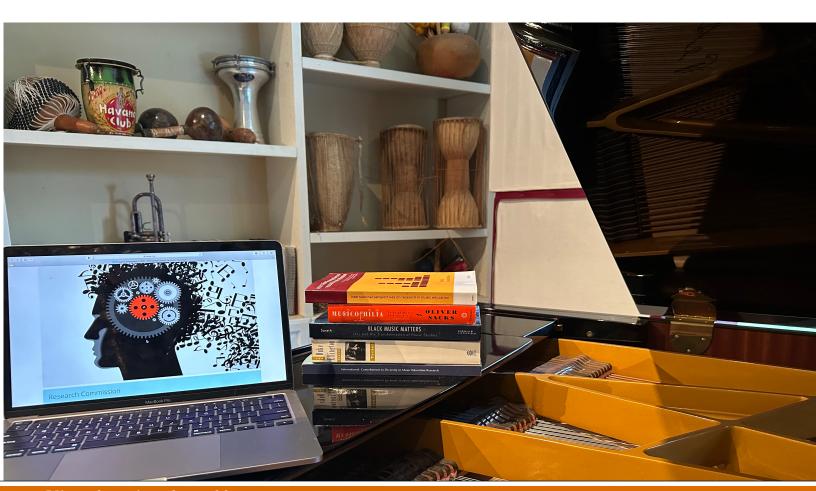# International Vistas of Music Education Research

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# The Benefits of Multimodal Analyses for Children's Musical Games: Case Studies from Greek School Playgrounds

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## Abstract

Children's multimodal encounters of musical games in the playground have been attracting growing attention in the field of music education research. The multi-layered ways of communication, which children develop during their performances, have been examined through close observation and interviews with the participants. Very recent research has also drawn on social semiotics and multimodality as an analytical tool to make sense of children's musical activities in groups. The research focus is on the meaning that participants create and receive in diverse ways, such as through body, face, gaze, and gestures, as well as speech. This paper presents findings from a new multimodal analysis of children's musical games in Greek school playgrounds. The study draws on a larger ethnographic doctoral research that took place in nine primary school playgrounds in Greece. Data were collected during daily school visits over a 6-month period through observation of children's musical play during breaktimes, plus semi-structured interviews with 53 participants (aged 8 to 11 years old) and video recordings of their musical performances. A multimodal framework was developed to analyse the video recordings and examine children's multiple ways of communication in their musical games. Four modes were identified: a) the visual mode, including players' and observers' visual contact and gaze; b) the kinaesthetic mode, including body posture, facial expressions, and gestures; c) the haptic mode, including distance between the players, personal spaces, and tension in touch; and d) the aural mode, including rhythm, melody or unpitched chant, text of the game and participants' speech. The material was

inserted in a table which allowed for a detailed, frame-by-frame analysis. Then, a rich corpus of narrative data with the description of events in the musical games was produced. An illustrative, example case study is reported to provide a better understanding of children's multimodal musical and socio-cultural encounters. The findings suggest that the participant children used a variety of modes to express feelings and deal with hierarchy issues during the games. They negotiated their performative and social roles exploring their musical and social identities respectively. The structure of the games allowed for participants' entrainment, thus ensuring the flow of the performances despite the occasional interruptions. Implications from this study include allowing for multimodal expression in the music class, providing opportunities for intra-personal and inter-personal exploration, and using musical games to foster interaction among students in multicultural environments.

## Introduction

Social semiotics is the study of how meaning is created in social situations, such as through signs; multimodality refers to the variety of sources and processes by which meaning is internalized and negotiated, such as by word and image. Pioneered in the work of Gunter Kress (1940-2019), multimodality and social semiosis (*cf* Böck & Pachler, 2013) consequently offers an ideal lens to make sense of children's collective musical activities through their socio-cultural encounters in school spaces.

