

## **Innate musicality and very young children: indications for practice from research**

### *Abstract*

This article is concerned with the role of music in communication with babies and toddlers. It begins by considering research on the significance of music. The fairly recent theory of 'communicative musicality' and its place in the development of relationships offers an important fresh perspective. Research into musical practice with children under three has so far been very limited, nor has music in the early years received as much attention as other aspects of creative expression. Given the innate musical capacity of young children, this article considers the nature of an appropriate pedagogy as well as forms of professional development necessary for teachers and other educators working with this age group.

**Keywords:** under-threes; musical communication; musical development; pedagogy; professional development

### **Introduction**

This article has been prompted by a growing body of research into brain development and in particular the recent publication of a large collection of research papers relating to the topic of music's role in the development of communication and relationships (Malloch and Trevarthen 2009). The author has a life-long enthusiasm for music as well as a professional concern that music is not always fully perceived as an integral element in young children's development.

### **Why music is important**

Music is an essential human form of expression. Oliver Sachs in *Musicophilia* explains how our brains have musical processes embedded in them (Sachs 2007). On the other hand 'the precise relationship between emotions and cognitions in music remains obscure and controversial in modern psychology... [Some psychologists] place high value on articulate rationality and symbolic communication in language [unfortunately leading them] to dismiss music as frills ...' (Panksepp and Trevarthen 2009, 106). But the evidence of music's remarkable potential in mental, psychological and social development is steadily accumulating.

Music is a powerful regulator of our emotions, helps us feel in a controllable and safe way, allows us to experience feelings of great joy and sadness without the costs associated with social and personal events ... It can calm and soothe us, stir us up, ravish us with its beauty (Turner and Ioannides 2009, 173).

It also has an extraordinary capacity to promote social cohesion and deepen relationships with others.

Music in some form is basic to humanity. Some archaeologists even suggest that musical communication actually preceded articulate human speech (Mithen 2005). Indeed by the Neolithic period simple musical instruments such as pipes fashioned from bird's bones, offer tangible evidence of the early social practice of music. Moreover, music is universal. Every community has evolved musical traditions. We ourselves are familiar with and delight in many types of music from rock and pop, folk and jazz, to the vast repertoire of classical music. Cross-cultural research by Bjørkvald (1989) provides intriguing glimpses of many traditions of music. Commonly music is associated with concepts of dancing, social ceremonies, feasting and theatre. For example, in Swahili the word '*ngomo*' is used to cover three aspects of music – song, dance and play. We shall see that this broad concept of *ngomo* reflects the multi-modal nature of music in children from birth to three.

Bjørkvald's cross-cultural research led him to describe music as the 'muse' within us all (1989). In many societies (in sub-Saharan Africa for example) music is integral to daily life, and its festivities, with young children expected to be present and increasingly to participate in social events. From its global ubiquity it is clear that music is both a cultural and biological phenomenon in which everyone, from the youngest age, should have a right to take part.

### **Research perspectives on musicality**

From recent research we are beginning to construct a picture of early musicality and its potential importance in young children's lives. Before birth the foetus in the womb, from at least 22 weeks' gestation, is experiencing music and other sounds (Powers and Trevarthen 2009, 214). Central to the pre-birth sound environment is the mother's voice, with its musical qualities, its rise and fall, rhythmic patterns, volume and expressive timbres. Immediately after birth newborns recognise their mother's voice and its distinctive musicality. They also recognise music familiar to them from before birth, say perhaps the theme music of some television show. It is not simply the musical sounds that the infant experiences, but also the effect of the mother's hormonal reaction – such as her body's relaxation on hearing her favourite music. In recognition of pre-birth musical experiences pre-natal classes involving musicians have been designed and proved valuable (Young 2003, 24-6).

The important observations by Hanus and Mechtild Papoušek's of their own children's musical responses from birth reveal in fine-grained detail the capacities of the children and the interactions engaged in by parent and child. By two months one of the children was matching her voice to her parents' pitch. The parents noted much exploratory vocal play between four and six months and repetitive babbling over the period from seven to eleven months. By a year the children were joining in the family songs – if not completely – certainly with body gestures. M. Papoušek's chapter 'Intuitive parenting: a hidden source of musical stimulation in infancy' draws on cross-cultural research in which a number of parents kept musical diaries of children from birth to 18 months. All these families noted intimate vocal play and spontaneous singing (Papoušek 1996; see also Malloch and Trevarthen 2009, various chapters). In related experiments by other researchers it has been found that babies

can discriminate acutely between the sounds they hear and can recognise melodies when played at different speeds (Trehub *et al.* 1984; Trehub and Trainor 1993). These examples confirm that music is a biological given, and that everyone is born with musical potential.

