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## Choreomusicology I Corporeality | Social Relations



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# the world of music (new series)

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• Cover illustration: Female musicians Ni Kadek Listya Depi and Ni Putu Sri Pebrianti taking a pose in a *gender wayang* competition, Bali Arts Festival, Denpasar 2015. Photograph by Ako Mashino.

# **the world of music (new series)**

**vol. 9 (2020) 1**

## **Choreomusicology I Corporeality | Social Relations**

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# **The Corporeality of Sound and Movement in Performance**

**Ako Mashino and Elina Seye**

## *Abstract*

*We create music and dance with the body and perceive both through it. The performer's body is moulded by the practice of music and/or dance, transforming it into a body with specific structure, competencies, and consciousness. The body of a performer is thus not any human body but a cultural body with particular physical skills and a heightened awareness of corporeality. Furthermore, dance and music often occur simultaneously and can intertwine to the point of being inseparable. Even when music occurs without dance, body movement is still involved in its performance, and dancers may also produce sound. This article investigates the bodily basis of music and dance as well as the significance of human corporeality in choreomusical interrelations. Drawing from interdisciplinary perspectives, it presents a cross-cultural approach for choreomusical analysis that does not a priori divide music and dance into two separate categories, but proceeds from the corporeal practices of music making and dancing.*

## **The corporeality of dance and music**

Corporeality is currently a topic of ardent discussion in music and dance studies. Although the significance of corporeality may seem self-evident because we create and perceive music and dance with our body, the ways in which the human body guides our perception and actions in the performing arts have not yet been fully explored. Therefore, in this article and the two case studies that follow, we focus on the corporeality of performance of music and dance, which we approach by analysing body movement and its relations to sound.

Dance and music share a basic process of creation and perception: both are generated by, and experienced as, movement. Movements can develop in different ways—as sonic, visible, tactile, or kinesthetic phenomena—and can trigger and interact with other forms of movement, corresponding to them, and at times converg-

ing or diverging from them. Dance is generally thought of as visible and tangible bodily movement while music is considered primarily sonic, though, in reality, visible, kinetic, and sonic movements overlap. We will, therefore, take as the starting point of our discussion that the human body and its movements are a significant intersection of, and a shared basis for, dance and music. While we should consider the distinctions each culture makes between different kinds of performative actions, here we try to put aside the customary distinction between dance and music, instead focusing on their corporeality and the body movements that produce both, in order to establish a new perspective for choreomusical analysis.

Our experience of sound and body movements is grounded in the biological dispositions of human beings. Our visual and auditory cognition is directed by the sensorimotor integration of cognitive systems, largely based on physical mechanisms shared by all humans, while the interpretation of the meanings or values of such bodily experiences are deeply embedded in their own cultural contexts. Although such embodied aspects are crucial for both the perception and creation of performing arts, here we use the term *corporeality* to discuss the bodily basis of performing arts with an interdisciplinary approach, combining current findings in areas of empirical study such as neurobiology and psychology with ethnographic approaches (see Clayton et al. 2013:1–16). We find that corporeality as a broader term is more useful in this context than *embodiment*, which refers to “the process whereby collective behaviors and beliefs, acquired through acculturation, are rendered individual and ‘lived’ at the level of the body” (Noland 2009:9).

This is not to imply that human corporeality can be separated from processes of embodiment: the body of a dancer or a musician is always a “cultural body” (Thomas and Ahmed 2004) as well as a physical and biological body. Also Inger Damsholt (2018:25) has duly criticised previous choreomusical research focusing on the body for its narrow formalist and even essentialist approaches that largely ignore cultural differences. In the words of Thomas Csordas (2002:58): “Body is not an object to be studied in relation to culture, but is to be considered as the subject of the culture, or in other words as the existential ground of culture.” We adopt the concept of the “cultural body”—rather than embodiment as the process through which the cultural body is “inscribed” into and/or expressed by the individual’s body (Ness 2008:12; Ellingson 2017:2)—as another starting point for our discussion to avoid ethnocentric assumptions about what constitutes dance and music.

### **The dancing body and the musicking body**

Our corporeality is deeply rooted in the cultural, social, and historical contexts and the ecological circumstances surrounding us, which continuously affect and direct our body to make adjustments to them, while our body simultaneously actively affects them (e.g., Shilling 1993:12, 70–99). This corporeality is plastic, and continuously changing. The experiences of music and dance gradually transform bodies into

ones with specific structures, competencies, and consciousness, able to produce and perceive music and dance, habituating (or embodying) particular cultural values and aesthetics.

