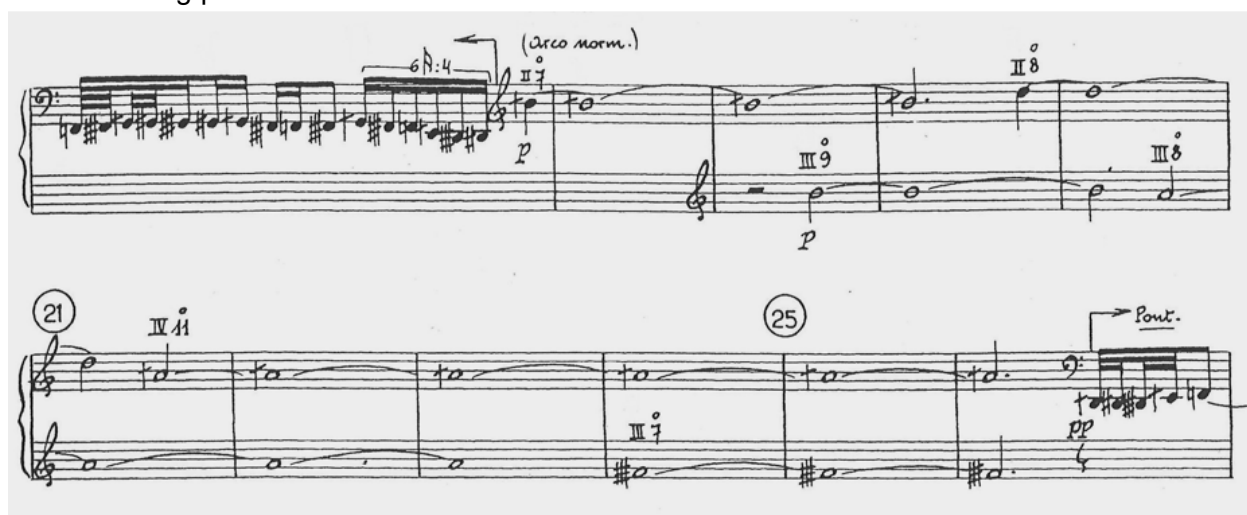


Figure 2: Iannis Xenakis, *Theraps*, bars 26-26. Harmonics section.

² It has often been pointed out that the glissando plays an important role in Xenakis' music in general. He thought of glissando not as an expressive gesture but as a structural element with a quasi-visual quality, often derived from graphs or plots of mathematical functions whose results were transferred into musical events. (Gibson, 2011) The relation of glissandi to the so-called Brownian Movement in particular seems to play a role in the musical structure of *Theraps*.



Figure 3: Iannis Xenakis, *Theraps*, bars 65-80. Double Glissandi section. All markings from the performer.

Mentally, for the performer this means a large amount of written material, together with the speed of music, which results in a high density of information. Sudden changes require mental preparation, high concentration and quick psychophysical adjustment to the new situation. The blurry shapes of glissandi make it hard to split up the mass of written information into understandable “chunks”, presenting a great mental challenge which creates a feeling of one's “brain running hot” because of too much input (Haber, 1996; Jackendoff & Lerdahl, 1982). On the other hand, in the static harmonic sections, there is a minimum of information, resulting in a sudden slow down of perception, as described by Glover and Harrison: “a form of sensory deprivation, that allows a heightened performance from perception” (Glover & Harrison, 2014, p. 7). Physically, playing for twelve minutes nonstop means having no time to relax one's body. Playing continuous glissandi presents a high strain on only one or two fingers of the left hand, which can possibly result in injuries such as

carpal tunnel syndrome or overstrain of the fingers' nerves. Extreme contrasts, fast tempos and rapid changes require one's body to quickly adapt to new situations. Maintaining the level of loudness calls for a very efficient transmission of bodyweight and movement into the strings.

The dominant sound characteristic of *Theraps* is rough and noisy. The glissandi form a blurred shape, increasingly distorted by ponticello sounds in extreme dynamics (*ppp* – faint whisper, *fff* – screaming). When the music loses recognizable features, our perception changes from “structured” musical listening towards a basic form of perception activating all brain regions (Bader & Ruschkowski, 2009). Using complex sounds (even in the quiet passages with throbbing harmonic chords), Xenakis seeks to promote a listening that is closer to a bodily experience than to the specially musically-trained ear. By doing so, he unites performer and audience in the physical impact of his music.

