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# Trance and the auralization of light and smoke

How transcribing disorienting soundscapes  
may provoke a feeling of trance

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# Abstract

Since the 1960s, nightlife has seen tremendous changes, parties held in urban places where everyone gathers to dance now exist: they are called raves, clubs, or nightclubs... When we party in these places, the feeling of trance and ecstasy is precisely what some of us seek to experience. These "modified states of consciousness", as science calls them, are the subject of definitions as varied as they are subjective, but overall they are characterized by "a disruption of the usual functioning of consciousness which causes another relationship to the world, to the body, to identity" according to ethnologist Georges Lapassade.

In a Western Cartesian society, which leaves no room for eccentric behaviour, there is a need to free oneself. These nocturnal events with their hedonistic atmospheres offer a break from everyday life, during which everyone can express themselves freely through body movement, through dance, and through encounters with strangers. In a club setting, there is music, and there are lights. They complement each other and one could argue that if one were to go missing, the other would not provide an optimal musical experience. Lights, smoke, strobe-lights... These "devices" are designed to disorient the listener, pull them out of their body and elevate their consciousness. That said, if history has shown us that through certain shamanic rituals, the rhythm of the drum alone can induce a trance, then is the immersive experience of smoke or light also capable of doing so? Are there disorientation structures of light and smoke that would lead to trance?

Furthermore, there exists a design process called auralization. It is a new way of thinking about space and sound, it allows designers to consider an area's acoustic characteristics in their projects. Designers have taken this tool even further by applying its process to other mediums. This approach has led to new works of art, new digital design projects as well as new ways of thinking sound-design. Would it be possible to create an "auralization" of disorientation structures, — as these structures exist in a designated space, after all — in order to induce trance?

### ***Disorientation : a pathway to trance***

In addition to evoking surprise, the word "disorient" literally means "turn the map to the east". If human beings are capable of becoming aware of the spatial and temporal landmark in which they stand, it is thanks to their perception. From a physiological point of view, the senses are the receptor systems of perception: it is defined as the activity of the mind by which a subject becomes aware of objects and properties present in his or her environment on the basis of information delivered by the senses. In the context of immersion, immersive works or immersive devices (such as virtual reality, for example), in exactly the same way as a dive, the viewer is subject to a sudden temporary disorientation. This is why immersive devices, such as virtual reality, disorient momentarily.

Throughout art history, disorientation has been a common theme among religious painters and architects. Labyrinths, panoramas, painted domes, real-life scale paintings are examples of that. The painted decorations in churches testify to the artists' constant interest in this process. We have all at some point looked up to admire a sumptuous decor in a Catholic church, to the point of nearly losing our balance. The vault of a church, painted in a "trompe l'oeil" technique to depict angels and divine figures, looks like it's drilling a hole in the ceiling of the building, according to Hubert Damisch, in *Theory of the Cloud*. Disorientation therefore means the loss of temporal and spatial reference points through an alteration of perception, a mechanism for synthesizing our senses. Immersion, a process that has always been used by artists, is able to provoke this loss of reference points.

In contemporary art, light and smoke have been used to disorient as well. *Lumino-kinetic* art and its use of moving light bulbs, the *gutai* artist's performances using smoke, and most recently Fujiko Nakaya's work on sculpting smoke into moving shapes... these movements and approaches have made use of intangible mediums to disorient visitors.

However, one project combines immersion and disorientation very well: *ZEE* by Kurt Hentschlaeger. When the spectator enters the space of the installation, when they are "immersed", their spatial and temporal landmarks are abruptly altered by the stroboscopic flashes. Retinal persistence, a physiological phenomenon that describes the duration of the impression of a persistent image in our vision, acts in such a way that our visual environment is completely blurred. In addition, the intense flashes thus registered in vision make it impossible to identify the frequency at which the strobes are activated: we almost lose the very notion of time. With their eyes closed in the face of so much sensory aggression, it becomes impossible for the spectator to orient themselves through vision. At the same time, it is impossible to orientate oneself through hearing, because the soundtrack, spatialised, is composed and played in such a way as to "blur" the points of sound diffusion: the sounds seem to constantly change place, and in this way, hearing is unable to give a clear and

precise direction to the visitor. The sense of taste and smell, which are intimately linked, are also slightly blurred by the thick smoke that fills the place. Finally, the spectator's sense of touch is no longer really relevant, since the only thing that can be touched — if one fails to get close to a wall — is the spectator's own body.