Susan Leigh Foster (1997) has written about “dancing bodies” and how they are constructed through the practice and the experiences of dancing: “Each dance technique [...] constructs a specialised and specific body [...] that is unique in how it looks and what it can do” (Foster 1997:241). She emphasises that a dancing body is created through repetition, and that ideas about key areas of the body and their proper relations are internalised through practice (*ibid.*). When learning to dance, one acquires a body that can move in certain ways. Each culture and each dance tradition or genre favours and entrains specific kinds of dancing bodies, which embody cultural ideals of behavior through dance (see *e.g.* Bull 1997). In Javanese court tradition, for example, acquiring a dancing body is associated with appropriate behavior, social status and codes, and cultural identity, and thus dancing can be “a way of making a world” (Hughes-Freeland 2008:20, 23, 77–110).

The body which is culturally attuned to music also has been discussed as a “musicking body” (Rahaim 2012:8) and an “acoustic body” (Yamada 2001:104). Yamada emphasises the significance of bodily competence in order to perceive and react to the music (Yamada 2008:26–31), so dancers who dance in interaction with music, therefore, should certainly have an acoustic body, or a musicking body. As Judy Van Zile (1988:125, 132) powerfully insists, movement is so significant a part of the music event that a musician might be considered as a dancer. We can presume that musicians should also have a “dancing body” in three senses.

Firstly, musicians’ bodies are, in this way, more or less, “dancing,” moving with the music they produce. Even the most modest background musicians, located at the back of the stage, often move their bodies during performance, to say nothing of Michael Jackson or the Korean Samulnori players, who are also skilled dancers. Their movements are often regarded as an expression of their feeling and interpretation (Davidson and Malloch 2017 [2009]; Dahl *et al.* 2010:61; Moran 2013; Clayton and Leante 2013).

Secondly, a musician’s body is a trained body, just like a dancer’s body, created through the repetition of certain movements that correspond with certain sounds. Through practice, the auditory image and the corresponding body motion become increasingly tightly coupled in the experiences of musicians, as has been demonstrated by empirical studies on cognition (see Keller 2008; Keller and Koch 2008; Bangert *et al.* 2006). Jonathan De Souza (2017:9–10) points out that after Beethoven lost his hearing, he would have perceived and composed music in terms of the “kinesthetic analogues” (De Souza 2017:9) coupling body movements and sonic components, which were deeply inscribed in his body and mind through long-term experience as a musician. Such coupling can be acquired by anyone who accumulatively practices and experiences the sound-movements correlations.

Thirdly, the musician’s body would also include the competence to perceive and react to others’ dances. In order to effectively interact with dancers in a perfor-

mance, musicians should know how to incite dancers to move and negotiate with them through the sound they create, even while their actual body movements might appear minimal and are not interpreted as dance.

Just as the musician's body is more or less a dancing body, the dancer's body may also be a musicking/acoustic body, which actively contributes to producing sound either incidentally or as intentional self-accompaniment (see Kealiinohomoku 1965). The sounds of the shoes worn by tap dancers or the ringing tones of *ghungroos* tied to the feet of North Indian Kathak dancers definitely constitute a significant part of the music as a whole, together with other musical instruments. Even when they do not make audible sounds, dancers may directly or indirectly control the music, to start, stop, increase or decrease the tempo, and so on, using cues structured as body movements, or through more subtle interactions. In such instances, the dancers also actively "play music" through their body, much as a conductor's physical movements are not simply controlling the orchestra to generate the music (Dineen 2011:146, 148; see also Luck 2011).

Performing arts emerge as a multi-sensory integration of body movements and sound: aural, visual, tactile, kinesthetic, and olfactory information might pour into us simultaneously, fully consuming our body and mind. Focusing on the body, we can clearly understand the overlap, intertwined-ness and interaction of music- and dance-making.

### **Studying dance as music or music as dance**

Several ethnomusicologists have developed approaches that challenge prevailing conceptions of music and dance. In particular those attempting to describe dance as music, or music as dance, have provided perspectives that are relevant to our discussion.

Gerhard Kubik (1972) described and analysed dance and music activities of the boys' initiation school (*mukanda*) in Eastern Angola, focusing on the body movements. Based upon his transcription of sound-producing movements from silent film, Kubik remarked that, even in the seemingly simple rhythms played with sticks to accompany songs, there was "a difference between a listener's auditory impression and a performer's motor concept of sound patterns" (Kubik 1994:367), that is, certain stick patterns would sound the same but would not be produced with the same pattern of movements.<sup>1</sup> Kubik also described a dance movement in which the dancer's skirt, made of tree bark fibres, produces a sound that local people imitate as *ka-cha-ka-cha-ka-cha*. These kinds of mnemonics are used as teaching devices for both music and dance during the *mukanda* (Kubik 1994:371–372).

Several other scholars have also discussed the body movements in instrumental music. John Baily (1977), for example, analysed the musician's body movement and its interaction with the morphology of a *dutār*; an Afgan long-necked lute, and Timothy Rice (1994) emphasised the significance of finger movements as a part of

the conceptual source that generates musical ideas in Bulgarian *gaida* bagpipe playing. The approach to an instrument as a specific affordance for the musicians' body to create music has been further developed by De Souza (2017, chapters 3 and 4 in particular) through the concept of "compositional instrument."

