

HANDCLAPPING SONGS AND GENDER: AN APPROCH USING THE BAPNE METHOD

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Abstract

Children's handclapping games have been present in all cultures since time immemorial and at an educational level are essential resources for teachers of music, physical education and the visual arts according to the BAPNE method. Gender differences in implementation, the age at which they are used, the basic structures that they possess, their use and functionality for the development of multitasking are the aspects covered in this research.

Keywords: Body percussion, Handclapping songs, gender, BAPNE Method, therapy.

Resumen

Los juegos de palmas infantiles están presentes en todas las culturas desde tiempos inmemoriales y a nivel pedagógico son un recurso fundamental para los docentes de música, de ciencias de la educación física y artes visuales según el método BAPNE. Las diferencias entre géneros en la ejecución, la edad en la que se emplean, las estructuras básicas que poseen, su uso y funcionalidad para el desarrollo de la multitarea, son los aspectos que se tratan en esta investigación.

Palabras clave: Percusión corporal, canciones de palmas, género, método BAPNE, terapia.

Introduction

Children's coordination games and the connection between them and popular songs are found in all world cultures, and have undergone clear evolution depending on the sociocultural context around them¹. This evolution, and the inherent changes involved, especially affect the literary content and rhythm of songs, the content of lyrics, and the psychomotor movements involved when performing them, due to changes to urban music. As pointed out by Martín and Carbajo², quartets and ballads tend to slowly disappear, giving rise to rhythms of unlimited duration, structured around building up, repetition, and irregular versification. Texts are always influenced by endoculturation; we are increasingly witnessing games based around television theme music and advertisements in which, as the aforementioned authors argue, «the rhythmic context is imposed on the text, ending up incoherent and repetitive».

1. Origins of handclapping games: a hypothesis

Handclapping games date back centuries, where various authors, such as Merriam³, Blacking⁴, Riddell⁵, Merrill-Mirsky⁶, Sulkin⁷, Pelegrín⁸, Hemsy de

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1. This article falls within the framework of the R&D investigation group with reference HAR2010-15165.
 2. MARTÍN ESCOBAR, María Jesús y CARBAJO MARTÍNEZ, Concha. *Cancionero infantil de la región de Murcia*. Murcia: Universidad de Murcia, 2010, pp. 13-14.
 3. MERRIAM, Allan. *The Anthropology of Music*. Evanston (Il.): Northwestern University Press, 1964.
 4. BLACKING, John. *Venda children's songs: A study in ethnomusicological analysis*. Chicago and London: University of Chicago Press, 1967.
 5. RIDDELL, Cecilia. *Traditional singing games of elementary school children in Los Angeles*. Doctoral dissertation, University of California-Los Angeles, 1990.
 6. MERRILL-MIRSKY, Carol. «Girls' Handclapping Games in Three Los Angeles Schools». *Yearbook for Traditional Music* 18, 1986, pp. 47-59.
 7. SULKIN, Idit. «Hand clapping songs in the school yard.» Unpublished MA thesis. Department of Musicology, Tel-Aviv University, Tel-Aviv, Israel, 2003.
 8. PELEGRÍN, Ana María. *Cada cual atiende su juego*. Madrid. Cincel, 1984.

Gainza⁹, Martín Escobar¹⁰ and Romero Naranjo¹¹ establish criteria to justify the origins of these games and their use in education. Based on the work of these authors, we offer a possible taxonomy to contextualise them, and thus be able to refer to a global outline of how the games are used, by looking back over their historical use. They originate from two major sources:

- *Adults*: Adults create these psychomotor melodies with an educational and didactic purpose in mind, aiming to transmit certain verbal, motor and melodic information. The result of this can be seen in more elaborate lyrics which are accompanied by movements to illustrate them. These lyrics are introduced by mothers and fathers, as well as by teachers, and tend to show a distinct *ostinato* quality at the rhythmic and motor levels.
- *Children*: Compositions created by children have poorer linguistic content, with varied rhythmic improvisation and, in many cases, are influenced by melodies or rhythms from the media.