In short, all the senses of the spectator are blurred. The loss of their senses puts the visitor's perception mechanism at fault, so that he or she is no longer able to identify the spatial and temporal landmarks that surround him or her. The spectator is thus disoriented. This loss of perception is underlined by Kurt Hentschläger: "Perception is a malleable process (...) We define it in the course of time (...) and thus everything becomes a habit, a loop in which we are anchored. What I like about Zee is the ability that he has at work to take us out of that loop." Faced with such sensory situations, the visitor is led to assume a total commitment to his experience. As such, he experiences the work in two different ways. The first is characterized by the activity in which he or she is engaged: the apprehension of the work by the body, and the fight against the disorientation that results from it. Subsequently, the work guides the visitor to "let go": a consequence of the visitor's vain struggle against disorientation.

Letting go, total commitment, loss of spatial and sensory reference points, abandonment of self (of one's body)... These are notions that seem to be closer to trance than disorientation. Going against one's conditioning and choosing the loss of control is what seems to describe the beginning of a trance.

### ***The feeling of trance***

Trance is a universal phenomenon that responds to the human need to transcend his "mortal" condition, and it has done so since prehistoric times. It translates into a surpassing of oneself, and is expressed through incredible behaviors (sometimes called "possession", "crisis", or "hysteria"). We are using renowned ethnomusicologist Gilbert Rouget's historical definition of trance in this dissertation: "Trance is characterized by movement, noise, it is a state that is experienced in society. It causes seizures and leads to sensory overstimulation which can lead to hallucinations. Most often, the trance ends in relative amnesia." An important consideration to note, however, is that contrary to what you might think, music is not a necessary tool to provoke a feeling of trance. "It seems that music, at least when the trance is a high point in a ceremonial sequence, is a significant, if not indispensable, factor in a man's or woman's entry into a trance".



Today, trance hasn't changed that much. What has changed, however, are the rituals in which it arises. Today's society most often denies shamanic practices, which are considered irrational. It is the object of the superego, a Freudian psychoanalytical concept discussed by France Schott-Billmann in *La transe et le surmoi*. The superego is an unconscious critical agent that filters our impulses through internalized social norms. Raves, underground parties, places where erratic behaviour can be justified are precisely the new places where modern trance rituals take place. These places enable us to ignore our superego.

Because the superego is a byproduct of years of social normalization, it has become second nature for humans to question each and every single one of their actions, in accordance with what society rules as being correct behaviour. This conditioning (as in, Pavlov's *respondent conditioning*) is what interests us.

In works such as *ZEE* the exploration of space, and by extension, the apprehension of the work is not only enabled through sight, but through the synthesis of all the senses of the body. These immersive works plunge the visitor into an unknown environment, in which the interaction is of a completely different nature. To explore *ZEE*'s space, one must close their eyes and stumble around; for the more timid, crawling around on all fours can be an effective solution. The thick smoke of the exhibition space can force the visitor to breathe through his mouth. This temporary de-conditioning leads to an internal struggle between the visitor and the superego: these unintentionally internalized norms. France Schott-Billmann speaks of a "repression", referring to the African roots of the rhythms of certain contemporary dances. Moreover, this temporary deconditioning in immersive works of disorientation has only one outcome: letting go. The latter is a corollary of the abandonment of the body to the exhibition space. Constrained by the immersive aspect of the work, the visitor, whose commitment is total, cannot bypass or dodge the disorientation.

Because disorientation causes us to let go, there is an interesting link to be made between structures of disorientation and trance. These structures can become triggers for trance. These triggers (or "inducers", as Guillaume Kosmicki calls them, referring to Georges Lapassade's definition) are highlighted in *Transe, musique, liberté, autogestion*, a musicology dossier written by Guillaume Kosmicki. The latter became interested in the "free-party" movement from the late 90s onwards, anarchic ephemeral parties organised mostly in the open air or in abandoned buildings. Lights, smoke, drugs, and not knowing where one stands in a crowded space are all factors that lead to a feeling of trance.