Multimodality analysis enables an understanding of the complex events that occur in socio-cultural encounters through the study of the diverse social resources (modes) that participants use (Jewitt & Kress, 2003; Kress & Van Leeuwen, 2001). The modes serve different purposes for communication and representation in each social and cultural group; thus, they are studied within a specific context. The research focus is on the meaning that participants create and receive in diverse ways, such as through body, face, gaze, and gestures, as well as speech. A multimodal analysis of the resultant video-recorded musical games concerns a need to understand the multiple ways through which children communicate in their musical interactions in these settings. It also concerns an interpretation of possible social meanings and cultural functions that these modes might carry for participant children. Depending on their needs and interests, children are observed to move between modes during their play, reworking their meanings (*cf synaesthesia,* Kress, 2003).

Studies by Addo (1997) in Ghana and Marsh (2008) in Australia have highlighted the need for an analysis tool that acknowledges the multidimensionality of children's musical performances, and which a single musicological perspective cannot reveal. These two researchers investigated the ways that music, text, and

movements in children's musical games were interwoven to transmit social and cultural meanings. Addo (1997) focused on rhythm, melody, form, text, structure, speech, and movement, and researched how children's musical cultures in Ghana are reflected in these elements. Relatedly, Marsh (2008) focused on rhythm, tonality, contour, range, musical intervals and added symbols to music scores to depict the movements, as well as short texts to describe participants' interactions.

Two subsequent studies of children's musical games, by Bishop & Burn (2013) in England, and by Harrop-Allin (2010) in South Africa, applied multimodal analyses to include a range of modes that had previously remained unexplored. Bishop and Burn (2013) highlighted the importance of paying close attention to the fine detail of movement, as opposed to words and melody that had been 'more often attended [to] in the past' (p. 116). In their analyses of musical games, they also included participants' gaze, proxemics, and facial expressions. Additionally, Harrop-Allin (2010) analysed children's musical games as cultural texts, with the focus being on the sound, visual, spatial, and kinetic modes. Collectively, these studies revealed several common themes, including aspects of participants' (musical) identity, social relationships, appropriation of resources from traditional and media culture, emotional engagement, and the expression of feelings.

## Method

This study draws from a larger ethnographic doctoral research project that investigated the cultures of children's musical games (*cf* Saltari & Welch, 2022). It took place in nine primary school playgrounds in Greece across three different geographical areas. Data were collected during daily school visits over a 6-month period through observation of children's musical play, plus semi-structured interviews with child participants, and also video recordings of their musical performances. The ethnographic research study was conducted in three phases: Initially, the whole school student population was observed for about 2-3 days and incidents of musical games were recorded in a diary. In the second phase, the focus was specifically on small groups of 10-20 children from each setting who played musical games regularly. In the third phase of the study, N=53 children participated voluntarily in video recordings of their games and associated semi-structured group interviews, which took place towards the end of the 10-day visit period.

This research article focuses in particular on the video recordings of children's musical games, which were collected during the third phase of the larger ethnographic study and presents findings from multimodal analyses of these recordings. The research question which I sought to answer was: 'Which ways of communication do children develop during their musical games in school playgrounds'? This was interrogated through close examination of the flow of the games and participants' actions. More specifically, particular incidents which appeared to be critical for the continuity of the performance were identified, such as the different movement, rhythmic, or text patterns performed by the players. The investigation of any interrupting incidents, which would either bring the game to a halt or be dealt with successfully by the participants, were

critical in revealing children's sense of agency during the performance and the specific modes which they used to transmit messages to each other.

In total, 90 video-recording sessions were conducted, each lasting from 15 seconds to 2.5 minutes. The total participant population was 53 students, of which 52 were girls and 1 was a boy, and their age ranged from 8 to 11 years. Most of the video recordings were conducted at a quiet place in the school playground, or an empty classroom. Only on a few occasions did spontaneous video recordings occur due to ethical constraints. Most of the games were performed by two players facing each other, and fewer games were played by groups of three to seven individuals.

