

INSTITUT D'ÉTUDES
AVANCÉES DE PARIS

Conference

The pleasure of music and dance in the brain

Interdisciplinary conversations

Tuesday, 29 and Wednesday 30 March 2016
from 9 AM to 6 PM and 9 AM to 1 PM

Organized by H el ene Neveu Kringelbach (University College
London) and Morten Kringelbach (Oxford /  rhus University),
fellows of the Paris Institute for Advanced Study



H tel de Lauzun
17 quai d'Anjou 75004 Paris
+ 33 (0)1 56 81 00 52
information@paris-iea.fr
www.paris-iea.fr
@IEAdeParis

Presentation

This 2-day symposium will bring together researchers and practitioners with expertise in music, dance and the brain, in order to initiate an interdisciplinary conversation on the fundamental role of pleasure of music and dance in human life.

The study of music and dance is well established within the social sciences and the humanities, and has started to become studied in neuroscience in recent years, but these different approaches are rarely brought together in a constructive conversation.

The main aim is to explore different scholarly perspectives on the role of pleasure and emotions in music, dance and the brain by bringing together these scholarly perspectives with insights into the practice of dance and music.

The symposium will be framed around three interrelated themes:

1/ Music and dance across borders and time

Cross-cultural perspectives on music and dance across time and space, informed by the deep evolutionary history of the brain.

2/ Dance and polyrhythmic music

Polyrhythm as an essential element linking music with dance, with a specific focus on the concept of groove in the brain.

3/ Music and dance as man's medicine

The potential therapeutic opportunities offered by music and dance in rebalancing the brain and body in disease and suffering.

Questions to be explored will include:

- What is the role of pleasure and emotion in music and dance?
- How and why do music and dance circulate over time and space?
- What research, recording and curating technologies may advance knowledge on music and dance?
- What role does polyrhythms play in linking sound and movement?
- How might we account for the centrality of rhythm in human life?
- Is there a link between rhythm and creativity?
- What is the current state-of-the-art research on music and the brain trying to achieve?
- How might research on music and dance help to understand and treat neuropsychiatric disorders?

Program

Tuesday, 29 March

09h15 Welcoming of participants

09h45 Introduction - Morten Kringelbach

Session 1: Music and dance across borders and time

10h00 **Funmi Adewole** (De Montfort University)
Contemporary dance in multicultural Britain in the 1990s

10h40 **Peter Stenbæk** (Musician and Creative Director, Denmark)
Moving bodies, moving minds - a practitioner's perspective

11h20 **Hélène Neveu Kringelbach** (University College London)
Subversion and experimentation in urban Senegalese dance events

12h00 Session 1 Discussion

12h30 **Landing Mané** (dancer and drummer) & **Jamo Jamo Arts**
African drumming and dance performance

13h15 Lunch break

Session 2: Groove, dance and polyrhythmic music

14h30 **Peter Vuust** (Århus University)
Groove on the brain: rhythmic complexity and predictive coding

15h10 **Adrian Poole** (University College London)
Groove in Cuban dance music: an analysis of son and salsa

15h50 **Aurélié Helmlinger** (CNRS/Centre de Recherche en Ethnomusicologie)
A tremendous musical embodiment: cognitive analysis of the spread of steelbands

16h30 **Jean-Pierre Changeux** (Collège de France)
Creativity In Art: A Neuronal Hypothesis

17h00 Session 2 Discussion

Wednesday, 30 March

Session 3: Music and dance as man's medicine

10h00 **Morten Kringelbach** (Oxford/Århus University)
The pleasure of music and dance

10h40 **Jerome Lewis** (University College London)
Music, pleasure and culture: How pleasure in musical participation can drive cultural transmission

11h20 **Carine Plancke** (University of Roehampton)
Rhythmic attuning and the transmission of joy: Relational dynamics in Congolese ikoku dancing

12h00 Session 3 and general discussion

Abstracts

Session 1: Music and dance across borders and time

This theme will focus on cross-cultural perspectives on music and dance across time and space, informed by the deep evolutionary history of the brain.

Funmi Adewole (De Montfort University)
Contemporary dance in multicultural Britain in the 1990s

This presentation will look at the work of four British based choreographers of the African Diaspora: Beverley Glean (Contemporary/Caribbean), Sheron Wray (contemporary/jazz), Robert Hlyton (Contemporary/Hip-hop) and Francis Angol (Contemporary/African). Though their work is very different, what they have in common is that their work is described as culturally diverse, and hybrid.

After providing some background on the contemporary dance scene in Britain in the 1990s, a piece of work by each choreographer will be discussed, using video images as illustration. Attention will be drawn to the different ways in which each choreographer produces hybrid choreographic forms. The interpretations evoked by the symbolism of each piece will also be discussed.