***Auralization: a process that could tie disorientation and trance together***

After exploring the context of trance, and observing the action of disorientation, deconditioning, and letting go of the trance, both in immersive works of light and smoke, we take a look at the process of auralization. The question now becomes: is it possible to auralize structures of disorientation to create music that leads to trance? Auralization is a process that stems from the field of sound design and digital design, allowing a sound retranscription of a space. It was first coined by Kleiner, Dalenbäck and Svensson, three members of the *Chalmers Room Acoustics research group* at the University of Gothenburg. Kleiner defines auralization as "the process by which the sound field of a space is made audible by physical or mathematical models in such a way as to simulate the binaural listening experience at a given position in the space in question".

Passing a sound wave through the filter that is auralization (through the simulation of sound signal bounces in a space for example) has become possible thanks to the development of new technologies. The essence of media has changed over time, and auralization processes are an example of this; from singular non-assimilable elements, different types of media can now be reconciled. The democratization of technologies has enabled artists to take hold of advanced technical devices: in their works, music becomes images, data becomes poetry, and in the case of auralization, space becomes sound.

The process of transcribing different types of oscillating waves between one another gives rise to new works. One of these works is ***Noise Signal Silence***, created by the German artist duo *Quadrature*. Radio antennas, installed outdoors, pick up and listen to the spatial background noise, looking for electromagnetic signals. The waves picked up by the antennas are transmitted live to the installation, placed indoors in a gallery. The full spectrum of the listening field of the antennas is redistributed to a series of percussion devices set-up in a circle: they are long mobile metal rods, which are held horizontally, fixed in their middle by a series of metal supports. When an antenna detects a pulse on a specific band of the electromagnetic spectrum, the corresponding rod is propelled into the air, before falling back under the effect of gravity. As the rod falls back, it hits a small copper section of its support, producing a sound similar to a chime.

In the end, the installation enables the visitor to "listen to the space", literally: to a certain extent, it is an auralization. In the manner of a theremin, (an instrument that produces sound by detecting turbulences in an electromagnetic field), the interpretation of the electromagnetic spectrum is done through not one, but a multitude of sound devices, which allow the visitor to hear a space that is usually inaudible and inaccessible. In fact, the waves of the electromagnetic field are out of reach of the human ear, because they exist at frequencies that are far too high for us to hear.

*Noise Signal Silence* offers the visitor a "soundtrack" of space. A succession of metal flashes that represent invisible electromagnetic impulses. As such, at first sight, it is difficult to consider this sound atmosphere as "musical". However, this classification that we indulge in is subjective; there are many musical genres in which noises, squeaks, "non-musical" sounds are exploited to create music. In the end, how does this music of auralization tie into the feeling of trance?

According to Gilbert Rouget, music "manipulates trance by 'socialising' it much more than by 'triggering' it". It is for this precise reason that through the different rituals evoked in *La musique et la trance*, the music employed in trance rituals varies greatly from places to places. In some South American civilizations, only a drum is used by a shaman to lead to trance. Elsewhere, whole orchestras of primitive instruments lead to a collective trance. Andrew Neher, Alain Daniélou, and many other musicologists have tried to explain and categorize the action of the "drum", the "polyrhythm", or other instruments and musical processes on trance, but in reality, according to Gilbert Rouget, in each civilization there is a different logic, which regulates the relationship between trance and music. This is why the social context of a ritual has more influence on the beginning of a trance than the music.

### **Conclusion**

To sum-up: There are disorientation structures in the immersive works of light and smoke. These are able to lead to a deconditioning, (or from another point of view to a conditioning) to trance; insofar as they temporarily motivate a total commitment, a letting go, and an abstraction of the superego. On their own, these structures do not seem to be able to trigger a trance.

Having said that, the auralization of this disorienting smoke and light is a process that would allow us to bring back a sound, even musical dimension to these works: a dimension that is paramount in the triggering and manipulation of the trance. The auralisation of these mediums is indeed possible, as works such as *Noise Signal Silence* have shown us. Through our observations, the music of auralization seems to correspond to a noise music.

According to Gilbert Rouget, there is a multitude of music and rituals capable of manipulating, provoking a trance. Moreover, music expresses itself in time, and it is only in the continuity of an event that trance/possession can arise. Thus it would seem reasonable to conclude that an auralization of a disorientation structure would be able to induce a trance.