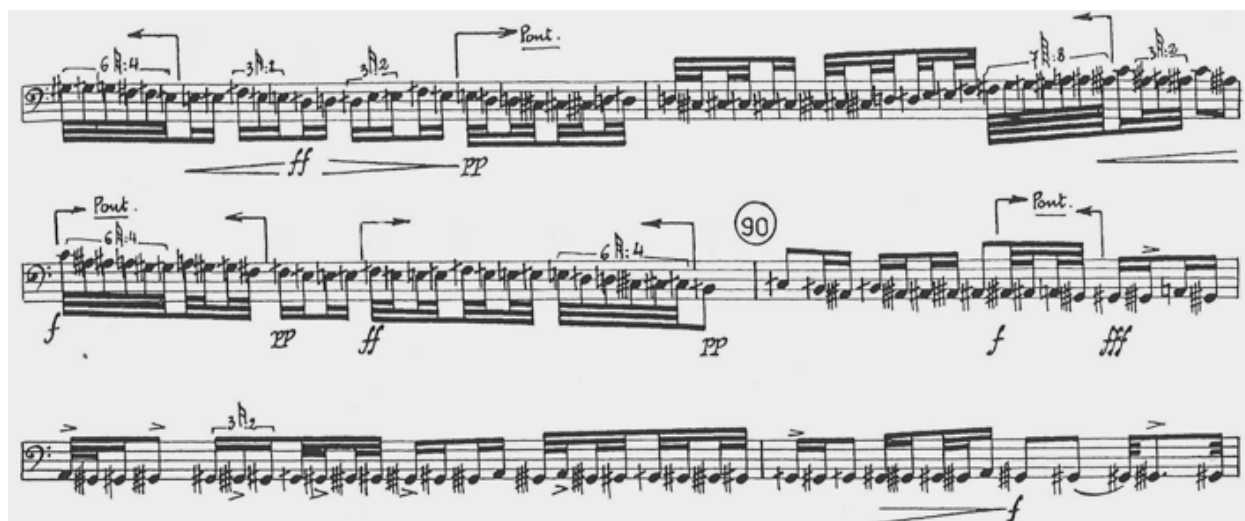


Figure 4: Iannis Xenakis, *Theraps*, bars 87-92. Rhythmical emphasis by reducing glissando range.

One element providing a main stimulus for both performers and listeners is the rhythm (Fig.4). The piece starts with a loudly repeated beat that calms down into the continuous non-accentuated glissandi line. In the middle and to the end, the rhythmic energy increases alongside dynamics and pitch, to form a driving beat. With the increasing strength of the rhythmic structure (combined with less movement in pitch), Xenakis draws on the psychophysical effects of rhythms to bring listeners-performers into a trance (Jovanov & Maxfield, 2012). The meditative mind-state a performer experiences is caused mentally by concentration, and physically by bodily activation. Biologically, both affect the oxygen supply to the brain while causing the emission of dopamines and adrenaline, a mechanism that allows human beings to endure extreme strain. Novelist Aldous Huxley has described his experiences with drugs like Mescaline that evoke such a extended state of mind in a very poetical way, also referring to perceptions of music, movements, colours (Huxley, 1963). (For further research on arousal connected to music perception see Sloboda & Juslin, 2004). Thus, focusing on the rhythm in difficult passages helps a performer to overcome pain and exhaustion.

Approaching the Liminal

The intensity of Xenakis' music has been mostly explained by either referring to his biography, the experiences of violence that he had in wartime (Frisius, 1987); or by his algorithmical thinking (Frisius, 1987). Another common image to describe his music is the topos of »the archaic«, referring to his extensive use of ancient Greek mythology and drama. I want to argue that this second point can be made fruitful for a performer's perspective, not so much in its historical sense but concerning its anthropological aspect. Greek drama is rooted in ritual practices and thus can be analyzed as performance. I will follow this perspective, drawing on the ritual theory elaborated by Victor Turner. The key moment of ritual, in Turner's terms, is the so-called phenomenon of Liminality: in order to reach transformation, the group participating in the ritual has to transgress familiar norms, codes and contexts. What percussionist David Schotzko calls the character of "drama" in Xenakis' music, aiming at the empathy of the audience towards a "cathartic" moment (Schotzko & Cesare, 2010, p. 214), is essentially a liminal situation: describing a group moving into a state of mind outside normality. By uniting audience and performer in an extreme situation and acting out loss of control, *Theraps* represents the essentially "therapeutic" (!) function in what Turner defined as the "social drama" (See Turner, 1990. For an extended argument see Turner, 1981, pp. 137-164).