By contrast, groups of children who play these games can be classified into two main groups according to Martín Escobar and Carbajo Martínez,¹² who classify them based on the level of difficulty they have:

- A. **Receptive child.** Children who are not independent in their movement. They tend to use very straightforward movements due to their use in very simple songs during the early years of their life. Normally it is the parents who take the hands of their sons or daughters and help them with psychomotor movement.
- B. **Performing child.** Children who are independent in their movement. Songs are structured around melodies and motor movements which are slightly more complex and are linked to various themes that show increasing speed, challenges in motor coordination, continued use of mime and gesture, the importance of lyrics and prosodic stress in relation to the percussive beat.

9. HEMS DE GAINZA, Violeta. 75 rimas y canciones tradicionales con manos y otros gestos. Editorial Guadalupe, Buenos Aires, 1996.

10. MARTÍN ESCOBAR, María Jesús y CARBAJO MARTÍNEZ, Concha. *Cancionero infantil...* Op. cit., p. 14.

11. ROMERO-NARANJO, Francisco Javier. *Didáctica de la percusión corporal. Fundamentación teórico-práctica*. Vol. 1, 2 y 3. Barcelona: Body music Body percussion Press, 8ª Edición, 2012.

12. MARTÍN ESCOBAR, M. y CARBAJO MARTÍNEZ, C. *Cancionero infantil...* Op.cit., p. 15.

2. Brief summary of the issue

Throughout history, various authors have stressed the important role of games in learning for their great educational and social value, as shown by Huizinga¹³ and Parlebas¹⁴. By contrast, other authors such as Brailoiu¹⁵ link games with musical traditions, considering them a stimulating element that strengthens the abilities of the pupil as much as possible. The aim of this section, therefore, is to set out a brief historical summary of works, especially those from the 20th century, to understand how interest in handclapping games has evolved, and what lines research has followed.

In the 20th century, we can see a marked interest into children's coordination games, as shown by conferences, journals with specific volumes dedicated to the topic, books, collections of studies and many other documents that allowed a much wider investigative corpus to be established.

From an academic perspective, the Spanish National Research Council (*Consejo superior de Investigaciones Científicas* (CSIC), the largest public institution dedicated to research in the country, published excellent extended articles on motor games, children's songs and rhymes in the *Revista de Dialectología y Tradiciones Populares*. Important to point out are the works of Diego Cuscoy *El folklore infantil y otros estudios etnográficos*¹⁶ (1943), that of Fermín Bouzas, *Juegos y costumbres infantiles del Valle de Arán*¹⁷ (Barcelona, 1980) and many other authors such as Théo Brandao¹⁸ and Vicente García de Diego¹⁹.

Following on from this, the work of folklorists, ethnomusicologists and specialised researchers became important. Examples include Joaquín Díaz with his publication *Romances, canciones y cuentos de Castilla y León*²⁰ in 1982, García Matos with his extensive study *Magna antología del folklore musical en España*²¹ published by Unesco in 1979, the fantastic work of M.

13. HUIZINGA, Johan.: *Homo Ludens*. Editorial Alianza, 2007.

14. PARLEBAS, Pierre. *Éléments de sociologie du sport*, PUF, Paris, 1986.

15. BRAILOIU, Constantin. *Le rythme enfantin: notions liminaires*. Republished in *Problems in ethnomusicology*, edited and translated by A. L. Lloyd. Cambridge: Cambridge University Press. 1954, pp. 206-238.

16. CUSCOY, Diego. *El folklore infantil y otros estudios etnográficos*. 1943.

17. BOUZAS-BREY, Fermín. *Juegos y costumbres infantiles del Valle de Arán*. Barcelona, 1980.

18. BRANDÃO, Théo. *Folclore e educação infantil*. Brasil, 1951.

19. GARCÍA DE DIEGO, Vicente. *Antología de leyendas*. Barcelona, 1953.

20. DÍAZ, Joaquín. *Romances, canciones y cuentos de Castilla y León*. Fundación Joaquín Díaz, 1982.

21. GARCÍA-MATOS, Manuel. *Magna antología del folklore musical en España*. Unesco, 1980.

Manzano, in particular his *Cancionero popular de Castilla y León*²² in 1989 and Carabajo Martínez with the important *Cancionero infantil de Murcia*²³ in 2010.