All participants in the study signed ethical consent forms in which they were informed about the aims and content of the research, their right to withdraw from the study at any time, and the confidentiality of data. Written consent was also received from the headteachers of each school, the schools' governing bodies, and from parents and care-givers, in order to allow audio recording of the interviews and video recording of the musical performances.


*Overarching methodological framework*
Previous researchers who applied a multimodal approach in the analysis of children's musical games followed a particular methodological framework. Harrop-Allin (2010) conducted such analysis through detailed descriptions of the musical performances (*cf thick description*, Geertz, 1973). These narratives were also enriched with data from interviews with the children and other informants to give a better understanding of the multiple resources and ways of communication (modes) that children used in their musical games. Bishop and Burn (2013) used an 'analytical grid' which they adapted from the work of other scholars (*cf* Taylor, 2006) to identify 'specific modes in play at each moment of the sequence' (p.109). The categories of time, speech, action/gesture, gaze, facial expression, proxemics, and music were inserted in the grid and written information was added under each one of these columns. The researchers did not follow a regular time frame but chose specific time extracts from the performances which they included in their analyses. The focus was on the meanings that children transmitted across the various modes and additional features became available through information from interviews with the children.

In the current study, a multimodal framework was developed in order to analyse the video recordings and investigate the multiple ways of communication that children used in their musical games in school playgrounds. After watching the videos many times, and in slow motion, similar categories to those suggested by Bishop and Burn (2013) were identified and were grouped into the following modes: a) the visual mode, including players' and observers' visual contact and gaze; b) the kinaesthetic mode, including body posture, facial expressions, and gestures; c) the haptic mode, including distance between the players, personal spaces, and tension in touch; and d) the aural mode, including rhythm, melody or unpitched chant, text of the game and participants' speech. Then, the description of events in the musical games followed, which involved

participants' actions and reactions to verbal, visual, movement, audio, and haptic stimuli.

Additionally, elements related to how the data might be tabled were drawn from the multimodal transcription framework suggested by Bezemer (2014). More categories were added to this grid, which the original researcher had initially designed to depict a medical interaction, to accommodate all modes that were used by the child participants. *Time* was placed on the horizontal axis, and *space*, *body*, *movement*, *body*, *gaze*, *speech* and *observers* on the vertical axis. Video snapshots were also added to the table to show important moments in the interaction. The material was analysed frame-by-frame so that the multiple, often concurrent as well as consecutive, incidents became visible (see *Table 1*, during seconds 13 and 14). Reading the resultant table horizontally reveals each participant's actions—detailed movements and words—in the musical game. Reading the table vertically offers insights into how participants' interactions develop in time.

An example case study of a musical game is presented below with narrative description and multimodal transcription (tables), to offer an understanding of children's multimodal musical and socio-cultural encounters. The case study is illustrative of the wealth of data within the 90 video extracts from the main study.

*Narrative description*

The musical game 'Dama dama go go' is played by two girls (G1 and G2) facing each other. The tune is in duple meter. The girls sing a pitched tune ('Dama dama go go dama dama ji ji') and then switch to unpitched chant ('Dama go dama ji dama go ji'). The lyrics are nonsense words and each word corresponds to a movement. In the video examined, three parts are identified.

In the first part, the players rehearse the game for about 5 seconds. G2 asks G1 'Just like...?' G1 does not answer and continues to play, chanting louder. G1 leads the performance. After about 5 seconds, G2 agrees to follow G1's variation and says 'OK.'

In the second part, G1 and G2 start the performance in synchrony, but very soon a rhythmic, text, and movement interruption is evidenced (0:05-0:06). G1 plays a pattern of four semi-quavers ('da-ma-da-ma') and two quavers ('go-go'), while G2 starts with two quavers ('da-ma'). She then catches up with G1, but soon brings the game to a halt, leaning her body forward. G1 continues to perform the movements alone for a while, but soon she also stops. The girls are about to perform again and G1 shouts 'Fast!' at her co-player.

