## Concordia University

## Questionnaire

The Necessary Aural Skills for Electroacoustic Music
Instrument designed by Eldad Tsabary
$\qquad$
Telephone:
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## Guidelines and General Information

This purpose of this questionnaire is to determine which aural skills and knowledge are potentially necessary for composing, performing, and understanding electroacoustic music and to what extent they can be taught through traditional aural training.

The term electroacoustic (EA) refers to any conversion between acoustic energy and electric energy; put plainly, any sound production and reproduction by electric means is electroacoustic.

EA music is broadly defined in this study as all music or sonic art that is not limited to pitched content and metric rhythms, which incorporates an electroacoustic component.

Traditional aural training is viewed in this study as the practice of dictation (of intervals, chords, rhythm, melody, harmonic progressions, counterpoint, etc.), solfege (sight singing of melodies and rhythms), and score reading.

Completing the questionnaire will take approximately 30 minutes.
Your participation in this study is completely voluntary. There are no foreseeable risks associated with this project. However, if you feel uncomfortable answering any questions, you can withdraw from the questionnaire at any point. It is very important for us to learn your opinions.

Your responses will be strictly confidential and data from this research will be reported only in the aggregate. Your information will be coded and will remain confidential. If you have questions at any time about the survey or the procedures, you may contact Eldad Tsabary at 1-514-765-9245 or by email at eldad@yaeldad.com

Be sure to press the SUBMIT button at the end of the questionnaire; this will automatically create an email message with an attachment containing the data of your filled out questionnaire.

Thank you very much for your time and support.

Section 1 - Demographics

1. Sex:Male
2. How many years of experience do you have in the field of EA music?
$\square$ None5-10 years0-1 years$10-20$ years1-5 yearsmore than 20 years
3. To what extent are you involved with EA music?
$\square$ Not involvedIndirectly involvedVery involvedSomewhat involvedOften involvedIt is my main field of work/study
4. Which of the following activities best describes your primary involvement in EA? (choose all that apply)Composition and performanceTeachingResearchOther $\qquad$
5. How many years of college or university education do you have in music:
$\square 1$ or less $\quad \square 2 \quad \square 3 \quad \square 4 \quad \square 5 \quad \square 6 \quad \square 7 \quad \square 8$ or more your major: $\qquad$
6. How many years of college or university education do you have in electroacoustics:
$\square 1$ or less $\quad \square 2 \quad \square 3 \quad \square 4 \quad \square 5 \quad \square 6 \quad \square 7 \quad \square 8$ or more
your major: $\qquad$
7. Have you taught ear training in the past?
$\square$ Yes
No
For how many years? $\qquad$

## Section 2 - Aural Skills for EA music

The following list includes a number of potential aural skills. For each item please indicate how necessary it is for EA music, in your opinion, and to what extent can traditional aural training teach it.

| Skill / Knowledge | To what extent is this skill necessary? |  |  |  |  |  | To what extent can traditional aural training teach it? |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { No } \\ & \text { opinion } \end{aligned}$ | Not <br> necessary | Somewhat <br> necessary | Fairly necessary | $\begin{aligned} & \text { Very } \\ & \text { necessary } \end{aligned}$ | Absolutely necessary | $\begin{aligned} & \text { No } \\ & \text { opinion } \end{aligned}$ | Not <br> capable | Hardly or indirectly capable | Somewhat <br> capabl | very capable | Perfectly capable |
| 1. Sight singing melodies | $\square{ }^{0}$ | $\square{ }^{1}$ | $\square{ }^{2}$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square{ }^{0}$ | $\square 1$ | $\square^{2}$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 2. Recognition of frequency ranges (spectral bands) | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square{ }^{0}$ | $\square{ }^{1}$ | $\square^{2}$ | $\square^{3}$ | $\square 4$ | $\square 5$ |
| 3. Sight singing rhythms | $\square \square_{0}$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square^{0}$ | $\square^{1}$ | $\square^{2}$ | $\square^{3}$ | $\square^{4}$ | $\square{ }^{5}$ |
| 4. Segregation of aural streams (the ability to discriminate among simultaneous sounds) | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 5. Harmonic interval identification | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square \square^{0}$ | $\square{ }^{1}$ | $\square^{2}$ | $\square \square^{3}$ | $\square 4$ | $\square 5$ |
| 6. Knowledge of a specialized vocabulary to describe timbre | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square{ }^{0}$ | $\square^{1}$ | $\square^{2}$ | $\square^{3}$ |  | $\square{ }^{5}$ |
| 7. Melodic interval identification | $\square \square_{0}$ | $\square 1$ | $\square$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square{ }^{0}$ | $\square^{1}$ | $\square^{2}$ | $\square^{3}$ | $\square^{4}$ | $\square{ }^{5}$ |
| 8. Sound typification (the ability to categorize sound sources into timbral families) | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |


|  | $\begin{aligned} & \text { No } \\ & \text { opinion } \end{aligned}$ | $\begin{aligned} & \text { Not } \\ & \text { necessary } \end{aligned}$ | $\begin{aligned} & \text { Somewhat } \\ & \text { necessary } \end{aligned}$ | $\begin{aligned} & \text { Fairly } \\ & \text { necessary } \end{aligned}$ | $\begin{aligned} & \text { Very } \\ & \text { necessary } \end{aligned}$ | $\begin{aligned} & \text { Absolutely } \\ & \text { necessary } \end{aligned}$ | $\begin{aligned} & \hline \text { No } \\ & \text { opinion } \end{aligned}$ | $\begin{aligned} & \text { Not } \\ & \text { capable } \end{aligned}$ | $\begin{aligned} & \text { Hardly or } \\ & \text { indirectly } \\ & \text { capable } \end{aligned}$ | $\begin{aligned} & \hline \begin{array}{l} \text { Somewhat } \\ \text { capable } \end{array} \end{aligned}$ | $\begin{aligned} & \text { Very } \\ & \text { capable } \end{aligned}$ | $\begin{aligned} & \begin{array}{l} \text { Perfectly } \\ \text { capable } \end{array} \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 9. Chord-type identification | $\square 0$ | $\square 1$ | $\square{ }^{2}$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square{ }^{0}$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 10. Harmonicity-level recognition (the ability to hear whether a sound is spectrally more complex than another) | $\square{ }^{0}$ | $\square 1$ | $\square \square^{2}$ | $\square^{3}$ | $\square 4$ | $\square \square^{5}$ | $\square{ }^{0}$ | $\square 1$ | $\square^{2}$ | $\square^{3}$ | $\square 4$ | $\square 5$ |
| 11. Recognition of scaledegree notes in a tonal setting | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 12. Discriminating among different dynamic levels | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 13. Melodic dictation | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 14. Recognition of minute dynamic variations | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square{ }^{0}$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 15. Harmonic-progression dictation | $\square 0$ | $\square 1$ | $\square^{2}$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square{ }^{0}$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 16. Recognizing and describing the amplitude envelope of a sound | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 17. Rhythmic dictation | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 18. Recognizing the pitch contour of microtonal sounds | $\square \square^{0}$ | $\square 1$ | $\square^{2}$ | $\square^{3}$ | $\square 4$ | $\square{ }^{5}$ | $\square{ }^{0}$ | $\square 1$ | $\square^{2}$ | $\square^{3}$ | $\square 4$ | $\square 5$ |
| 19. Sight singing melodies in harmonic / polyphonic settings | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |


|  | No opinion | $\begin{aligned} & \text { Not } \\ & \text { necessary } \end{aligned}$ | $\begin{aligned} & \text { Somewhat } \\ & \text { necessary } \end{aligned}$ | $\begin{aligned} & \text { Fairly } \\ & \text { necessary } \end{aligned}$ | $\begin{aligned} & \text { Very } \\ & \text { necessary } \end{aligned}$ | $\begin{aligned} & \text { Absolutely } \\ & \text { necessary } \end{aligned}$ | No opinion | capable | $\begin{aligned} & \text { Hardly or } \\ & \text { indirectly } \\ & \text { capable } \end{aligned}$ | $\begin{aligned} & \text { Somewhat } \\ & \text { capable } \end{aligned}$ | capable | $\begin{aligned} & \text { Perfectly } \\ & \text { capable } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20. Recognizing contour and movement of several simultaneous streams | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square{ }^{0}$ | $\square 1$ | $\square{ }^{2}$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 21. Recognizing melodic contour | $\square 0$ | $\square 1$ | $\square{ }^{2}$ | $\square^{3}$ | $\square 4$ | $\square 5$ | $\square^{0}$ | $\square 1$ | $\square^{2}$ | $\square 3$ | $\square^{4}$ | $\square{ }^{5}$ |
| 22. A phonetic dictation (phonetic transcription of spoken/sung language) | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square{ }^{0}$ | $\square 1$ | $\square^{2}$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 23. Recognizing minute variations in the frequency-range of unpitched content | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square{ }^{0}$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 24. Identifying articulation markings of individual notes | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square{ }^{0}$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 25. Knowledge of the International Phonetic Alphabet (IPA) | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 26. Identifying ornaments (trill, mordent, turn, appoggiatura, etc.) | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square{ }^{0}$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 27. Identification of intonation of verbal content | $\square 0$ | $\square 1$ | $\square{ }^{2}$ | $\square^{3}$ | $\square 4$ | $\square 5$ | $\square{ }^{0}$ | $\square 1$ | $\square^{2}$ | $\square^{3}$ | $\square^{4}$ | $\square{ }^{5}$ |
| 28. Knowledge of the ear's physiology | $\square 0$ | $\square 1$ | $\square^{2}$ | $\square{ }^{3}$ | $\square 4$ | $\square 5$ | $\square{ }^{0}$ | $\square^{1}$ | $\square^{2}$ | $\square 3$ | $\square^{4}$ | $\square{ }^{5}$ |
| 29. Identifying stresses in verbal content | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square{ }^{0}$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 30. Knowledge of ear health issues | $\square 0$ | $\square 1$ | $\square 2$ | $\square^{3}$ | $\square 4$ | $\square 5$ | $\square{ }^{0}$ | $\square 1$ | $\square^{2}$ | $\square^{3}$ | $\square 4$ | $\square 5$ |