It is noteworthy that these studies commonly describe an instrument as a space and environment which allows the musicians' body to explore the possible positions and movements in order to create sound, and portray musical body movements as resembling dance.<sup>2</sup> For example, Bell Yung (1984) analyses the physical practices of *guqin* (Chinese zither) playing, in particular hand movements, and proposes that the player's hands can be envisaged as two dancers, their movements as choreography, and the musical instrument (the top board in this case) as a dance space (Yung 1984:508–510). All these approaches suggest that the music can be interpreted as spatial movement, in addition to sonic movement, and that the instruments can be the active interface affecting the process of creating the music as well as its structure.

As music performance might be seen as dance, dance might be heard as music. Sylvia Nannyonga-Tamusuza (2015), in her analysis of Baganda *baakisimba* performance, conducted an experiment adding devices that make sounds to several parts of the dancers' bodies, so that their movements were amplified to become audible. Her analysis showed that the rhythms of the dancers' body movements and those of the drums and idiophones corresponded to, and interlocked with, each other, even if the rhythms of the dancers could hardly be heard in ordinary performance.

Similarly, Elina Seye (2014:63–64, 71–74) analysed the dance-music interactions in the Senegalese *sabar* dance events by notating the rhythm of the dancers' feet—which the drummers say they follow when playing but usually cannot be heard—and combining these notations with notations of the musical patterns (sounds) played by members of the *sabar* drum ensemble. The aim was to show how the dancer's movements relate to, and often also lead, the sounds of the ensemble of *sabar* drummers. In contrast to Nannyonga-Tamusuza's experiment, the movements in this study were not "amplified" into sound, but their rhythmic form was transcribed with the help of video footage.

Both music and dance evolve in space and time, revealing themselves as body movement. It is tempting to say that music is partly dance, and dance is partly music, or at least potentially can be such in many performance traditions whether the "dancer" may or may not produce sound, and the body movements of the "musician" may or may not be interpreted as dance. In any case, we cannot state with certainty that music and dance are "similar but distinct phenomena" as Judith Lynne Hanna (1982:68) does, but rather that they are overlapping and sometimes inseparably interrelated. Therefore, we are suggesting an approach that avoids *a priori* categorisations by studying body movement and sound rather than music and dance.

## Musical gestures and body movement

Recent empirical studies have discussed the significance of body movements in the interaction between co-performers and between performer and audience, often with a focus on “musical gestures” (see Godøy and Leman 2010; Gritten and King 2011; Lesaffre *et al.* 2017). Laboratory experiments and computer analysis have provided valuable insights especially regarding our biological and psychological dispositions, whereas ethnographic research, by contrast, has shown how such musical gestures play out in their cultural context (*e.g.* Qureshi 1990). These two approaches successfully complement each other in recent ethnomusicological studies (see Clayton 2007, 2018; Rahaim 2012; and Pearson 2013, 2016).

Although musical gestures are sometimes discussed as more or less equivalent to body movements, the word *gesture* usually denotes particular body movements with specific meanings. For example, Rolf-Inge Godøy and Marc Leman (2010:5) define gesture as “a movement of part of the body [...] to express an idea or meaning”.<sup>3</sup> In some writings, however, this concept is used metaphorically. For example, Richard Middleton (1990:201) defines musical gestures as “‘cognitive shapes’ (with affective and motor connections) which lie behind musical structures.” Middleton understands them as sonic movements, such as a melodic motif or phrase, which imply a kinetic process. Therefore, the listener easily receives and interprets these structures of sound through their bodily experience.

While the studies on musical gestures offer an abundance of inspiring insights, here we prefer the term “body movement” rather than gesture. The main reason is that it is sometimes hard to discern whether or not a certain unit of movement during a performance has a clearly defined meaning. Besides, meaning is culture-specific and highly dependent upon the context. Therefore, body movement is the more inclusive term that enables us to consider all movements occurring in a performance, but we may also refer to movements as gestures when appropriate. Furthermore, body movement might not simply convey a meaning, as encoded into a gesture by the performer and decoded by the perceiver; instead, the body itself—as a cultural, musicking, and/or dancing body—is able to carry many layers of meanings.

Furthermore, bodily expertise and the kinaesthesia of the musicians can be inseparably synthesised with instrument morphology, which can affect the musical structure (Baily 1977:275, 1985), process of composing (De Souza 2017), and understanding of the musical theory (Tani 2017). In his comparison of *dutār* and *rebāb*, Baily (1977:329) suggests that the motor patterns required for these instruments respectively constitute the *motor structure* of the music specific to them. Tani Masato (2017:148) similarly claims that such kinesthetic positions, the movements of fingers in particular, and the morphology of the musical instrument affords specific understanding and playing techniques of the tetrachords, the basic units of Persian classic music.