<u>clap with palm/</u> | clap with the back of the hand /| fist ✕)

***Time***

| 0:01 | 0:02 | 0:03 | 0:04 | 0:05 | 0:06 | 0:07 | 0:08 | 0:09 | 0:10 |

● ● ● ● ● ● ● ● ● ●

***Space***

Dyad facing each other ---------------------------------------------------------------------------------------------------------------------

***Body***

stable ------- heads bent ------------------------------------stable body, heads up-----------------------------------------------

***Movement***

_  _  ☐ ☐ _  _  ✕✕

_  ☐ _

***Gaze***

G1 —> G2 ------------------------------------------------------------------------- G1 —>G2----------------------------(laughs)----------

G 2 —> G1 -----------------------------------------------------down-----------------------------------------(laughs)------------------

***Speech***

| G1 | Dama  dama ji ji Dama  go  dama  ji dama go ji ji    Dama dama  go  go  Dama dama ji ji | *Fast!* |
| G2 | *Just like...?*  ji ji  Dama go dama ji dama go ji  ji *OK* Dama  dama  go go Dama | *Wait, wait!  Let's go once more.*      *OK.* |

***Observers:***
No

***Video snapshots***



interruption        halt

Table 1. Multimodal transcription of the musical game 'Dama dama go go' (1st stanza)

clap with palm/ clap with the back of the hand /fist ✕)

**Time**

| 0:10 | 0:11 | 0:12 | | 0:13 | 0:14 | | 0:15 | 0:16 | |
|---|---|---|---|---|---|---|---|---|---|
| • | • | • | • | | • | • | • | • | • |

**Space**

Dyad facing each other --------------------------------------------------------------------------------------------------------
G1 extends hands
the center of the game moves towards G2

**Body**

G2 turns body towards camera
stable----------------------------------------------------------------------------------------------------------------------------

**Movement**

☐ ☐ — — ✕ ✕ — ☐ — ✕ — ✕ ✕

— — ☐ ☐ — — ✕ ✕ — ☐ ✕ — ✕ ✕ ☐

**Gaze**

G1—>G2 -------------------------------------------------------(smiles)------------------------(laughs)-------------------------------------------- ------------
--

G2—>G1 -------------------------------------------------------(smiles)----------------------- (laughs)------------------- Towards the camera

**Speech**

| G1 | Dama | dama | go | go | Dama | dama | ji | ji | Dama | go | dama | ji | dama | go | ji | ji |
| G2 | Dama | dama | go | go | Dama | dama | ji | ji | Dama | go | dama | ji | dama | go | ji | ji |

*My poor hands are hurting*

**Observers**   No

**Video snapshots**



restarting                                        interruption and extension

Table 2. Multimodal transcription of the musical game 'Dama dama go go' (2nd stanza)

In the third part, the players perform the whole game, which lasts for about seven seconds. They are synchronised in rhythm, movement, and text for about two seconds. Where they earlier had the incident of interruption, G2 seems to be prepared by keeping her hand movements subtle (0:10-0:11). G2 allows G1 to initiate the next movement, maintaining the flow of the game. G2's movements are now more dynamic and more confident. The two players are out of movement synchronisation again for about 2 seconds. G1 seems to make the 'wrong' movements, but the flow of the game is maintained (0:12-0:13). However, the centre of the game moves, as G1 makes expansive, strong movements and extends her hands forward. As a result, G2 limits her movements to her body until the end of the performance when she shouts that her hands are hurting.

In total, the players keep constant visual contact during the whole game. When there are incidents of interruption, they smile at each other in mirroring.