Music has extraordinary powers ‘to facilitate and energise meaning in communication’ (Malloch and Trevarthen 2009, 6). It can capture an infant’s attention in the way no other communication can. Children are innately curious about sounds, especially musical ones. They are predisposed to music, responding to it and as has been mentioned, remembering it even from before birth. Cases of ‘amusicality’ (failure to respond to music) are extremely rare (Cross and Morley 2009, 71). This is significant given that music is so valuable in forming and maintaining group cohesion – helping humans to act as social beings and to work cooperatively. ‘[Music] evolved as a prime factor of our social communication, our learning and the creation of cultural meaning’ (Panksepp and Trevarthen 2009, 106).

When people make music together the neural networks in their brains respond to the stimulus and they may experience a profound sense of exhilaration and engagement with others, a process known as ‘entrainment’. Singing together or playing instruments thus goes far beyond mere performance skills.

Many different parts of the brain are involved in music-making. Its effect can be compared to the euphoric experiences of drugs or food, also caused by the release of hormones. Music as a tool in therapy is well documented – see various papers in Malloch and Trevarthen (2009). While language and music do involve similar areas of the brain there are differences as well and indeed one of the attributes of music is that it does not depend on verbal language (Turner and Ioannides 2009, 174).

However music in early development has not yet been adequately researched, and there is a general ignorance about its role and potential. Some findings from neuroscience about the impact of music on the brain have led to over-application, a case in point being the promotion of the so-called ‘Mozart Effect’ – when several commercial firms latched on to the notion that immersing young children in the music of Mozart would improve intellectual development. In reality *all* music has that potential. Some claims are currently being made about the stimulating role music might have on language development and reading, though as yet there is insufficient evidence to confirm this (Lonie 2010). (For a further discussion of the issue of over-interpretation and under-interpretation see Young 2005.)

### **Research in ‘communicative musicality’**

Our understanding of human development in the earliest years is undergoing nothing less than a revolution. It stems in large part from the increasing information available from neuroscience and the use of new technologies in observational research. Some forty years ago ‘... medical and psychological sciences were not inclined to credit infants with complex skills or creative mental abilities, and certainly not with any active sympathy for other person’s thoughts or feelings’ (Malloch and Trevarthen 2009, 1). However, work in the UK

from the 1970s, has increasingly revealed the remarkable capacities of babies. In the laboratories of Edinburgh University, for example, Colwyn Trevarthen video-taped mothers and babies engaged in simple activities – mothers talking and singing and babies interacting. Analysing these recordings he and his colleagues discovered that right from birth babies were far from passive agents. They themselves were often instigators of relationships; they actively sought out new experiences; they were essentially social and sociable. They were altogether far more competent than most people had hitherto believed was possible. (Thus, until research demonstrated it and they saw it with their own eyes, some specialists in the field failed to recognise that babies could imitate the facial expressions of others (see Parker-Rees 2007).) Neuroscience worldwide is now revealing the enormous activity of the infant brain and the innate abilities of babies and young children.

Nevertheless, in all this the role and potential of music have tended to be overlooked – even, for example, in the valuable work of Gopnik and colleagues in the USA (Gopnik *et al.* 1999; Gopnik 2009). Overlooked until very recently, that is, for the interdisciplinary publication of Malloch and Trevarthen's large edited collection of international research papers *Communicative Musicality* (2009), demonstrates the new awareness, building on evidence from neuroscientists, biologists, anthropologists and others. It shows above all the fundamental musicality of babies in their early relationships and introduces the idea of 'communicative musicality' and its possible applications. This actual phrase was coined by Stephen Malloch after realising the musicality of a mother and her baby Laura chatting together. As he analysed the video-tape recording he could sense 'a distinct rhythmicity and melodious give and take to the gentle promptings of Laura's mother and the pitched vocal replies from Laura' (Malloch and Trevarthen 2009, 4).