The body, having deeply habituated certain physical behaviours through training and experience, can lead the performer’s creativity. Paul Berliner (1994:152)

writes that in jazz, the “physical representation of the beat,” or the “dance” of the musicians, “inspires soloists’ rhythmic conceptions, which in turn provides renewed physical stimulus that finds immediate expression in improvisations.” As a cultural body, the human body always assumes, and is able to transmit, more knowledge than that which the person is able to know consciously, and with this embodied or “tacit” knowledge (Polanyi 1966) the musicking and dancing bodies of trained performers can indeed sometimes lead them to discoveries that they might not have reached through conscious, analytical thinking. As dance scholar Carrie Noland (2009:7) has stated: “If moving bodies perform in innovative ways, it is not because they manage to move without acquired gestural routines but because they gain knowledge *as a result of performing them.*”

### **Approaching music and dance as body movement**

Building on the ideas presented above, we propose a new approach where we do not *a priori* categorise certain kinds of body movements or movements of certain performers as dance and other movements as mere tools for producing musical sounds, but rather accept the simple fact that body movement is essential for both music and dance. Music is, as Baily (1985:237) also writes, the sonic product of such movements. We proceed here from Hanna’s (1992:318) statement that while body movement is always necessary for producing music, music is not indispensable for dance, although the body movements of a dancer may of course produce sound (see also Hanna 1982). It thus seems reasonable to approach the interrelations of music and dance with a focus on body movement as their common denominator.

Other scholars have similarly discussed the proximity, permeability, and compatibility of music and dance. For example, Jörgen Torp (2013), following the discussion of Marcello Sorce Keller (2012), writes that “music could be considered as part of the overall terms of ‘rhythm’ and ‘movement,’” because “music and dance share time in parallel when performed together” (Torp 2013:244). He also wonders whether music can be adequately equated only to sound and suggests that movement might be more appropriate (*ibid.*).

Sound consists of physical vibrations, meaning that it is essentially audible movement. While movement generally refers to a change in position, which is related to space, the process of movement is tied to time. Musical sounds are commonly perceived as something that moves in space and time: the temporal process of subsequent sounds with different frequencies or durations is, for example, commonly perceived as “musical movement,” and is often described with spatial metaphors, such as “ascending” or “descending.” Sonic movements are often parallel to the body movements which generate the sound in performing arts, but they are not necessarily convergent; they can diverge maintaining some degree of autonomy. This is one reason why we reserve the theoretical distinction between sound and body movements

for our analysis here, while the two might be perceived as inseparable or interpreted as oneness in some cultures.

Furthermore, studies have shown that dance spectators are likely to experience dance corporeally and not only visually (e.g., Parviainen 2003). Judging by the numerous spatial and kinetic metaphors used to describe music, musical sounds are, similarly, not only heard by ear but felt in one's whole body. The perception of music involves what Godøy (2011:71) calls motor-mimetic cognition: the listeners may mentally simulate sound-producing body movements (see e.g. Frith 1996: 192; Tarvainen 2018). In certain contexts, dancing can be understood as an integral part of listening to music (Frith 1996:142) or even as a way of hearing, in the sense of being able to respond to music through appropriate movement. According to John Chernoff (1997:23–25), in the West African traditions he has studied, hearing the music correctly requires feeling the beat of the music, although it may not be emphasised acoustically, as well as being able to demonstrate it with movements. As participants or spectators of a performance, then, we actually experience both music and dance as a multi-sensory synthesis (see also Hanna 1992:319, 1982:64).

To emphasise the shared basis of music and dance, we will proceed with the consideration of body movements, which include the movements of musicians and dancers equally, thereby reconsidering the term “dance.” Such conceptual shift allows us to consider body movements of musicians, ranging from choreographed gesticulation to unconscious and subtle movements, in conjunction with dance. Similarly, we need to reconsider the validity of the term “music.” The most enduring and widely accepted definition of music might be Blacking's “humanly organised sound” (Blacking 1974), although recently some scholars have challenged its heavily human-centric perspective (see Feld 2017; Brabec de Mori 2018; Sorce Keller 2012), and reexamined the meaning and the arbiter of “organise” (Sakakeeny 2015:112).<sup>4</sup> Although we will concentrate here on sounds produced by humans, we will use the term *sound* as a more encompassing term, because sounds which may interact with body movements are not limited to those intentionally organized as music, which is defined differently in each culture.

The consideration of sound and body movement instead of music and dance will enable us to present a new approach for analysing the relevant interactions within a performance without drawing boundaries between music and dance or different kinds of body movements before interpreting their role and significance within the performance being analysed.

### **A new framework for examining interactions of sound and body movements**

Movements, both sonic and kinesthetic, can dynamically generate and trigger other movements in a performance, whether in a single person or among multiple participants. Some of the movements make an audible sound, while others do not. Both body movements and the audible sounds produced may trigger other body move-

ments, which then have their own effects and so forth. Thus, body movements and sound connect within a performance in multiple ways, circulating among multiple bodies, as if mutually converting and reinforcing creative energy.