All these specialists have one aspect in common, the fact that they note the immeasurable value of children's traditions, and in this way are aesthetically closely linked to the thinking of the philosopher Montaigne, who argued that, *children's games should be considered their most serious acts*.²⁴ All of these games share the fact that they are constantly acted out primarily by girls, for ethnographic and social reasons, the justification of which will be explained below.

3. What are handclapping games?

Handclapping games are motor coordination games performed through body percussion, linked to lyrics which are recited or sung, and which are carried out by two or more people. These games tend to show a clear link between the lyrics, the gestures and beats on the body (body percussion), which vary from culture to culture. Whilst in Western cultures, the gesture is linked to the prosodic stress, in African cultures they tend to be used independently, in such a way that the prosodic stress of a word is not linked to the beat to the body, as argued by Blacking²⁵.

Body percussion is the art of hitting the body in order to produce various types of sounds for didactic, therapeutic, anthropological and social purposes. Both in the field of musical cultures and in the world of shows and performances, as is the case with groups such as Stomp or Mayumana, body percussion has had different roles, which can be classified into their different uses, meanings and purposes in each culture. The body is used for these different purposes as an acoustic, rhythmic, dynamic instrument with distinct timbre because it is linked to movement²⁶ and dance. It is important to stress that

22. MANZANO, Miguel. *Cancionero popular de Castilla y León*. Diputación de Salamanca, Salamanca, 1989.

23. MARTÍN-ESCOBAR, María Jesús y CARBAJO-MARTÍNEZ, Concha. *Cancionero infantil...Op. cit.*

24. MONTAIGNE, Michel de. *Los ensayos (según la edición de 1595 de Marie de Gournay)*. Colección Ensayo 153. Barcelona: El Acanalado, 2007, pp. 1232-1235.

25. BLACKING, John. *Venda children's songs: A study in ethnomusicological analysis*. Chicago and London: University of Chicago Press, 1967.

26. VICENTE-NICOLÁS, Gregorio. «Las actividades de movimiento en el aula de música: una aproximación a través de los libros de texto». *Educatio Siglo XXI*, 28, 1, (2010), pp. 209-226.

in the present day, the media and social networking sites play an important role in their spread, due to their high level of visual and aesthetic content, as argued by Romero Naranjo²⁷.

Children's handclapping games have been addressed by various authors who have focussed on several lines of investigation, such as Nettl²⁸ who talks from an ethnomusicological perspective, Hemsy de Gainza²⁹ who looks at how the exact movements of handclapping games are copied out and transcribed, and Marsh³⁰ who looks at their use in education centres. Due to the wide range of topics, we have classified the most relevant lines of investigation into handclapping games into five main sections:

- *Ethnomusicological studies*. These are studies carried out by ethnomusicologists in order to analyse the musical structure, origins, and transmission from one generation to the next from rural areas to cities, as shown primarily in the publications of Nettl³¹, Kartomi³² and Blacking³³.
- *Corpus studies*. These are focussed on collecting and transcribing handclapping games and other children's tunes which are linked to children's coordination games, as in the publications of Hemsy de Gainza³⁴ and Martín Escobar and Carbajo Martínez³⁵.

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- VICENTE-NICOLÁS, Gregorio. «Música y movimiento. Variaciones sobre un mismo tema». *Eufonía. Didáctica de la música*, 54, (2012), pp. 74-81.
27. ROMERO-NARANJO, Francisco Javier. «Science & Art of Body Percussion: A review». *Journal of Human Sport and Exercise*, 8, 2, (2013), pp. 442-457. Doi:10.4100/jhse.2012.82.11.
28. NETTL, Bruno. «Infant musical development and primitive music». *Southwestern Journal of Anthropology*, (1956), pp. 87-91.
29. HEMSY DE GAINZA, Violeta. *75 rimas y canciones tradicionales...* Op. cit.
30. MARSH, Khatryn. *The Musical Playground: Global Tradition and Change in Children's Songs and Games*. Oxford University Press, 2008.
31. NETTL, Bruno. *In the Course of Performance. Studies in the World of Musical Improvisation*. Chicago University Press, 1998.
32. KARTOMI, Margaret. «Childlikeness in play songs – A case study among the Pitjanjara at Yalata, South Australia». *Miscellanea Musicologica*, 11, (1980), pp. 172-214.
33. BLACKING, John. *Venda children's songs: A study in ethnomusicological analysis...* Op. Cit.
34. HEMSY DE GAINZA, Violeta. *75 rimas y canciones tradicionales...* Op. Cit.
35. MARTÍN ESCOBAR, María Jesús y CARBAJO MARTÍNEZ, Concha. *Cancionero infantil...* Op. cit., p. 14.