## Results

All four modes (kinaesthetic, visual, aural, and haptic) were present in the case study musical game and enabled communication between the players. For example, in cases of 'mistakes' or hesitance, the kinaesthetic mode was prevalent: G1 performed dynamic and determined movements and G2 followed her co-player while she performed discreet movements. Also, in cases of tolerance to 'mistakes', the players communicated through the visual mode by smiling at each other, and continued the game. The aural mode was evident during the whole game; speech was particularly used in the first part and at the end of the game, where G1 expressed her frustration for the wrong or slow progress of the game and G2 expressed feelings of pain. The haptic mode was evidenced in G1's tense touch perhaps as a result of covering the 'wrong' movements that she performed and taking the lead of the game.

Mirroring body movements, gestures, and gaze was the most prevalent way of communication between the two players, which revealed their collaborative relationship. Their good balance was achieved perhaps thanks to G2, who accepted and played G1's variation, let her at times take the leadership of the game, and was tolerant to her 'mistakes'. However, G2's tolerance to her own 'mistakes' was limited, and thus she stopped the game when she realised that her movements were not the 'right' ones.

The roles that the two girls adopted in the musical game were not fixed. At first, G1 was the leader of the game. However, she later lost the leadership due to 'wrong' movements, which was manifested through the kinaesthetic mode. G2 did not claim leadership of the game but continued playing the game with confidence. The two girls maintained equal roles for the second half of the performance.

The analysis showed that collectively in all musical games the flow of the performances was shaped by several factors, such as the participants' different levels of knowledge and skills, their idiosyncratic elements, and their relation with each other. The games were likely to continue when players were confident

about what they knew, decisive in cases of interruption, and amenable to their roles in the hierarchy. In contrast, incidents of hesitance, indecisiveness, and conflict over the roles could bring the game to a halt.

## Discussion

A multimodal reading of musical games enables us to see details which would not be visible through a different analysis. Various modes came to the fore and a number of incidents that occurred in the performances were processed through participants' 'collaborative achievements' (Bezemer, 2014, p. 155). Children's collaboration was achieved through image-and-text mirroring and a sense of reciprocity was developed. Despite the occasional incidents in which synchronisation was interrupted, the flow of the performances was ensured as participants adjusted the text and movements accordingly. It seems that the game's sonic, rhythmic, and linguistic features allow individuals to be part of a structure achieving *entrainment* (Clayton, 2012).

It was evidenced that children drew positive feelings from working together and being actively engaged in the musical game. It is possible that the flow of the performance was maintained for the sake of it. Experiencing feelings of pleasure in a shared activity enhances the incentive to maintain its flow (Csikszentmihalyi, 2008) and also supports social bonding.

Multimodal analysis of children's musical games also showed that participants allocated, adopted, or changed their roles in the game and dealt with issues of hierarchy and power. As they processed the social elements of the performance, key aspects of their identity were revealed. The negotiation of social and performative roles shows that participants exercise agency in musical games and vital questions with regard to the self, the other, and the shared activity are posed, such as: who am I? What are personality traits? Do I dominate or am I happy to be led? Who do I like as my partner in play? Do we enjoy the process together?

Implications for children's musicking in school settings can be drawn from the multimodal analysis of children's musical games. The Western-centered practice in the music classroom has traditionally been based on the use of language and has neglected other modes. However, the findings of this study, along with findings from related studies (Addo, 1997; Bishop & Burn, 2013; Harrop-Allin, 2010; Marsh, 2008), suggest that multimodal expression is vital for children at any setting and should be encouraged in the music classroom. Also, musical games provide opportunities for (musical) intrapersonal and interpersonal exploration. Such activities can contribute to students' self-awareness and can be a valuable tool for educators to get to know their students. In addition, educators can benefit from the linguistic particularity of the musical games and use them in multicultural environments to foster interaction among children of various cultural backgrounds.

The modes which individuals use in their socio-cultural encounters manifest "their formation of identities and power relations, and the socially and culturally shaped categories through which they see the world" (Bezemer, 2014,

p. 155). As it has been shown, multimodality can be a useful research lens to understand the significance of children's musical play at different levels.

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