Ethnomusicologists, ethnochoreologists and anthropologists have struggled to clarify the complicated interactions between multi-sensory elements in performances. For example, in the study of ritual performances in Cuba and West Africa, Amanda Villepastour (2018:270–272) suggested a pentagonal diagram, in which spoken word, vocal music, instrumental music, dance and gesture are located at the vertices, reworking a framework proposed by V. Kofi Agawu (2016:162). The diagram by Villepastour includes three continua, with binary components (isolated/full-body, semantic/non-semantic, and silent/sounded). The diagram represents a holistic view of sound-body relationships and suggests that all of these components connect to each other to support the participants in becoming *orisha*, holy spirits, during a ritual. While Villepastour's diagram is also likely to be a useful tool for analysing performances in other contexts, we propose a similarly encompassing but simpler framework to categorise the sound-body movement interactions for cross-cultural examination.

We suggest five possible relations between sound and body movements in a performance:

- (a) the sound and body movement intertwined in a single performer;
- (b) the sound of a performer and the sound of others;
- (c) the sound of a performer and the body movement of others;
- (d) the body movement of a performer and the sound of others;
- (e) the body movement of a performer and the movement of others.

Here, these relations are interpreted from the perspective of a single performer, while the “others” may be anyone present. Also, the term “performer” is used in a broad sense and can denote any of the actors involved in the process of creating a performance, including musicians, dancers, and audience members. “Sound” refers here to anything audible, not only to sounds that might be categorised as music. Although sounds are produced by body movement, some performers may concentrate only on the sound, not on the body movements through which it is generated.

Below, we briefly describe these five possible relations, with reference to the authors' own research examples of Senegalese *sabar* music and dance and the Balinese instrumental music, *gender wayang*, which will be discussed in detail in later chapters.

(a) *the sound and body movement intertwined in a single performer*: Both *sabar* drummers and *gender wayang* musicians must of course move their hands and arms to strike their instruments to produce sound. However, it is not uncommon for *sabar* drum ensembles to play show pieces that include a preplanned choreography, such as the musicians walking in a line while playing or adding hand movements that do not produce sound, and *gender wayang* musicians may also consciously display the choreographed movements in performance for competition.

(b) *the sound of a performer and the sound of others*: In both *gender wayang* and the *sabar*, the musicians naturally listen to the sound of each other to create their own sound. The leader of the ensemble also supplies musical cues when, for example, switching to another rhythm, and expects specific patterns of sound as the response.

(c) *the sound of a performer and the body movement of others*, and

(d) *the body movement of a performer and the sound of others*: For the audience, (c) and (d) might be experienced as a synthesis, but for the performers they are experienced as different types of interaction. In shadow puppetry called *wayang kulit*, which *gender wayang* accompanies, the puppeteer's voice, the sound of *cempala* (a short wooden stick held in the hands or toes), and the movements of the puppets lead the whole performance, whereas the musicians basically follow the puppeteer. But at certain points, the puppeteer also follows the music, in order to precisely fit the puppets' movements to sound. In *sabar*, the sounds of a rhythmic cue played by a lead drummer can trigger the body movements of other musicians to produce certain sounds, and the dancer expects a sonic response from the lead drummer to her movements.

(e) *the body movement of a performer and the movement of others*: In *sabar*, dancing typically occurs as short solos, but it is also quite common that two or more people dance simultaneously, either by accident, without paying much attention to the others dancing at the same time, or sometimes intentionally. In the latter case, the people dancing together usually try to mirror each other's movements. In *gender wayang* competition, where the music is performed as purely instrumental without puppetry, the musicians often perform with a prepared choreography, before the first stroke and between phrases. They sometimes organize their body movements physically even without creating sound.

As can be seen in our examples, certain modes of interrelations may be more characteristic to specific performance traditions. In the *sabar*, one can see that the relations between the body movements of the dancers and the sounds produced by the drummers (modes c and d) are indeed central. The *sabar* thus largely corresponds to the widespread idea that the body movements of musicians are only of instrumental value, as the means for producing sound. However, one can also similarly claim that the *sabar* dancers' ultimate aim is to produce sound, to trigger a specific audible response from the lead drummer, although their body movements are likely to serve other purposes as well.

In the case of *gender wayang*, all of these interactions—between sound and body movement, and between a performer and other performers or the audience—may occur in a performance at different levels and with different significance according to the context, such as puppetry, rituals, competitions, or lessons. While beginners who are eager to grasp what their teacher is doing, may be more focussed on the body movements of their teachers, experienced performers may only peripherally perceive their co-performers' body movement. Hence these models can help analy-

sing various modes of interaction between multiple agents, which co-occur in complicated ways in a single performance.