- *Didactic studies*. These are focussed on studying, from an educational perspective, the use inside and outside the classroom, as shown by Harwood³⁶, Riddell³⁷, Marsh³⁸, Obuo Addo³⁹ and Martín Herrero⁴⁰.
- *Neurological scientific studies*. These look into the stimulation of physical, cognitive and mental abilities of children, proving that they can influence their levels of psychomotor, psychological, emotional, social and cognitive maturity, as seen in Thaut⁴¹, Kesslerling & Altenmüller & Wiesendanger⁴² and Sulkin & Brodsky⁴³.
- *Therapeutic studies*. These are publications which aim to explore the impact of sound and movement in body percussion on development of communication skills, creative expression, group work and the development of a positive body image through corporeal dialogue in various illnesses such as Parkinson's, Alzheimer's, Down's Syndrome, dyscalculia, dyslexia and autism etc, as shown by McIntosh⁴⁴ and Romero Naranjo⁴⁵.

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36. HARWOOD, Eve. «Content and Context in Children's Playground Songs». *Applications of research in music education*. 12, 1, (1993), pp. 4-8. DOI: 10.1177/875512339301200101.
 HARWOOD, Eve. «Girls' handclapping games: A study in oral transmission». *Bulletin of the International Kodály Society*, 1992.
 HARWOOD, Eve. ««Go on girl!» Improvisation in African-American girls' singing games». In B. Nettl & M. Russell (Eds.), *In the course of performance*. Chicago: University of Chicago, 1998, pp. 113-125.
37. RIDDELL, Cecilia. *Traditional singing games of elementary school children in Los Angeles*. Doctoral dissertation, University of California-Los Angeles, 1990.
38. MARSH, Khatryn. «Children's singing games: Composition in the playground?». *Research Studies in Music Education*, 4, (1995), pp. 2-11.
 MARSH, Khatryn. *The Musical Playground: Global Tradition and Change in Children's Songs and Games*. Oxford University Press, 2008.
39. OBUO ADDO, Akosua. «A Multimedia Analysis of Selected Ghanaian Children's Play Songs». *Bulletin of the Council for Research in Music Education* 129, (1996), pp. 1-28.
40. MARTÍN-HERRERO, José Antonio. *Manual de antropología de la música*. .Op. cit.
41. THAUT, Michael. *Rhythm Music and the Brain: Scientific Foundations and Clinical Applications*, 2005.
42. ALTENMÜLLER, Eckart, WIESENDANGER, Mario y KESSELRING, Jürg. *Music, motor control and the brain*. Oxford University Press, 2006.
43. BRODSKY, Warren y SULKIN, Idit. «Handclapping songs: a spontaneous platform for child development among 5-10-year-old children». *Early Child Development and Care* 181, 8, (2011), pp. 1111-1136.
44. MCINTOSH, Gerald C., et al. «Rhythmic auditory-motor facilitation of gait patterns in patients with Parkinson's disease». *Journal of Neurology, Neurosurgery & Psychiatry* 62, 1, (1997), pp. 22-26.
45. ROMERO-NARANJO, Francisco Javier. *Estimulación cognitiva para enfermos de Parkinson según el método BAPNE*. X Jornadas de Redes de Investigación en Docencia Universitaria:

4. General structure of handclapping games

Bruno Nettl⁴⁶ has addressed this topic, concluding that handclapping games resemble each other because they are traditional in nature and are transmitted from one generation to the next orally. According to Nettl, handclapping games can be identified by their short forms, and repetitive rhythms which are interlinked at a motor, melodic and textual level.