The concept of communicative musicality has been endorsed by Bruner as 'a gift that complements language by providing us with a means for sharing and co-ordinating experienced space and time, thereby reducing the possibility for disagreement in excessively verbal meaning. It lies at the base of our ever-present intention to share our experienced worlds with each other' (Malloch and Trevarthen 2009, back cover). Playful adults have found that musical engagement with very young children can take many enjoyable forms – from rhythmically jiggling a small baby, humming a lullaby and responding to their exploratory tapping patterns or facial and gestural expressions, to engaging them with song as in 'This is the way we wash our hands' (to the tune of 'Here we go round the mulberry bush').

### **Characteristics of early musical communications**

Music can be a vital stimulus from the very start of life. In the first few months it helps guide 'the infant mind into a world of meaning in action' (Gratier and Apter-Danon 2009, 311). At this stage musical engagement is non-symbolic, non-verbal and unconscious, but it creates a sense of belonging and connectedness. Gratier and Apter-Danon studied mothers and babies across three cultures – France, India and United States – finding similar styles of communication.

Trevarthen and Malloch call these early exchanges ‘a delicate, dance-like proto-conversation’ (2009, 1). It is a joint and companionable engagement and it is hard to see who takes the lead (Papoušek 1996, 97). The mood is playful with both partners (adult and child) improvising. This kind of musical play is akin to Bruner’s classic ‘peekaboo’ games in which the adult catches the child’s attention and creates expectations all the while very attentive to the child’s responses (Bruner and Sherwood 1976, 277-285).

The way of speaking to babies – sometimes called ‘motherese’ or perhaps better ‘infant-directed speech’ – has special qualities. In this situation adults use more varied pitches in their voice, slow down the tempo, speak more rhythmically, and use shorter phrases. These qualities are in fact all musical. Clearly infant-directed speech is much more musical than adult-directed speech.

Music is a fundamental channel of communication: it provides a means by which people can share emotions, intentions and meanings. ... Music is something we do with and for other people, and which through its communicative properties can provide a vital lifeline for those whose special needs make other means of communication difficult (Miell *et al.* 2005, 1).

These writers even suggest that the ‘efficacy of music may be greatest in infancy and childhood’ (*ibid.*, 36), at the very time when children’s use of spoken language is just beginning.

### **Music in group settings with very young children**

In the belief that the potential of music is often unrecognised or at least undervalued, this article hopes to persuade staff in settings for under-threes that the potential of the ‘gift of communicative musicality’ lies within everyone – babies, children and adults. Musical experiences should be at the heart of professional practice, since they can so greatly enhance happiness and well-being through multi-sensory experiences and group engagement. From brain studies we now know more about human musical capacities generally, yet there is a serious lack of systematic study of infants in group settings. Susan Young points out that the evidence of Trehub and others, that babies are wired for music ‘is failing to challenge the deep-seated belief in Western cultures that the ability to succeed in music is dependent on genetic endowment which only a minority possess’ (Young 2005).

Ideally the daily experiences of babies and young children should include a mix of musical activities – such as playful dialogues between adults and children initiated by the children themselves, movement and dance, singing, experimenting with sound, improvising stories with music and rhythmic patterns, hearing well-chosen recorded music, and connecting up all these aural and kinaesthetic activities with visual and tactile ones (see Young 2011). Such multisensory activity can be described as multi-modal expression (Kress 1997), or what the pre-schools of Reggio Emilia call the ‘hundred languages of children’ (Edwards *et al.* 1998).

Clearly young children do not separate out the different modes of expression. During a musical experience their whole body may be naturally engaged – hand gestures, head nodding, legs and feet moving. In one observation a 14-month-old spontaneously played a xylophone with a beater, all the while jiggling up and down bending her knees in time to her beating. Dance or movement and music are inextricably linked, and always have been. Indeed they are essential in developing our personal understanding of the physical relationship of our body to the world around us (Greenland 2000; Goddard Blythe 2004).

The most significant aspect of communicative musicality in terms of daily practice is the recognition that musical qualities are innate and have a valuable place in developing relationships. In group settings it would seem that a child-focussed pedagogy is necessary, put into practice by knowledgeable, highly attentive and adaptable educators whose subtle responsiveness is central. The musical interaction involves intonation, tempo, phrasing, rhythm, loudness, pausing, turn-taking and voice quality.