While we have emphasised the synthesis of sound and body movements, it should be remembered that they are not always convergent, even when they co-occur in performance. Paul Mason (2017) cited the case of *silek minang*, a traditional fighting art or combat-dancing in West Sumatra, where the *silek* practitioner tries to be as free as possible from the influence of the music, so as not to step with the rhythm, lest their movements become predictable and they can be easily attacked by an adversary, though the music will still have potential effects on the performer's mindset and the perception of the audience (Mason 2017:225).

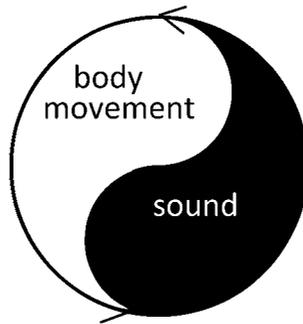
Ako Mashino (2014) recounts that in Balinese *arja*, a musical theater, the performers' attention toward the other performers frequently changes over the course of the performance. At the moment when the actor/actress sings a free-rhythm melody, she/he appears unconcerned about the details of the music, because neither song nor dance necessarily fully converges with the music. But after only a moment, near the end of the phrase, the actor/actress becomes highly attentive in listening to the music, to catch the right timing to end their movement pattern at precisely the same time as the end of the gong cycle. The musicians, on the other hand, are presumed to maintain their attention on the actor/actress throughout the performance, whilst they most attentively watch the actors' specific foot movements to tune into their timing (Mashino 2014:102–105). Even in a single performance, an abundance of sounds and body movements are created, which sometimes converge and sometimes diverge, intentionally or not, and with varying degrees of consistency.

In collaborative performance, the performers in their various roles, as well as the audience members, may have different perspectives on the interaction taking place, reflecting the roles and actions they assume. The co-existence of different views, however, does not preclude them from sharing in a performance and contributing to the process of generating it. Consequently, it depends on the decision of the researcher as to the kinds of interactions they choose to focus on in their analysis or if they try to cover all modes of interaction within the performance under study.

### **Complex interactions**

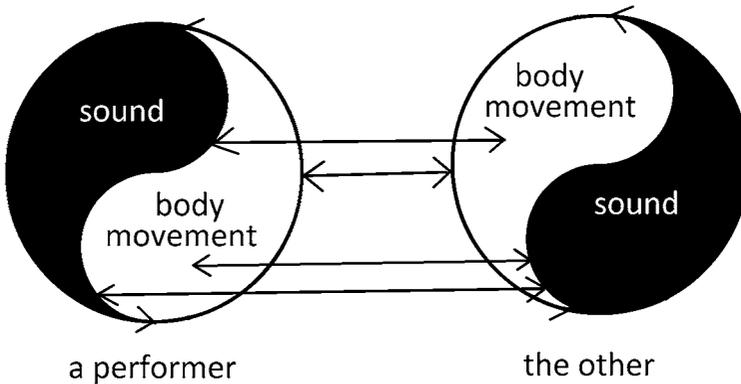
To examine how the complex network of these interactions play out in a performance and describe the dynamics generated between the participants, we can strengthen our categorisation by applying three categories proposed by Martin Clayton (2013:30) for discussing musical entrainment in performance: intra-individual, inter-individual (or intra-group) and inter-group. Although Clayton considers “inter-individual” and “intra-group” as synonymous, we feel that they can be different, especially from the performers' point of view. We will thus separate them, to demonstrate the multiplicity of possible relations within a performance.

Figs. 1, 2, 3, and 4 visualise the possible interactions between sound and body movements which we have listed above as (a) to (e), integrated with the intra-individual, inter-individual, intra-group, and inter-group categorisation. Each circle in the figure represents a person. Besides the musicians and dancers, the audience may also participate in these interactions, by reacting to the performance with applause, booing, shouting, or moving their own bodies. The arrows in the figure indicate possible interactive directions, but not all of them necessarily occur equally in practice. Fig. 1 visualises intra-individual interaction of an individual's own sound and body movements, which corresponds to mode (a) in our categorisation.

