

Adult non-parents can recognize babies from their pain cries

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Adult non-parents can recognize babies from their pain cries



Experience

(n=21)

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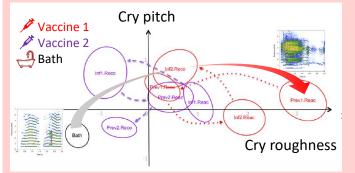
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Rationale: information in baby's cries

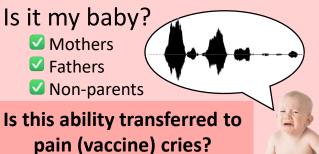
Lyon 1

lnserm

• Acoustic roughness is specific to pain cries

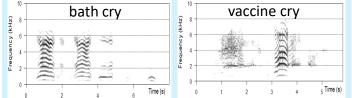


- Parents can distinguish between milddiscomfort and pain cries (Koutseff et al., 2017, **Bioacoustics**)
- Individual recognition from milddiscomfort (bath) cries (Gustafsson et al., 2013, Nat. Commun.; Bouchet et al., 2020, Proc. Biol. Sci.)



Methods

22 babies recorded during bath and vaccine



Acoustic similarity index per baby: median of spectrogram correlation bath/vaccine

• Playback experiment:

42 non-parent adult listeners were assigned to one baby

Training phase

J1: 5 bath cries of the "assigned" baby J2: 5 other **bath cries** of the "assigned" baby

Test phase

J2: 20 pain cries of the "assigned" baby (4 cries) and 4 unknown babies (4x4cries)

Which one is "my" baby crying from pain?

Multiple logistic regression

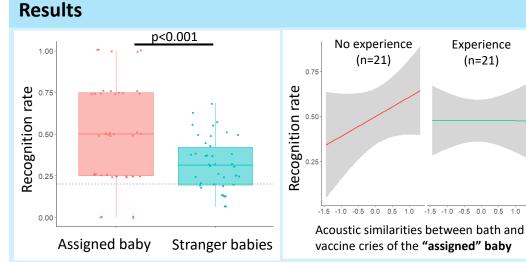


Fig.1. Assigned babies were successfully identified more than stranger babies. No effects of listener's sex nor age were found.

Fig.2. Non-parents with no experience at caring for babies seemed to be more sensitive to acoustic similarities

No experience

(n=21)

Conclusion



After listening few non-painful cries, adults are able to recognize a specific baby from its pain cries. Thus, there is an **individual vocal signature** present in the baby's discomfort and pain cries. Human without prior experience are able to learn quickly these important signals suggesting that it requires cognitive and perceptual abilities common to all adults rather than specific to mothers or fathers.

These findings will help to understand how distress is encoded in babies' cries to better assess their pain in pediatric care services.

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