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# Vývojová psychologie Emoce kojenců a IDS a hudební schopnosti

# Rodičovské chování = epimeletický pud

Brazelton: **synchronizovaný cyklus interakce matky a dítěte** (trvá několik sekund):

Zahájení interakce (vzbuzení zájmu) - vyladění vzájemné pozice - pozdravení (mimika, vokalizace, úsměv...) – „dialog“ (zapojení všech smyslových modalit, vrchol radostné excitace) – oslabení - odvrácení pozornosti.

# Rodičovské chování = epimeletický pud

Rodiče omezují svůj repertoár chování: více se usmívají, přehánějí některé výrazy obličeje, výrazněji intonují... to pomáhá nastolit soc. kontakt a pomáhá při rozvoji dítěte.

Dítě si všímá našich zrcadlení jeho činnosti a postupně pochopí, že chování může něco znamenat.

V kojeneckém období se učí skrze klasické a operantní podmiňování a později skrze záměrnou imitaci.

První hry představují aktivitu rodiče a pasivitu ale zážitek dítěte: lechtání, kuk!, mazlení.

Imitovat nejlépe začíná motorické hry, které nejsou komunikační, ale mají význam samy o sobě (Caillois, 1998; Fink, 1992): paci paci, vařila myšička kašičku...

# Emoce

**Emoce jsou hlavním prostředkem primární komunikace.**

## Pláč

- z hladu
- ze zlosti
- z bolesti
- z frustrace

Pokud na pláč reagujeme, děti získávají důvěru a v důsledku pláčou méně, než ty, které neutěšujeme.

## Úsměv

- krátce po porodu, 2. týden - po krmení, 1. měsíc - je více sociální, 2. měsíc – rozeznává lidi a směje se pravidelněji

# Vývoj emotivity - úsměv

Měsíční kojeneček se zřídka usmívá na neznámou tvář, avšak s každým týdnem se usmívá stále častěji. Vrcholu nabývá úsměv kolem 4. měsíce (téměř automaticky).

Děti vychovávané doma se usmívaly v 18. měs. skoro stejně jako ve 4. měs.

Děti z kibuců (kolektivní osady) se usmívaly o polovinu méně.

Děti z ústavů se usmívaly méně než v jednom měsíci! (Hunt, 2000. s. 351)

- Kojenec se naučí smát nahlas (= úsměv doprovázený hlasitými smavými zvuky) od 4-5 měsíců.

**Infant-directed speech (IDS) dle  
Mithen (2007) ad.**

# Infant-directed speech (IDS)

- IDS is the very **distinctive way we talk to infants**:
- exaggeration of melodic and rhythmic features of spoken language (**prosody**): a **higher overall pitch**, a wider range of pitch, **longer 'hyperarticulated' vowels** and pauses, **shorter phrases, greater repetition** (srov. zdvojování slov u Daniů) and **greater variation in volume**.
- Even very young children (three-year-olds) use IDS!



# Four stages of IDS

1. IDS serves to engage and maintain the child's **attention**.
2. IDS starts to **modulate the arousal and emotion** (soothing, engaging attention, maintaining child's gaze).
3. IDS starts to **communicate the speaker's feelings (emotions) and intentions** (as an approval, prohibition, attention-bidding and comfort).
4. The pauses and specific patterns of intonation facilitate the acquisition of language.

# Similarities and differences in IDS

- Fathers appear not to expand their pitch range as widely as mothers.
- Those who are new to conversing with babies do it with the same degree of exaggerated prosody as experienced mothers – and the babies enjoy it.
- Children much prefer listening to IDS than to normal speech! (Fernald, 1991)
- Infants are far more responsive to intonation of voice than to facial expression!
- This applies equally to premature infants, who are more frequently calmed by the use of IDS than by other techniques such as stroking!

# The universality of IDS

Whatever country we come from and whatever language we speak, **we alter our speech patterns in essentially the same way** when talking to infants. (Fernald et al., 1989)

Fernald et al. (1989) cross-linguistic research of IDS in speakers of French, Italian, German, Japanese, British and American English.

Conclusion: She found the same degrees of heightened pitch, hyperarticulation, repetition and so forth in all languages.