Having studied a great number of handclapping games,⁴⁷ we can see that the usual structure consists of three basic elements:

1. Binary structures in the texts. They tend to be formed around a dialogue based on questions and answers, or alternating between a verse and chorus.
2. Accumulative structures (increasing and/or decreasing numbers, lists, additional pieces, interlinking, etc.)
3. Mixed structures.

To conclude, it is important to point out that binary structure is always present at a textual, rhythmic and conceptual level, and therefore the basic form is AB, which is performed through the form and variation of verses, syllables and metre. The following example does not only fit the aforementioned metric structure, but also shows the process of endoculturation, as it uses television theme music and advertising slogans.

An example:

*Con el «chu chu chu»
de la juventud,
acompañame
a tomar el té.*

la participación y el compromiso de la comunidad universitaria. Universidad de Alicante. 2012.

ROMERO-NARANJO, Francisco Javier. *Percusión corporal y depresión. Aproximación metodológica según el método BAPNE.* XI Jornadas de Redes de Investigación en Docencia Universitaria. Retos de futuro en la enseñanza superior: Docencia e investigación para alcanzar la excelencia académica. Universidad de Alicante. 2013.

ROMERO-NARANJO, Francisco Javier y Romero Naranjo, Alejandro A. *La percusión corporal como recurso terapéutico.* XI Jornadas de Redes de Investigación en Docencia Universitaria. Retos de futuro en la enseñanza superior: Docencia e investigación para alcanzar la excelencia académica. Universidad de Alicante. 2013.

46. NETTL, Bruno. «An ethnomusicologist contemplates universals in musical sound and musical culture». *The origins of music*, 2000, pp. 463-472.

47. MARTÍN ESCOBAR, María Jesús y CARBAJO MARTÍNEZ, Concha. *Cancionero infantil...* Op. cit. HEMS DE GAINZA, Violeta. *75 rimas y canciones tradicionales...* Op. cit.

*Con la pepsi, pepsi, pepsi,
Con la cola, cola, cola,
Con la pep-si-co-la.*

From a musical perspective, we can see that major scales are mainly used and, rhythmically, there is a preference for 4/4 time.

5. Use of handclapping games

In recent years, it has been seen that handclapping songs have many benefits for attention levels, psychomotor skills and group learning, as well as other aspects. Authors such as Martín Herrero have long realised this and describe the benefits as follows:

Play can be used to exercise attention levels and to discover aptitude, observation skills, judgement, imagination, technical ability; they improve affective, moral and social discipline and games are essential activities for the building of the child's personality, allowing him or her to satisfy his or her needs for action and expression. With practice, the child soon gains psychomotor skills such as muscle control, agility, balance, precision, fast reflexes, etc. This is all accompanied by songs which enliven the rhythm of the game, set out its rules, select and limit the choice of players, etc. Play is the school of life, and through it, the basic and essential rules for any human group filter down, beyond simply establishing the boundaries for identity.⁴⁸

Later on, other authors such as Hemsy de Gainza⁴⁹ and Sulkin⁵⁰ put forward numerous aspects in order to be able to classify them, though we would add others which we consider important within the framework of Howard Gardner's Multiple Intelligences.⁵¹ Their uses and benefits are the following:

1. Development of kinaesthetic intelligence. Through these types of activities, coordination between the upper and lower limbs is developed (on the horizontal biomechanical plane) and especially laterality through bimanual coordination (on the sagittal biomechanical plane).
2. Development of the sensory system through the vestibular and proprioceptive systems. Both performing and receptive children control the quality of movement, the force they should use and how to control the start, climax and end of motor movement.