|  | $\underset{\substack{\text { Nopinion }}}{\text { opl }}$ | $\begin{aligned} & \text { Not } \\ & \text { necessary } \end{aligned}$ | $\underset{\substack{\text { Somewhat } \\ \text { necessry }}}{ }$ | $\underset{\substack{\text { Fairly } \\ \text { neessary }}}{ }$ | ${ }_{\substack{\text { Very } \\ \text { necsarary }}}$ | $\underset{\substack{\text { Absolutely } \\ \text { neessary }}}{ }$ | $\underset{\substack{\text { Nopinion }}}{\text { Nom }}$ | $\underset{\substack{\text { Not } \\ \text { capale }}}{\text { ent }}$ |  | Somewhat capale | $\underbrace{\text { a }}_{\substack{\text { Very } \\ \text { capalle }}}$ | $\substack{\text { Perfectly } \\ \text { capale }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 31. Recognizing musical instruments | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 32. Segregation of individual notes in a cluster | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 33. Segregating notes from a masking noise (hearing through the noise) | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 34. Recognizing special instrumental effects (such as tremolo, pizzicato, spicatto, mutes, etc.) | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 35. Recognizing reverberation time (how long the reverberation lasts in a certain space) | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 36. Recognizing reverberation density (the density of the reflections) | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 37. Hearing reflection coloring (the ability to spectrally compare the original sound with its reflections) | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 38. Resonance (the ability to hear whether a certain space boosts certain frequencies) | $\square 0$ | $\square 1$ | $\square{ }^{2}$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square{ }^{0}$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 39. Strong auditory memory | $\square 0$ | $\square 1$ | $\square{ }^{2}$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |


|  | $\underset{\text { Nopinion }}{\text { Non }}$ | ${ }_{\substack{\text { Notesarasaly } \\ \text { necesal }}}$ | $\underbrace{\text { a }}_{\substack{\text { Someshat } \\ \text { neessary }}}$ | $\underbrace{}_{\substack{\text { Fairly } \\ \text { necesary }}}$ | $\underbrace{}_{\substack{\text { Very } \\ \text { necesary }}}$ | $\underbrace{\substack{\text { Absolululy } \\ \text { neessary }}}_{\text {a }}$ | $\underset{\substack{\text { Noporino }}}{\text { Ofe }}$ |  | $\begin{aligned} & \text { Hardly or } \\ & \text { indirectly } \\ & \text { capable } \end{aligned}$ | Somewhat capale | $\underset{\substack{\text { very } \\ \text { capale }}}{\text { den }}$ | ${ }_{\substack{\text { Perfectly } \\ \text { capale }}}^{\substack{\text { a }}}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 40. Spatial definition (an improved ability to hear where a sound comes from) | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 41. Pre-delay (recognizing the time between the original sound and the first reflection) | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 42. Microtemporal discrimination (the ability to hear very small temporal differences in a sound's onset or duration) | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 43. Macrotemporal discrimination (the ability to hear small variations in tempo) | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 44. Identifying gestural or motivic similarity and variation | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 45. Recognizing register in different instruments | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 46. Recognition of musical form (structure) | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 47. Recognition of spatial coherence and spatial ambiguity | $\square{ }^{0}$ | $\square 1$ | $\square{ }^{2}$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square^{0}$ | $\square 1$ | $\square{ }^{2}$ | $\square{ }^{3}$ | $\square 4$ | $\square 5$ |


|  | No opinion | Not necessary | Somewhat necessary | Fairly necessary | Very necessary | Absolutely necessary | No opinion | Not capable | Hardly or indirectly capable | Somewhat capable | $\begin{aligned} & \hline \text { Very } \\ & \text { capable } \end{aligned}$ | Perfectly capable |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 48. Identifying noises (digital and analog noises, such as clipping, aliasing, quantization error, hisses, and hums, etc.) | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 49. Recognition of musical textures (monophony, homophony, polyphony, etc.) | 0 | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |
| 50. Recognizing phase relationships (interference) | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ | $\square 0$ | $\square 1$ | $\square 2$ | $\square 3$ | $\square 4$ | $\square 5$ |

51. In a few words please provide additional aural skills (if any) that you believe to be necessary for EA music
$\square$
52. Do you know of additional aural training methods that could be used for EA music?
53. In your opinion, are any of the skills listed above not teachable?

## Section 3 - About This Questionnaire

1. In your opinion, is this questionnaire effective for discovering what aural skills are necessary for EA? Please elaborate.
$\square$
2. Were the questions clear and sufficiently specific? Did you have trouble answering any of them?

3. Do you have any other comments on this questionnaire or on the subject of aural training for EA?


## SUBMIT