Conveying the special detailed quality of musical interactions in words is difficult. The following Swedish example of playing ‘Itsy bitsy spider’ illustrates the adaptations adults make to the age and development of the child, and also shows that facial and vocal expressions must always be age-related.

*First few months*

Child lying down in a play situation. Adult makes a ‘spider hand’ and manually ‘climbs up’ the infant’s body with crawling movements starting at the infant’s feet. At the ‘water spout’ ending the infant is tickled under the chin. ‘Down comes the rain’ is performed by a single stroking movement with spread fingers covering the infant’s face and proceeding downwards over his or her body. ...

*Mid-infancy*

Adult and infant face one another, sitting close together on the floor or with the infant perched on the adult’s knee. The adult guides the infant in an assisted performance ...

*Late infancy*

Adult and child perform the pantomime sequence together in parallel ... (adapted from Eckerdal and Merker 2009, 256)

Much of the research about musical communication has tended to depend on detailed studies of self-selected (probably white middle-class) mothers and children, often in laboratory conditions. However, it is necessary to consider musical exchanges in children’s home environments each with their cultural characteristics. Staff working with very young children will require extra sensitivity to the musical experiences and styles of interaction in the home since they may well differ from those prevailing in the group setting.

The research report, *Music-One-to-One*, (Young, Street and Davies 2006). covers the musical experience of two-year-olds in present-day ordinary home life, an aspect that we otherwise know little about, and the different experiences of group sessions with professional musicians. From interviews with the parents the researchers found that in their homes the under-twos danced, sang and listened to an enormous range of music in their homes. Most of

this music however, was directed towards adults rather than children, and sourced through the massively increased range of media technologies now available. Hence the songs shared by mothers and children tended to be the popular music of the day rather than traditional nursery rhymes. Parents said they often used music to calm and soothe children for sleep. The group sessions with musicians mostly took the form of adult-led group singing and were not concerned with child-led improvisatory music. These professionals believed themselves to be promoting adult-child relationships as well as musical and language development and social skills. The parents on the other hand while valuing these sessions and incorporating new songs learned there into their everyday lives, significantly did not see the sessions as promoting language, social or musical skills. The musicians, moreover, did not attempt to find out anything about what the children did at home nor did they even consider whether there was any mismatch between home and group. Though this relatively small scale study provides a valuable glimpse into the lives of families we still need to know much more about how parents and children can be enabled to make music together. (Readers of this journal may have noted the recent review (March 2011) of Gillen and Cameron's new book (2010) which has an important chapter on musicality in the home.) Another publication, the detailed and long-term study by John Matthews into the development of drawing, provides a model that could be valuably followed for musical development (Matthews 2003).

Musical activity lags behind other areas of early years' creative expression in group settings. An important reason seems to be the adults' lack of knowledge of basic musical elements and how to support early representations of musical ideas. Lacking confidence staff may well turn to buying in a professional musician to run group sessions. However while these sessions may provide enjoyable entertainment they are unlikely to have long-lasting impact or engage children in one-to-one musical conversations.

*Musical Moonbeams: an example of reflective, collaborative musical practice*

Across the UK a few projects based on a reflective pedagogy that includes an understanding of children's communicative musicality are developing. One of these is the evolving long-term project, funded by Birmingham's Early Years' Training Team, embodying reflective practice and collaborative working between artists, educators and researchers. Child-initiated and adult-responsive approaches to learning are the basis of the approach. The research programme is carefully structured and involves pre-activity planning for the staff, the artist-musician, and the researcher. They investigate what can be learned about the musicality of two- to three-year-old children and how an artist can support the practitioners on this learning journey. Important features included building on current musical activities and learning more about the children's musicality from observations. Regular weekly morning sessions are musician-led activities with the children, followed by afternoons devoted to reflection and professional development with the staff, and also the creation of documentation for the parents (including CDs).

Nancy Evans' account (Evans 2009) offers a useful discussion of the issues around the sustainability of such a project, including the everyday pressures of a children's centre, perceptions of the project as exclusive and separate, staff availability, the vital importance of

sufficient reflection time, contrasting assumptions about the role of visiting artists, and unspoken agendas.

Visiting musicians, experienced in their own field, can find this way of working challenging.