48. MARTÍN-HERRERO, José Antonio. *Manual de antropología...* Op. cit. p. 178.

49. HEMSY DE GAINZA, Violeta. *75 rimas y canciones tradicionales...* Op. cit.

50. BRODSKY, Warren, y SULKIN, Imit. «Handclapping songs...» Op. cit.

51. GARDNER, Howard. *Frames of mind: The theory of multiple intelligences*. Basic Books (AZ), 1985.

3. Development of attention skills. Thanks to handclapping songs, children learn to develop various types of attention skills, which depend on the type of game they are playing, and contribute primarily to the development of divided, selective, sustained and alternating attention skills.
4. Development of memory. These types of game involve development of memory skills, as performing children make use of mnemonics associated with the text, movement and gesture. In order to do so, they use both declarative and procedural memory, since once they have internalised games, they can perform them automatically, with the body thinking for itself. It is important to mention that muscular, auditory, visual, rhythmic and emotive memory skills are also developed, as outlined by Barbacci⁵².
5. Development of musical intelligence. Children sing, move, coordinate, perform beats within a musical structure, adapt to the set beat, and interact with the rest of their classmates. All of these actions favour basic musical aspects of inclusive learning.
6. Development of interpersonal intelligence. These types of activities are performed by a minimum of two people or more, and so cooperative, inclusive work without hierarchies is fundamental.
7. Transmission of cultural values. Through their melodies and lyrics, they transmit cultural values that the instructor can skilfully use to put across specific messages.
8. Development of therapeutic aspects. From a bioenergetic perspective, there are three main ways of stabilising the body: eye contact, hands, and feet, as pointed out by Lowen⁵³. These are the basic channels which are worked through movement in relation to handclapping games adapted to the BAPNE method in order to give a therapeutic foundation to each disorder.

6. Handclapping games as a teaching resource following the BAPNE method

The aim of the BAPNE method is to develop the multiple intelligences through body percussion, supported by the five disciplines of biomechanics, anatomy, psychology, neuroscience and ethnomusicology. Each one of these

52. BARBACCI, Rodolfo. Educación de la memoria musical. Buenos Aires. Ricordi, 1983.

53. LOWEN, Alexander. *El lenguaje del cuerpo: dinámica física de la estructura del carácter*, Herder, 1985.

disciplines establishes concrete parameters which help to give a systematic structure to the theoretical and practical activities, and together form the acronym BAPNE.⁵⁴ Biomechanics helps us to understand how the human body moves in space, along planes and axes; anatomy shows us the exact movements of the bone structure and specific muscles; psychology helps us to use movement from a therapeutic perspective; and ethnomusicology helps us to understand how the body moves in different cultures, and how the patterns differ between different cultures and continents.⁵⁵ These five disciplines help us to give a systematic structure to the methodology. However, it is the Multiple Intelligences that offer us the tools, techniques and aim of each activity, using the basis set out by Gardner.⁵⁶ Therefore, the methodological focus is along eight lines in order to develop the eight multiple intelligences: musical, bodily kinaesthetic, spatio-visual, interpersonal, intrapersonal, naturalist, linguistic and mathematical.

7. Handclapping games and gender

Numerous authors have written about the link between gender and music, looking at it with regards to classical music, for instance, the role of women composers, performers, teachers and even musical businesswomen. Examples include Manchado Torres⁵⁷, Green⁵⁸ and Ramos López⁵⁹, as well as many others. However, when it comes to children's music and especially handclapping games, research on this topic is in its early stages, hence our desire to contribute to this topic.

The average age when female children begin to perform handclapping games is about four years old. Brodsky and Sulkin⁶⁰ argue that 70% of female children make use of these types of activities, and that the percentage changes as they grow older. The starting age is between four and five years, whilst peak usage is around seven and eight years of age, and the period of decline around nine to eleven years old. Women are able to carry out many things at once,

54. ROMERO-NARANJO, Francisco Javier. *Didáctica de la percusión corporal. Fundamentación teórico-práctica*. Vol. 1, 2 y 3. Barcelona: Body music Body percussion Press, 8ª Edición, 2012.

55. ROMERO-NARANJO, Francisco Javier. «Percusión corporal en diferentes culturas». *Música y Educación*, 76, 4, 2008, pp. 46-97.