**Japanese**-speakers employ a generally lower level of emotional expression in comparison with other language speakers.

Speakers of **American English** had the most exaggerated levels of prosody.

# The universality of IDS

The universality of IDS was demonstrated by the infants responded in the appropriate manner to the type of phrase they were hearing, frowning at the phrases expressing prohibition and smiling at those expressing approval, **whatever language was spoken and even when nonsense words were used.**

It means that in IDS the melody itself is the information.

- **With one exception:** the infants made no response when the phrases were spoken in **Japanese.**
- Why is that?

# Question

- Question: What manner of speech do you use when talking on the phone, to a friend, to a child and to your boss?

# The universality of IDS

**Tonal languages**, as Chinese, Xhosa, Athabaskan (Dené) languages, **use the pitch for changing the meaning of words** (not only of the importance of the same words).

Mothers speaking in tonal languages surprisingly use the same patterns of pitch and intonation in their IDS.

That the same patterns are use both in Indo-European and also in other languages strengthens the argument that **the mental machinery of IDS belongs originally to a specific (musical?) ability concerned with regulating social relationships and emotional states.**

- Does the lack of pitch in the Japanese language affect development in infants? (perhaps pitch detection)

# Pet-directed speech (PDS)

There are similarities between IDS and PDS“  
high pitch and variation of pitch.  
(Jeannin et al., 2017)

- Question 1: I wonder why we use PDS when talking to animals if we know they won't ever acquire language abilities?
- Question: How does music affect pets' ability to learn or interact with humans?

# Problems of the perfect pitch

When we enter the world, we have perfect pitch, but this ability is replaced by a relative pitch as we grow older.

Why?



Because the perfect pitch **prevents generalizations.**

Question: Is it possible to relearn perfect pitch for those who lose it?

Question: What made researchers find the connection between IDS and music?

# Prosody and Singing

Trehub & Schellenberg (1995) found cross-cultural similarities in **lullabies** (melodies, rhythms and tempos). Trehub et al. (1997) found that babies will spend significantly longer periods attending to audiovisual recordings of their mothers when they are **singing** rather than speaking.

Most strikingly (Standley, 1999), **the singing of lullabies by a female vocalist significantly improved the development of sucking abilities in premature infants**, and this resulted in measurable **weight gain**. Premature infants subjected to a combination of music and massage were discharged an average of **eleven days** earlier than a control group of infants!

Question: Why is maternal singing linked to so many positive effects in infants but not paternal singing?

- The observation that everyone learns to talk, whereas musical talent is rare, **is true only for music in modern societies**. In small-scale societies people sing and dance as readily and competently as they converse." (Dissanayake, 2005)
- Question: What is the importance of laughter in infant development?
- Question: If women laugh more than men, why do both men and women laugh more when listening to a male?

In *The Prehistory of the Mind* (1996) Mithen argued that pre-sapiens hominids like **Neanderthals lacked “cognitive fluidity”** or metaphorical thought—the ability to hold concurrently in mind information from several different cognitive domains.

Additionally, the absence of symbolic artifacts in their dwelling sites implies absence of symbolic thought and hence of symbolic utterance—i.e., of spoken language (p. 228).

The challenging lives of Neanderthals required complex emotional communication and intergroup cooperation. They developed a **“music-like communication system** that was more complex and more sophisticated than that found in any of the previous species of Homo” (p. 234), one that included: iconic gestures, dance, onomatopoeia, vocal imitation and sound synaesthesia.

Mithen proposes a completely original hypothesis of the existence of a proto-music/language among Neanderthals: “the ‘**Hmmmmm**’ communication system” (p. 172).

‘Hmmmmm’ communication system was:

- *holistic* (not composed of segmented elements),
- *manipulative* (influencing emotional states and hence behavior of oneself and others; not for gossiping),
- *multimodal* (using both sound and movement),
- *musical* (temporally controlled, rhythmic, and melodic),
- *mimetic* (utilizing sound symbolism and gesture).