Peter Stenbæk (Musician, Denmark)
Moving bodies, moving minds – a practitioner's perspective

What makes people move on a dance floor? Is there an analogy between the climax generated by chord progressions and orgasm? Why do syncopated rhythms generate pleasure? These are the questions

Peter Stenbæk will address in his presentation. Peter is the creative director of Cosmic People in Copenhagen, an agency working with creative crowdsourcing. He is passionate about music and has extensive experience as a drummer, producer, film director and creative director with Universal Music. Peter was the creative force behind Danish band Aqua's music videos.

Hélène Neveu Kringelbach (University College London & Paris IAS)
Subversion and experimentation in urban Senegalese dance events

In Dakar, Senegal, key social moments like weddings, naming ceremonies, and various associative gatherings are structured around sabar dance events involving polyrhythmic drumming and virtuoso dancing within a circle of participants. Although the drummers are men, and although the organizing associations may include men as formal members, these events are increasingly dominated by women. In this contribution, I argue that the dance events enable participants to subvert everyday norms of behaviour, and to deal with the tensions of every-day life. In dance events, women are able to exclude men through suggestive dancing, all the while hinting at concealed forms of female power. They are able to experience sensuous pleasures and playfulness inappropriate in other contexts, and in some cases older women are able to re-establish the generational hierarchies contested in other contexts. I suggest that the call-and-response nature of the interaction between drummers and dancers is what makes sabar events particularly suited as spaces of subversion and social experimentation.

Session 2: Groove, dance and polyrhythmic music

This theme will focus on polyrhythm as an essential element linking music with dance, and specifically focus on the concept of groove in the brain.

Peter Vuust (Århus University)

Groove on the brain: rhythmic complexity and predictive coding

Musical rhythm has a remarkable capacity to move our minds and bodies. I will describe how the theory of predictive coding can be used as a framework for understanding how rhythm and rhythmic complexity are processed in the brain. This theory posits a hierarchical organization of brain responses reflecting fundamental, survival-related mechanisms associated with predicting future events.

Starting with an analysis of the role of rhythm in the Miles Davis Quintet of the 1960s, I will review empirical studies of the neural and behavioural effects of syncopation, polyrhythm and groove, and propose how these studies can be seen as special cases of the PC theory. Overall, musical rhythm exploits the brain's general principles of prediction and that the pleasure and desire for sensorimotor synchronization from musical rhythm could be a result of such mechanisms.

Adrian Poole (University College London)

Groove in Cuban dance music: an analysis of son and salsa

The groove of Cuban dance music is typically characterized by a dynamic rhythmic energy, drive and sense of forward motion that has the ability to produce

heightened emotional re-sponses and evoke engagement and participation through physical movement and dance. This paper blends theory, ethnography and the analysis of timing data extracted from real-world performances to explore the shared cultural knowledge, socio-musical processes, aesthetics and emotional dimensions of groove in the popular Cuban dance styles of son and salsa.

Aurélie Helmlinger (CNRS/Centre de Recherche en Ethnomusicologie)

A tremendous musical embodiment: cognitive analysis of the spread of steelbands

Trinidad and Tobago steelbands have been well studied in terms of social and political history (Stuempfle 1995, Dudley 2007). But their very rapid spread – they have hit around 50 countries since their invention in the 1940s – is a striking fact that will be explored here through several aspects: their cognitive advantages, their ergonomics, and the aesthetic pleasure they engender. I have shown that their organological particularities advantages the player's memory (Helmlinger 2008, 2010, 2012), and can probably partly explain their success.

But this success is also raising other, correlated questions on musical ergonomics: which steelpans, the steelbands's main instruments, are adopted? Trinidad and Tobago musicians did not invent one musical instrument, but a whole new family of melodic idiophones, the steelpans (also called pans or steeldrums), with a large variety of original note settings, only partially standardized. The study of their spread could benefit from a naturalistic approach (Sperber 1996, Morin 2011). Finally, the intense aesthetic pleasure will be analysed, insisting on the multisensorial characteristics of the performances.

Morten Kringelbach (Oxford, Århus Universities & Paris IAS)
The pleasure of music and dance

Music and dance are ubiquitous sources of what is perhaps uniquely human pleasure. Over the last decade much progress has been made in elucidating the underlying pleasure networks in both humans and other animals. Neuroscientific findings have demonstrated that similar brain networks subserve both primary sensory pleasures and higher pleasures such as music; indicative perhaps of a common neural currency of pleasure. The evidence shows that pleasure is found in cycles controlled by partly dissociable neural mechanisms of liking, wanting, and learning. Similar to any other reward, music and dance can lead to subjective feelings and objective hedonic reactions as part of complex emotional responses. Neuroimaging has made it possible to investigate the brain responses to music and in particular the subjective experience of highly pleasurable aspects of music such as chills and groove. I will discuss how music and dance relies on anticipation to bring about not only deeply meaningful pleasure but even well-being (eudaimonia). As such the power of music and dance could potentially be harnessed to study well-being and to mitigate the pervasive effects of the lack of pleasure, anhedonia, in affective disorders.