56. GARDNER, Howard. *Frames of mind: The theory of multiple...* Op. cit.

57. TORRES, Marisa Manchado. *Música y mujeres: género y poder*. Horas y horas, 1998.

58. GREEN, Lucy. *Música, género y educación*. Ediciones Morata, 2001.

59. RAMOS-LÓPEZ, Pilar. *Feminismo y música: Introducción crítica*. Editorial Narcea, 2003.

60. BRODSKY, Warren, y SULKIN, Idit. «Handclapping songs...» Op. cit.

what is commonly known as *divided attention*, as argued by Sulkin⁶¹. One of the reasons that justifies this ability is the stimulation and development of such attention thanks to handclapping games, according to Brodsky and Sulkin⁶². In these games, they have to coordinate, dissociate, move around in space, interact as a group, add lyrics, melodies, dramatise a gesture; in one way or another, this stimulates various lobes in the brain. The reasons why this occurs are numerous:

A. When carrying out this type of activity, children develop their ability to dissociate their limbs, to develop laterality, and to add a text or psychomotor melody, depending on the nature of the game. According to Armando Estévez-González⁶³, this means that they activate various lobes due to the different types of attention that they are using. The parietal lobe controls gross psychomotor skills, and they also stimulate the associative motor cortex and the cingulate motor cortex that control bimanual rhythmic coordination; they also activate the left temporal lobe, which controls language when reciting a text; they also activate the right temporal lobe when singing a melody, and the occipital lobe when watching their hands and those of their classmates throughout the motor sequence. As for attention skills, one of the most stimulated areas – from a neuroanatomic and neurophysiological perspective – is found in the reticular system, in the limbic system, the basal ganglia (striatum), the posterior parietal cortex and the prefrontal cortex, according to Torre⁶⁴. Additionally, they activate the hippocampus which is in charge of memorising games and the limbic brain, due to the emotions generated whilst carrying out the games, as well as many other areas.

B. Rural areas condition children's coordination games to a great extent: boys are indirectly encouraged primarily to play games which contain a great deal of strength, power and resistance.⁶⁵ In these games, the upper and lower limbs are used independently, but very rarely with dissociation or the combination

61. SULKIN, Idit. «Hand clapping songs in the school yard.» *Unpublished MA thesis. Department of Musicology, Tel-Aviv University, Tel-Aviv, Israel, 2003.*

62. BRODSKY, Warren, y SULKIN, Idit. «Handclapping songs...» Op. cit.

63. ESTÉVEZ-GONZÁLEZ, Armando, GARCÍA-SÁNCHEZ, Carmen y JUNQUÉ, Carmen. «La atención: una compleja función cerebral». *Revista de neurología* 25, 148 (1997), pp. 1989-1997.

64. TORRE, Gabriel. «El modelo funcional de atención en neuropsicología». *Revista de psicología general y aplicada: Revista de la Federación Española de Asociaciones de Psicología*, 2002, vol. 55, nº 1, pp. 113-122.

65. MARTÍN ESCOBAR, María Jesús y CARBAJO MARTÍNEZ, Concha. *Cancionero infantil...* Op. cit., p. 13.

of both simultaneously. This involves less cerebral activation and stimulation than in the case of girls, resulting in poor development of divided attention.

In traditional Spanish tunes, there are work songs, performed mainly by women, which have the same focus on inclusive and psychomotor work as hand-clapping songs. These work songs are called *panaderas* ('bread-makers') and are performed through a rhythm played on a table. The rhythm of the *panaderas* (in the context of Castilian percussion) was used in rural Castille while making bread, in order to mechanise work between several people. Women sat in a line along a table and, with a percussive movement with their hands, gave the bread a round shape and then passed it to the next person, always in this structured way. The hand rhythms and the melody both take the form of a jota (a form of Aragonese folk song) which stems from oral tradition. We find many different melodies in different areas of Spain (in Zamora, Teruel and Segovia, for instance). Below we outline the basic rhythm of the rhythm of *las panaderas*⁶⁶:

PANADERAS

Ejercicios prácticos

Aprende esta secuencia "base" de las Panaderas:

Esta base rítmica debe de ser aprendida de forma secuenciada y progresiva, por lo que es muy importante enseñarlo gradualmente como indican los corchetes.

© J a v i e r R o m e r o N a r a n j o

Practical exercises:

Learn this 'base' section of the 'panaderas'.

