Intro to Cognitive Neuroscience

Some thoughts about music
What is music?
What is music?

• Definition from Wikipedia - an art form in which the medium is sound organized in time.

• Common elements of music:
  
  • Pitch (which governs melody and harmony)

  • Rhythm (and its associated concepts tempo, meter, and articulation)

  • Dynamics

  • Timbre and texture
Music cognition

- Field of studying the processes by which listeners hear, process, and understand music.

- http://flashmedia.uva.nl/avc/uvatv/fascinatie/h_h_s.html
Music is a human quality

• Can music convey precise ideas?

• Four drumbeat clips - do these convey anger, solemnness, sadness, happiness, tenderness, or fear?

Music is a human quality

- Can music convey precise ideas?

- Four drumbeat clips - do these convey *anger, solemnness, sadness, happiness, tenderness, or fear*?

- Clip 1  

To hear the clip, go to:
Music is a human quality

• Can music convey precise ideas?

• Four drumbeat clips - do these convey anger, solemnness, sadness, happiness, tenderness, or fear?

• Clip 2 To hear the clip, go to: http://scienceblogs.com/cognitivedaily/2005/04/drumbeats_alone_can_convey_emo.php
Music is a human quality

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Clip 3

To hear the clip, go to:
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• Clip 4

  • To hear the clip, go to: http://scienceblogs.com/cognitivedaily/2005/04/drumbeats_alone_can_convey_em.php
Music is a human quality

• Can music convey precise ideas?

• Laukka and Gabrielsson, had participants listen to drum rhythms, ID the emotion expressed.

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To see the results of this study go to the following link:

Music is a human quality

- So music - even just a drum rhythm - can convey emotion. How about more precise ideas?

- Koelsch et al had participants either hear a sentence or a musical passage, and then presented them with a word.

- Participants had to determine whether the word and passage were related.

- Compared ERPs of related and unrelated sentences, music.

Music is a human quality

• Sentence prime 1: The gaze wandered into the distance.

• Sentence prime 2: The manacles allow only little movement.
Music is a human quality

• Sentence prime 1: The gaze wandered into the distance.

• Sentence prime 2: The manacles allow only little movement.

• Music prime 1: R. Strauss
Music is a human quality

• Sentence prime 1: The gaze wandered into the distance.

• Sentence prime 2: The manacles allow only little movement.

• Music prime 1: R. Strauss

• Music prime 2: H. Valpola
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• Image removed due to copyright issues.

• Go to the following link to see the image: http://www.implicit-marketing.de/weblog/images/4.jpg