Session 3: Music and dance as man's medicine

This theme will focus on the potential therapeutic opportunities offered by music and dance in rebalancing the brain and body in disease and suffering.

Jerome Lewis (University College London)
Music, pleasure and culture: How pleasure in musical participation can drive cultural transmission

Western Pygmy groups highly appreciate music for the pleasure it produces among those making it. The different qualities of pleasure produced are associated with specific forest spirits and so highly valued that the right to call these spirits is not shared on demand, as are other products of human labour, but traded between individuals within and across national and ethnic boundaries. The talk describes how participation in a distinctive musical style reveals and transmits ideal scenarios that form socio-aesthetic standards guiding, but not dictating, culturally appropriate or characteristic action. The temporal duration and spatial distribution of this musical style suggests the existence of a distinctive Central African hunter-gatherer 'civilisation' of great antiquity.

Carine Plancke (University of Roehampton)
Rhythmic attuning and the transmission of joy: Relational dynamics in Congolese ikoku dancing

In rural Punu society (Congo-Brazzaville), ikoku dance events are organized whenever there is an occasion or shared longing to rejoice. This dance, which takes place in the space marked off by two rows of dancers facing each other, evolves in three phases: alternated invitations between the dance rows; an animation phase where all dancers imitate rhythmic steps and jumps proposed by a dancer in the centre of the space and supported by the lead drummer; and the main phase where a couple in mutual adjustment with each other and with the drummer

execute a fast hip rotation. An event is considered successful when joy is transmitted within this progression from mirror relations to a simultaneously shared motion. In reference to specific dance recordings, the presentation will explore the gradual awakening and transmission of joy. Further, in line with the Punu conception of rhythm as a 'primary beat', it will show how rhythm and, more specifically, rhythmic attuning grounds this affective process and conditions the birth of a feeling of symbiotic togetherness that is its desired outcome.

Jean-Pierre Changeux (College de France & Kavli Institute for Brain & Mind Institute UCSD)

Creativity In Art: A Neuronal Hypothesis

Creativity is viewed as the ultimate outcome of multiple evolutions nested within in the human brain at the gene, the cell, the neuronal networks, the cognitive architectures, the socio-cultural levels. Evolution of a genetic envelope, that cannot be simply related to genome size, nor number of genes, has shaped the cognitive abilities and skills required for creativity through the transformation of the brain from hominids to Homo sapiens. But the individual human brain also evolves epigenetically from birth to adulthood in relation with its interactions with the environment. Social, cultural and historical factors then contribute to the development and training of the creative brain.

The creative experience can be viewed as an endogenous process that makes incoming and/or internally generated information globally available to multiple brain systems through a distributed network—or Global Neuronal Workspace—of neurons with long-range axons, particularly dense in

prefrontal, parietotemporal, and cingulate cortex. Within a darwinian framework, creation might then proceed through the internal production of transitory and variable patterns of neurons or pre-representations, resulting in a sequence of local then global discrete synthesis taking place within the personal conscious neuronal workspace of external perceptions, internal memories, and stored emotions, bringing into play "emotions in harmony with reason". To further proceed in the creative act, the artist follow rules which constrain the production and selection of brain pre-presentations. Georges Braque stated: "I love the rule which corrects the emotion". To whom Pierre Boulez replied: "I love the emotion which corrects the rule". Both acknowledge a relation between rule and emotion, even though in opposite directions. These rules of art, may be hypothetically viewed as acquired patterns of connections or scaffoldings, stored in long-term memory. They include, among others, novelty & surprise, the coherence of the parts within the whole (Alberti's consensus partium), parsimony or the most frugal route of expression (H Simon), the tension between bottom-up realism and top-down abstraction, the search for shared and efficient intersubjective communication, and the artist's conception of the world.



École Pratique
des Hautes Études



ENS



ENS
CACHAN



Practical informations

Venue

Institut d'études avancées de Paris
Hôtel de Lauzun - Île Saint-Louis
17 quai d'Anjou - 75004
M° Pont-Marie or Sully-Morland (ligne 7)

Contact

01 56 81 00 52 - information@paris-iea.fr

Connect with us

Website: www.paris-iea.fr

Facebook: www.facebook.com/IEAdeParis

Twitter: @IEAdeParis