This rhythmic base should be learnt in progressive sections, and therefore it is important to teach it gradually, as shown in square brackets.

66. ROMERO-NARANJO, Francisco Javier. *Didáctica de la percusión corporal. Fundamentación teórico-práctica*. Vol. 2. Barcelona: Body music Body percussion Press, 8ª Edición, 2012, pp. 323-329.

From a gender perspective, handclapping games should be used by boys as well as girls, due to the outlined benefits through stimulating divided attention or multitasking. The possibility of physically interacting with other people, and communicating both corporeally and kinaesthetically, are increasingly important in a society in which new forms of technology are encouraging communication to be primarily virtual. In the present day, we have become consumers of emotions, particularly virtual ones, in this technological society. Therefore, the physical interaction between children should be encouraged in the context of the family and the context of education by instructors using the resources offered by teaching body percussion.

8. Conclusions

The aim of handclapping games is thus not to learn them and imitate them as tradition has maintained them, but to adapt them specifically so that group learning can be positive. This modification consists of involving the whole class as a community, so that they feel completely engaged in the development of the activity. Their creativity is always useful for learning, so new lyrics, gestures or percussive beats can be added.

Thus children are encouraged to perform handclapping games, in order to stimulate divided attention and bimanual coordination.⁶⁷ For this reason, in practical sessions it is suggested to boys that they perform each activity with a girl (and never with a boy) since girls are more practised and able, and have been since childhood due to their constant practice of these types of activities.

It can be explained from a neurological perspective why these patterns occur. Numerous studies show that neurocognitive plasticity between both hemispheres is at its peak during childhood between the ages of three and eleven.⁶⁸ This means that brains are much more susceptible to modification and manipulation at these ages than when adult.⁶⁹ For this reason, at a didactic level, it is beneficial to use these slightly modified types of activities in order to correctly stimulate children, and also so they can be used inclusively in

67. BRODSKY, Warren, y SULKIN, Idit. «Handclapping songs... Op. cit.

68. GETCHELL, Nancy y WHITALL, Jill. «How do children coordinate simultaneous upper and lower extremity tasks? The development of dual motor task coordination». *Experimental Child Psychology*, 85, 2003, pp. 120-140.

69. DORFBERGER, Shlomo, ADI-JAPHA, Esther y KARNI, Avi. «Sex differences in motor performance and motor learning in children and adolescents: An increasing male advantage in motor learning and consolidation phase gains». *Behavioural Brain Research*, 198, 2009, pp. 163-171.

a group. This form of stimulation brings with it the following aspects, which act as a conclusion to this short contribution to the topic.

In a society where it is increasingly rare for children to play together in the street, to carry out group activities and to interact with their environment, it is important to stimulate their bodies. The body is the basic source of sound and their first musical and motor instrument, and it should be stimulated through percussive beats in order to develop skills of control and organisation of movement.

Through children's coordination games, stimulation is achieved through use of the sounds produced by the body which lead to development of divided attention and thus the complete dynamisation of the individual. By doing so, we encourage development of a positive body image, we stimulate creative expression and we particularly support the bodily assimilation of emotions, forms of behaviour and social interaction.

Children should develop awareness and bodily perception to learn how to carry out movements according to various rhythmic patterns in order to develop adequate psychomotor skills.

Knowledge of children's coordination games and of collective experience is something we must never neglect, and which we must therefore keep transmitting and preserving. There is no doubt that children are the best channel of transmission, since they begin their multiple learning through play, their motor skills closely linked to lyrics and melodies.

For this reason, when considering gender, it is important to bear in mind that coordination games played by girls ought to be used and developed in various social contexts, due to the great neurological advantages, as has been shown by the bibliography.

Difficulties and disorders involving movement also bring with them other added disadvantages, such as dyslexia, ADHD, lack of concentration and impulsiveness, for instance. The importance of feeling oneself, looking at oneself, and facing small psychomotor challenges through play cannot be ignored in early childhood lest emotional and cognitive maturity suffer. This social interaction, which brings with it cooperation, attention and visualisation, contains a means of non-verbal communication which is vital for inclusive work and cooperative learning.

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