This may seem commonplace, since in the understanding of culture as performance, elements of ritual are seen as part of every cultural action. To consciously evoke liminal situations with artistic means³ is a strategy with which many contemporary artists work, such as the Serbian performance artist Marina Abramović. Her works address one aspect that a Xenakis performance also touches: the idea of exposing oneself on stage physically, risking failure (Schotzko & Cesare, 2010) and by this creating a feeling of elevation or "Flow" (Csikszentmihaly, 1991). Drawing on liminal experiences can be seen as a tool to intersect the so-called "artificial" with levels of basic human experience. I would argue that from a performer's viewpoint, Xenakis' music is not only *offering* this possibility, it is *guiding* performers into that body-mind-state by emphasizing the bodily aspects of music and its making. In practising how to achieve liminality and seeking to reach it in performance, however, we have to leave the area of traditional instrumental training and look into other performance disciplines.

Practice: from disability to new possibilities in performance

My first impression of studying *Theraps* was a feeling of helplessness, of being physically unable to play this piece. This is not only bound to physical challenge, but refers also to the rejection of norms and aesthetic criteria of movement on stage, which apply not only to instrumentalists but also to dancers and actors. As choreographer and dance theorist Doris Humphrey stated, one of the primordial inspirations for dance or movement on stage lies in playing with gravity, searching for and falling out of line (Humphrey 1959). According to this, "at either end of movement is death – the static death or constant equilibrium or the dynamic death in too extreme movement away from equilibrium" (Stodell 1990, p. 19). This seeking for balance in the duality of motion and stillness is associated with basic principles of drama

³The term "Artistic means" in this context refers to the application of tools and methods that are conventionally used for production of art: instruments, instrumental technique, the craftsmanship of a composer, the concert situation, and many more. While developing new aesthetics, Xenakis did not exceed these hierarchies of the concert situation and the composer-performer-relation.

(Huschka , pp. 116-125). While in dance, body movements can be created freely, in musical performance the functional aspect of the movements (i.e. movements related to achieve a concrete effect, such as to produce sound on a certain instrument, as described by Sandle 1972) also has a strong influence on the resulting image of the moving body.

According to this aesthetical paradigm, it is possible to explain why the bass has never been regarded as a very prominent solo instrument in the classical music context, since not only the relation between human body and instrument in size seems disproportionate, but also the functional movements in playing are exceeding that archetypal image of balance in motion: being always bent forwards and sideways, making lots of big movements and acting behind the instrument results in a seemingly distorted body-image where a big part of the human body is not visible and most movements seem to be controlled by the big instrument in front of the player. In *Theraps*, the strongly visible aspects of the physical performance are encoded into the substance of the piece. Both extremes are explored, from »static death« in the quiet sections, where the player has to remain almost motionless, to the glissandi sections which in their intensity of movement drive a player into what could be called »death in action«. From a movement-oriented viewpoint, this forms another explanation for what Schotzko called the “sense of drama” in Xenakis' music (Schotzko & Cesare 2010). Instead of seeing this as a problem that should be concealed by smoothening the sound and the movements, the player has to embrace this physicality as a way for new possibilities of expression and mastering the instrument, finding their own solutions (Kanach, 2010, p. XI). As bassist Barry Guy states in the preface of the score, “*Theraps* takes you to the end of the fingerboard – and beyond” (Guy, 1976). In that sense, the aspect of disability in Xenakis' aesthetics is to be understood in a broad way as a chance to seek diversity, according to Petra Kuppers who defined it as a chance for new performative dimensions. (Kuppers, 2004). “Disability” gets a dichotomic meaning: while distorting the image and sonic potential of the classical instrumental solo concert performance, it leaves space for feeling “enabled” and powerful. This taps into many players' experience of reaching something new and unexpected. But to reach this state of “ability”, one needs to develop a new strategy of practice.

Performance Practice as focused body hacking

To reach the Liminal, one needs to develop a special strategy to focus on the physical demands to “survive” a performance while reaching another mind-state. In an interview with the composer, Xenakis deliberately referred to this as being a sort of “Yoga”:

Xenakis: I do take into account the physical limitations of performers. [...] In order for the artist to master the technical requirements he has to master himself. Technique is not only a question of muscles, but also of nerves.