Mithen (2005) adds that there are two main types of sexual selection pressures:

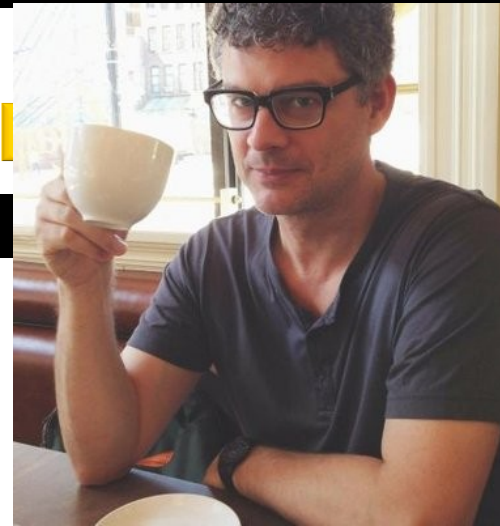
1. **Male competing with other males** results in selection of traits such as large male body size and large canines, and perhaps aggressive personalities.
2. **Females can choose their mating partners**, leading to the selection of the indicator and/or aesthetic traits that make males attractive to females (tails, jewels, i.e. aesthetic objects).

There is correlation between a sexual dimorphism (especially in terms of body size) and polygynous mating system. So, when male to female body size ratio shifted from australopithecine's 1.4:1 to modern humans' 1.2:1 when *Homo ergaster* appeared, it suggests the shift from polygynous to monogamous mating system.

Who supported ever raising demands on energy for babies with ever larger brain capacity?

Males? Maybe, but if it was then as it is now, then men didn't provide enough energy by hunting. More probable source of additional energy was from female-female coalitions.

# Music and sexual selection



Geoffrey Miller (1965), U. of New Mexico

**Runaway sexual selection** comes if a heritable mate preference – for example, the preference for a larger than average tail – becomes genetically correlated with the heritable trait itself – in this case the larger tail – then a positive feedback loop will arise so that tails will eventually become far longer than would otherwise have been expected.

For Miller, 'music is what happens when a smart, group living, anthropoid ape stumbles into the evolutionary wonderland of **runaway sexual selection** of complex **acoustic display**'.



# Birdsongs and bird dances

Birds of paradise :

<https://www.youtube.com/watch?v=nWfyw51DQfU>

Bowerbirds:

<https://www.youtube.com/watch?v=1XkPeN3AWIE>

Vogelkop Bowerbird:

<https://www.youtube.com/watch?v=RXwJ3QFIOkg>

<https://www.youtube.com/watch?v=o8xZeU6Aksc>

Lyrebird:

<https://www.youtube.com/watch?v=WAotP-p7m4o>

He believes that **singing and dancing constituted a package of indicator traits for those choosing mates**, predominantly by females: dancing and singing revealing fitness, coordination, strength and health; voice control revealing self-confidence.

Wodaabeové

[https://www.youtube.com/watch?v=XkrR2jy-9WU&ab\\_channel=NinaTikarimages](https://www.youtube.com/watch?v=XkrR2jy-9WU&ab_channel=NinaTikarimages)

Question: What factor do you find most important in mate selection?

Question: How important were personality traits when females chose a male mate, and did it depend on time periods and types of society?

Caillois, R. (1998). *Hry a lidé*. Praha: Oikúmené.  
Dissanayake. (2005).  
(Fernald, 1991)  
Fernald et al. (1989)  
Fink, E. (1992). *Oáza štěstí*. Praha: Mladá fronta.  
Gazzaley,  
Jeannin, S., Gilbert, C., Amy, M. *et al.* (2017).  
Pet-directed speech draws adult dogs'  
attention more efficiently than Adult-directed  
speech. *Sci Rep* 7, 4980.  
<https://doi.org/10.1038/s41598-017-04671-z>  
Mithen 2007





Uzgiris-Hunt's Scales were inspired by the work of Piaget (see entry: Piagetian Stages) and thus are grounded in the theory that development is an "epigenetic process of evolving new, more complex, hierarchical levels of organization in intellect and motivation" (Uzgiris & Hunt, p. 47). The Scales include:

- Scale I: The Development of Visual Pursuit and the Permanence of Objects,
- Scale II: The Development of Means for Obtaining Desired Environmental Events, Scale
- IIIa: The Development of Vocal Imitation, Scale
- IIIb: The Development of Gestural Imitation, Scale
- IV: The Development of Operational Causality, Scale
- V: The Construction of Object Relations in Space, and Scale
- VI: The Development of Schemes for Relating to Objects.