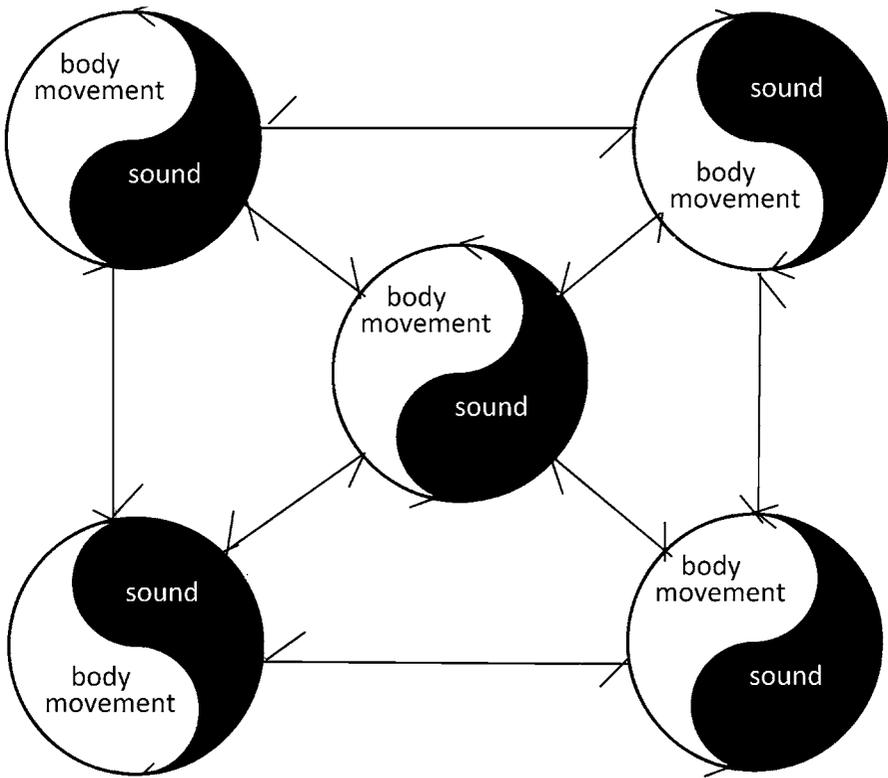


*Fig. 1: Image of intra-personal sound-body movement interaction.*

Fig. 2 is the case of inter-individual interaction, where there are two participants in the performance. Any type of the sound-body movement relations we have listed can occur in the process, as the performers constantly interact with each other through sounds and various kinds of movements.



*Fig. 2: Image of possible inter-individual sound-body movement interaction.*

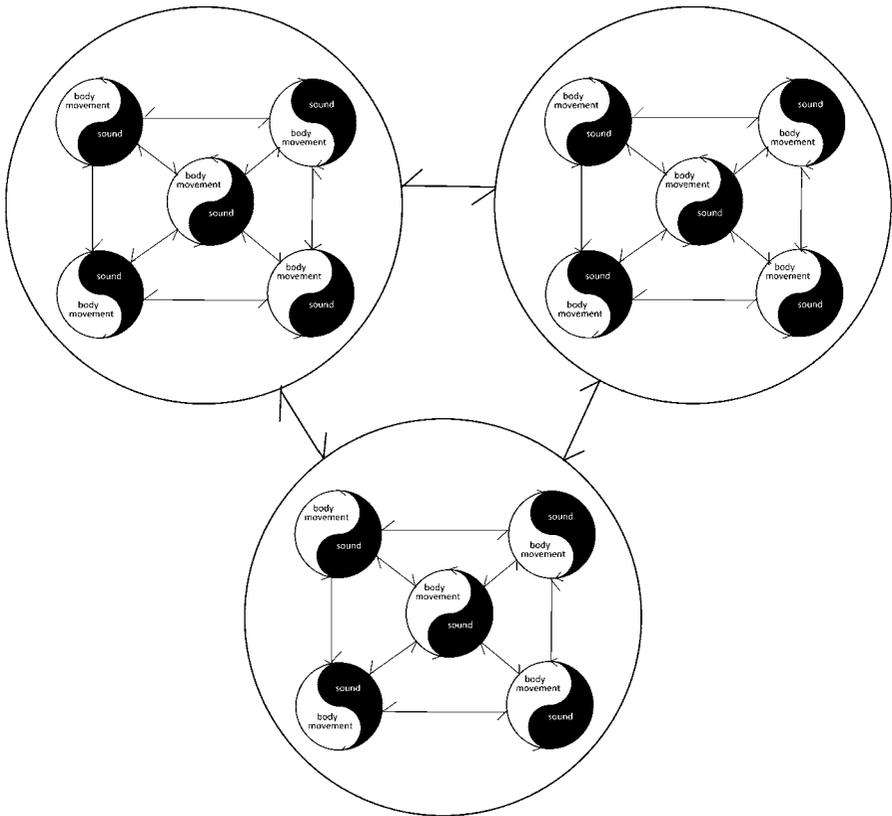


*Fig. 3: Image of possible intra-group sound-body movement interaction.*

In an ensemble, musicians naturally constitute a more complex interactive network, hearing, seeing the others and moving themselves as depicted in intra-group interaction in fig. 3. Each performer pays different attention to the various elements of other participants' movements at each moment of the performance: The drummer might attentively watch the dancer's body, for example, while the other musician is concentrating exclusively on the beat of the drummer and the dancer might pay attention to the audience reactions rather than their co-performers.

Some participants might form smaller interactive networks within a performance: for example, a group of musicians can establish a cohesive musical network, which reacts as a whole to the coordinated body movements of a group of dancers (inter-group interaction, see fig. 4).