Varga: *It's a kind of Yoga, then.*

Xenakis: You can call it that if you wish. (Kanach, 2010, p. XII)

This urges an integral understanding of performance practice that implies not only “learning the notes”, but also “exercising the mind”. What is called “Yoga” here is just an example of a training to combine psychological and physiological development. Besides learning new movements for each new technique, one has to consciously deal with the mental aspects of the piece, resulting in an approach that can be ironically described as a kind of focused

body-hacking.

Integrative Performance Training as key to interpretation

My first step towards physical training was inspired by high-intensity sports training: choosing a set of exercises from the given material and creating a training plan for step-by-step build-up of skills without injury. Since the range of pitch in *Theraps* is enormous, I chose to play the piece with the smallest-measured bass I had, thus reducing risks for overstretching hands in the double glissandi sections. Isolating physically problematic tasks like big position shifts, precise positioning of the harmonics and different types of glissandi, practising not more than 30 minutes a day was needed to avoid hurting the nerves of the fingertips. There are at least four possible ways of doing the glissandi in *Theraps*, depending on the musical context: using finger positions on the string, besides the string, even playing on the nail or on the tip of the thumb. Controlled step-by-step-glissandi in the quartertones can be done in several ways: pressing the string sequentially, controlled sliding, pulling the string sideways and sliding, or even doing a sort of vibrato-glissando to articulate the tone steps. Double-stop glissandi imply finding hand positions for transferring arm weight to string, since pressing injures the muscles; training of stretched positions and stability of finger positions, developing new fingerings since Xenakis' notation is not systematic. Also, I had to include a specific warm-up strategy before playing, including stretching and mobilization exercises for loosening joints and warming up the whole body.

Reaching up to the highest registers needed a full-body-approach to search for the right position of instrument and body, to keep a stable center while doing big movements with both arms. Using the principle of rooting movements in one's feet and body center that is applied in most Asian martial arts, I developed a set of exercises to focus on using the moving energy of my bodyweight instead of applying muscular force for each action. Combining physical warmup with focusing of mind, I chose a set of yoga exercises (the "shavasana" and sun greeting), combining them with exercises from actors' training, using the Integrative Performance method by Experience Bryon (Bryon, 2014). This method was developed for singer-actors, focusing on movement flexibility while singing. The key of it is to use all muscles from the body centre, back and legs. Mentally, the goal is to reach a state of being focused, centered and full in awareness (Bryon, 2014.) For *Theraps*, this means: most of the performer's movements are centered on the body of the instrument (strings and fingerboard) to transfer a maximum of energy into sound, using the peripheral movements to create a circular flow of energy. If this succeeds, then movements will not only feel but also look flowing and effortless. When the movement energy is created and controlled from the legs and the back, one's muscles in the arms, hands and shoulders can relax, allowing for more precise physical control.

While the physical training adapts the body to the demands of the piece, the effects of the mental training are a feeling of "emptiness" when entering the performance, together with an awareness of bodily activity and a balanced breathing. This also implied that after a while of practise, I could get conscious control over my actions during a performance: to find points in the piece where I could relax when I felt pain, or being able to draw my attention to certain musical details. I got familiar with the length and character of the musical sections and could foresee points where I needed to release maximum energy to push myself through.

Sometimes I perceive my own movements like in slow-motion and shape even small details, but losing energy, my perception gets blurred and I have to fight in order to regain control over the rush of musical events. If we take for granted that the performer's feelings are mirrored in the audience, then the "Xenakis experience" as a listener-spectator is not only the feeling of chaos or force, but also contains a sense of focus and consciousness.

Conclusion

While my research has been focused on a performer's physical and mental experience, there are some possible implications and consequences that allow for further development in other fields: One consequence regarding musical practice could be to rethink the way Xenakis' music is taught in conservatories. In recent years, physiological aspects of instrumental playing and approaches towards musicians' health have gained growing attention in the practical context as well as in research. Teaching Xenakis in a performer-oriented way could serve as a model regarding how to learn to deal with extreme mental and physical demands in professional musical performance. Furthermore, this study could serve as a starting point for a new approach towards the analysis of Xenakis' music. In embracing aspects of performance, the analytical insight into Xenakis' music can be deepened towards a holistic understanding of a work not only as a score, but also as part of a tradition of lived experience. Combining perspectives from performance studies and theatre studies with structural analyses of compositions especially helps to understand how performative traditions are coded into scores – a perspective especially apt for oeuvres like Xenakis' which draws heavily, and consciously, on ritualistic and theatrical processes.

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