It's so totally different from the way I was used to working where I was in control. Here you have to be able to let go to a certain extent and go with their flow, which is actually very exciting. To start off I thought I wasn't doing much and that people thought 'What on earth is she doing?!' But if you really focussed on the child that I was working with you could see that I was doing loads, ticking every box going. I was empowering the child, engaging and communicating, exploring musical ideas, developing fine motor skills, and ultimately having fun all the while the child was in control and seemingly guiding me (Evans 2007).

When a visiting musician has made the transition successfully the results can be mutually rewarding. However, from observations by Young, regular staff engaging in musical play may well be more important in fostering music than interventions by an outsider (Young 2011). Relationships and the detail of the musical communication with its intricate, responsive and improvisatory nature – sharing a common beat, taking turns, imitating each other, setting up expectations and enjoying resolutions – are what matter most.

Mimetic (imitative) behaviour is important for the passing on of culture in all societies (see Parker-Rees 2007). It goes beyond language, and indeed adults' imitation of young children's body movements, facial expressions, or musical experiments with voice or instruments develops children's self-esteem and confidence (see Shepard and Macfadyen 2008). Mimetic activity can be a wonderful medium in the toddler stage, before the child's speech is fluent. It is noticeable that babies and toddlers attempt the actions of traditional rhymes well before they can sing the words.

Adult responsiveness can take many different forms, such as scaffolding and structuring the experience. For example, a group of two-year-olds were observed tapping the table with cutlery, in time together. The visiting artist offered a variety of interesting objects to tap and this led on to using more traditional musical instruments. The banging on the lunch table ceased. Children's experiments can very easily be closed down by insensitive adult reactions.

It is obvious that adults, whether early childhood professionals or musicians, should accept very young children's individual expressions and not expect them conform to adult notions. There should be no 'wrong' musical efforts, nor should only those which seem to reach higher standards be singled out for praise. Adults must value the *process* of the children's experiences and not gauge the value of the activity by the end *product*.

Youth Music (a UK music charity supporting music for disadvantaged children and young people of all ages) recently initiated a review of research and outcomes of early years' projects. Its report emphasized the need to recognise that children from birth have

sophisticated levels of musicality, that musical talent is not predestined, and that we should consider music as a language in itself rather than a tool for other aspects of learning and development. Above all children should be *entitled* to musical and cultural expression (Lonie 2010). Colleagues will find *Music with Under Fours* (Young 2003) a comprehensive and insightful resource book and *Tuning in to Children* (Evans 2007) a rich booklet with useful checklists about work with parents and professional development.

### **Professional development**

How to prepare early years' educators for musical engagement with children under three is much more challenging than might be expected. Knowledge, skills, attitudes and values must all be examined. This article has briefly set out some of the factual knowledge educators need to know about the nature of music generally in relation to all ages, and communicative musicality in particular with its significance for children's well-being. Both these areas of knowledge should underpin the development of a particular age-related pedagogy. It can be argued that the attitudes and values of educators engaged with under-threes are of a special nature, different from those working with older children. Since the values embodied in pedagogy for this stage are concerned with deep respect for the child and his or her inborn competences, observing and listening are of the utmost importance. A companionate playful relationship is the goal. While the adult needs to behave in a spontaneous, probably intuitive way, nevertheless there must also be a place for serious in-depth reflection afterwards, making explicit the nature and detail of what has taken place. Much of this is pertains to all the creative expressive languages, but in terms of music many educators apparently seriously lack confidence in their skills and knowledge of the components of musical activity and its potential.

Parker-Rees considered the problem generally of how to 'recalibrate the perceptual tuning of early years practitioners in the light of our greater understanding of the rich and sophisticated interactions between babies and young children with their parents and carers' (Parker-Rees 2007). Initial training located in busy early years' settings may not offer the intimacy and peace needed for companionable musical relationships that depend vitally on attentive, engaged and playful adults. How can adults be prepared for this role? Observations of children in their homes may or may not give examples of musical engagement, given that adults are typically very shy about music-making and might well avoid it in the presence of an observer.