These diagrams offer a starting point from which to overview and explore in detail the possible interactions between various agents and various elements. Each performance formulates its own interactive network, depending upon the genre and context, which naturally can transform even from moment to moment in a single performance.



*Fig. 4: Image of possible inter-group sound-body movement interaction.*

To explore these interactive circulations that create a performance, we may ask multiple questions: How do the sound and body movements circulate inside individuals and within a smaller or a larger group? How is each loop bound to other loops? Are they as a whole highly organised or not? How does the individual or a group experience and interpret the emerging dynamics? Besides examining these varied modes of interactions emerging within a performance, we should also explore the overall dynamics between performers, the ways in which a performance is shaped through interactions, and how they are embedded in, and recreate, the social context.

In a performance, each one of these interactions simultaneously creates and exchanges aural, visual, and kinaesthetic movements with one another and contributes to the dynamic circulation as a whole, reflecting and reproducing a particular cultural concept of gender duality, desire, and power. Thus, the sound and body movement interaction in a performance has manifold dimensions as a constellation of such circles as depicted in the figures above. The process of interactions should also be examined in their social and cultural context to understand which interactions are

culturally significant within a performance and to interpret their meanings. For example, Henry Spiller (2010:143–209) describes the West Javanese dance-music culture as an “erotic triangle,” in which the *ronggeng* (female professional dancer) as an object of desire for men, together with the powerful drum sound (created by a male professional musician), offer a dancer (amateur male) a liberating, and at the same time regulating, power to dance. The circulation of sound and body movements in performance thus reflects and also creates social and cultural dynamics.

### **From interactions to inter-corporeality**

While all sound and body movement components could potentially interact with others, some elements can be more tightly intertwined to shape a powerful circular loop serving distinctive functions to elicit specific types of reactions. One can also find highly systematised organisations incorporating performers with distinct roles, competencies, and knowledge, that all contribute in activating the interactive networks which comprise the roles assumed by performers and the relationships or links between them (Brinner 1995:169). Further, as Kendra Stepputat (2017) discusses, the relation between sound and bodily movement can have a wide variety of intensity, leadership, and levels of improvisation. Therefore, we need to carefully consider the culture-specific and context-dependent aspects of the interrelations between sound and body movements. The categorisations we have developed in this article are relatively simple tools for analysing complex performances, but in our experience they can be helpful for identifying the often minute details of choreomusical interactions.

In a performance created through interactions among multiple participants, performers must acquire a heightened sense of the actions of others in order to respond immediately. For example, Julian Gerstin (1998:141–142) describes the concept of *réciprocité*, in Martiniquan *bèlè*, a process in which the drummers and dancers respond quickly to subtle cues. The ultimate in *réciprocité* is “when dancers and drummers tune into one another so well that no cue is needed,” and the drummers simply know what the dancers will do in the next moment from their experience and knowledge. Made Mantle Hood (2017:51) proposes that similar things can occur among Balinese dancers and drummers, who feel an “unrestricted potentiality” that frees both to *makebar* (take flight) together.” Such complicated and deeply incorporated interactions with others can bring the performers to an inter-subjective, or more accurately, inter-corporeal milieu, in which the dancer moves the musician’s body and the sound moves the dancer’s body. The embodiment of the cultural, musicking and dancing bodies form the basis of such inter-corporeal interactions, but we claim that the training and repetition also develops the performers’ corporeal consciousness, something that Csordas (2002:244–246) has called *somatic modes of attention*, that is, “culturally elaborated ways of attending to and with one’s body,” a heightened sensitivity to one’s own as well as other people’s corporeality.

In the interactive complex, performers often simultaneously perceive and create sound or movements in multiple ways, responding to previous sounds and movements with their own, and are thereby involved in a vortex of recurring interactions between self and others. These interactions also persuade the audience to be involved in the highly inter-subjective milieu of a performance. Such an inter-corporeal experience involving multi-sensory interactions and a sense of connection with others, sometimes to the point of sensing as if being part of the same body, might be the driving force behind participation and creation in any performing art.

## Notes

- 1 Although Kubik does not give an explanation for this difference, we assume that the different body movements that produce the “same” musical pattern are actually likely to produce slightly different accentuation or micro-timing in sound, and therefore one cannot arbitrarily choose which movement pattern to use.
- 2 David Sudnow (1978), for example, also describes the improvisation of jazz pianists primarily in terms of kinaesthesia of the hands and fingers on the keyboard.
- 3 Jensenius *et al.* (2010:19) also define musical gesture as “an action pattern that produces music, is encoded in music, or is made in response to music,” which they relate to movement, defined as “the changing of a physical position of a body part or an object, which can be objectively measured.”
- 4 Steven Feld (2017:8) also proposes the concept of acoustemology as an alternative to ethnomusicology, adding post-human and post-humanist perspectives.

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