The model of professional development adopted by the Moonbeams project has already been mentioned (Evans 2009). The detailed structure of a similar project may help to demonstrate the necessary elements. The Bath-based action research project,  $5 \times 5 \times 5 = \text{creativity}$ , originally began with five artists (of all kinds, including musicians) and five educational settings working in collaboration with five cultural organisations (such as theatres, galleries, museums and music centres). More than 140 educational settings have now been involved across the UK during over ten years of research, with children and young people ranging in ages from 2 to 18 years. Though initially inspired by the values and practice of the Reggio

Emilia preschools, and by collaborative work with Sightlines Initiative (the UK reference point for Reggio Children), it has developed its own distinctive approach (Bancroft *et al.* 2008). Professional development is perceived as an on-going and integral part of the year-long placement of the artist in the setting. Artists, educators and cultural centre staff take part together on an equal basis with the aim of developing shared understandings of the values and goals, allowing different professional perspectives to emerge and a shared language to develop. On-going reflection and evaluation are the responsibility of all, ensuring a democratic sharing of responsibility and an opportunity for individuals to further their own personal learning. For further reading on the concept of action research see McNiff and Whitehead (2002).

5x5x5=creativity has an explicit philosophical framework, given here with examples of how it relates to music with under-threes (in italics).

- Children are seen as innate and creative knowledge builders, explorers and co-constructors of their learning. *Children's innate communicative musicality and their individual musical enquiries are valued.*
- Educators and artists (that is all creative enablers including musicians) are enablers and companions in the children's learning, within a culture of listening (a 'pedagogy of listening'). *Both musicians and educators respond to the children's musical ideas e.g. by imitation or by offering 'provocations'.*
- Child-focussed processes, not products, where children explore, think, and represent are the goals. *Children's musical experiments are valued. There is no judgment at this stage; adult criteria for judging music are not appropriate.*
- The 'hundred languages of children' or multi-modal expression are fostered. *Children are expected to spontaneously use a variety of expressive forms such as movement, singing, dance, drawing, drama, etc.*
- A creative and reflective cycle underpins the work ensuring constant reflection and evaluation. *Recording through video or film, particularly helpful for music, is used by the adults as a basis for detailed analysis and discussion.*
- Continuous professional development is integral. All colleagues have opportunities to present their research and learning stories and to discuss challenges. *Musicians can demonstrate and make explicit their specialist knowledge.*
- Collaboration with parents and the community. Parents are involved in documentation and participate in professional development too. *Through informal, and more specific experiences, families may gain new ideas about musical activity and value children's musicality and in the spirit of reciprocity the setting and artists learn from the parents about the musical cultures of their home.*

(Bancroft *et al.* 2008, 6-9)

5x5x5 uses a four-element research structure for analysis: creative values (notably the competence and strength of the child and the pedagogy of listening); creative relationships (attentive, respectful adults and children working collaboratively); creative environments

(both physical and emotional) and creative behaviours and dispositions (supporting creative thinking and learning dispositions, and holistic learning) (*ibid* 2008, 10).

Through running professional development for new organisations 5x5x5 has found that one of the most powerful forms of learning for students is that they themselves carry out small action research projects that are then presented and debated with others (5x5x5=creativity: Early Years Professional Learning Group 2011).

At the heart of musical companionship is the adult role. One of the 5x5x5 team describes adults as having three possible ethical positions – being *in front* and thus directing the child, or being *behind* and pushing the child along, or working *beside* the child. In the last position the child and adult are on the same level – co-researchers and companions. This perception of the adult role applies to all activity not just music. For a revealing short musical example see Nancy Evans in action ([www.teachingmusic.org](http://www.teachingmusic.org)).

But to analyse the musical elements of observations may well require someone with specialist knowledge. There is a real dilemma here. Musicians will probably not have the level of understanding of child development, while educators may lack musical knowledge. Professional development needs both strands but the Youth Music review reiterates Young's calls for a recognised qualification in early years' music at post-graduate or NVQ level (Lonie 2010).

This short article has not looked at issues of diversity and parental engagement. Readers should see Young's comprehensive chapter examining creativity and the temporal arts in relation to very young children (Young 2011).

## **Conclusion**

This article has examined recent research, some projects focussed on very young children and issues about pedagogy. At present many early years' staff do not, as a general rule, tune in to children's everyday musical behaviours and are unaware of their musical potential. Further action research (see McNiff and Whitehead, 2002) is necessary through the engagement of practitioners in building knowledge about the actual ways that young children explore and represent music in their play. From this information appropriate pedagogies for music may be developed.

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