BREAKING OUT OF THE CIRCLE OF FIFTHS

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Problem and background

This PhD-project aims at a better understanding of how students in Swedish upper secondary school learn music-theoretical concepts and models, and how such conceptualisation processes relate to specific educational practices. The questions addressed here concern how the Circle of Fifths (CoF) is treated in lessons, deployed in problem-solving, and used in meaning-making.

Theory and method

This research draws on Vygotsky's (2012) distinction between scientific and everyday forms of conceptualisation. This theoretical framing suggests a focus on how participants use semiotic tools to establish relations between concepts, and to connect abstract concepts with concrete experience.

The problem was approached through observations of classroom interaction and qualitative interviews with students. One teacher's lessons in aural skills and music theory with two student-groups in their first year were followed over a period of six weeks. Interviews were conducted before and after the period of lesson observations (10 students, of which 7 were interviewed twice). Both lessons and interviews were video recorded.

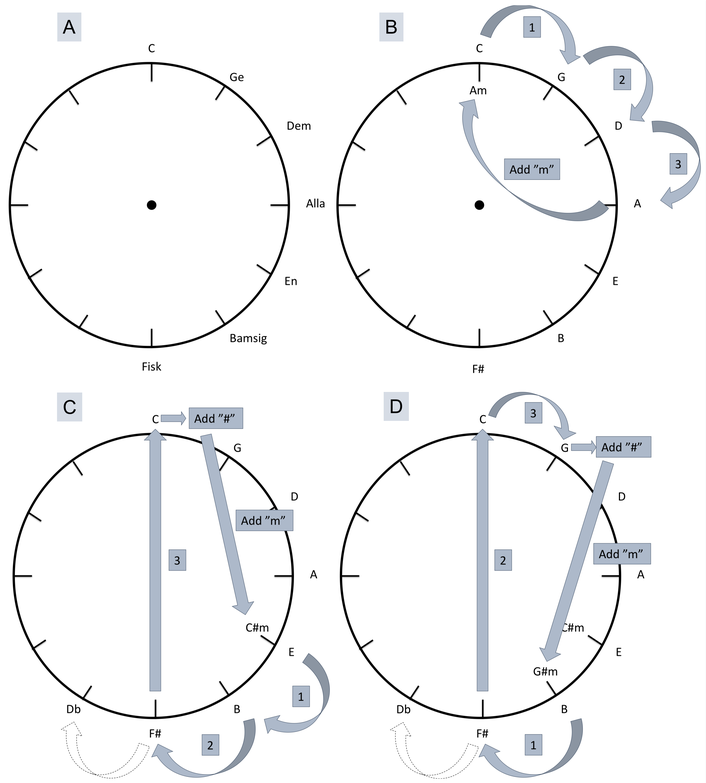

Figure 2: Example of a self-referential mnemonic strategy for reproducing the CoF. **A:** Mnemonic sentence. **B:** Generating minor relatives by jumping three steps clockwise. **C–D:** Extension of B designed to avoid enharmonic equivalents beyond F-sharp.

Interview excerpt, interview 2 with Lena:

Niklas: eeh, have you thought about WHY they're in that order?

Lena: [quietly:] nooo [normally:] I haven't done that like that [looks at CoF] [whispering:] (see/C) (hm) [quietly:] (sssee/drawn out C)

N: we can turn it over [turns sheet of paper so that it is in the correct direction for L and drops something on the floor] oops!

L: [quietly:] G D [normally:] is it… a fifth between each, (no)?

N: (inaudible)

L: is it?

N: yup, that's why it's called the circle of fifths

L: yeah, okay yeah. [laughter] HA! You could think like that maybe [laughter]

Preliminary findings

The CoF was involved in almost all talk about central concepts such as "key" and "tonic". Keys were frequently visualised as "boxes", collections of adjacent chords in the CoF (see Figure 1), and functions (T, S, D, etc.) were defined in terms of their relative positions in the CoF. The logic of the CoF itself, however, mostly remained implicit.

Instead, a relatively large amount of lesson time was devoted to demonstrating how to use the CoF in transposing and to demonstrating different mnemonic strategies designed to aid in reproducing the diagram. Figure 2 illustrates one such strategy, which was extreme in its reliance on surface features of the diagram.

Such strategies could facilitate performance without necessitating understanding. An example of this is Lena, a student who was very successful in applying such techniques to reconstruct (externally on paper and intramentally) the CoF and deploy it in solving transposing tasks. As can be seen in the Interview excerpt, however, she had not noted one of the basic organising principles underlying the diagram (the fifth).

During lessons, the main way of making meaning with and of the CoF was through repeated application in transposing. At times, function-concepts were used to mediate the transition between (A) linear representations of chord progressions and (B) two-dimensional representations of chord relations in the CoF. This could potentially highlight the structural sameness of a chord sequence across different keys. In the interviews, the two students who seemed to have appropriated the CoF most fully both made sense of the relations in the diagram in terms of their musical practice. It is possible that the mnemonic techniques, though quite meaningless on their own, can aid in this process of sense-making by allowing the students to recollect and utilise the diagram to solve musical problems.

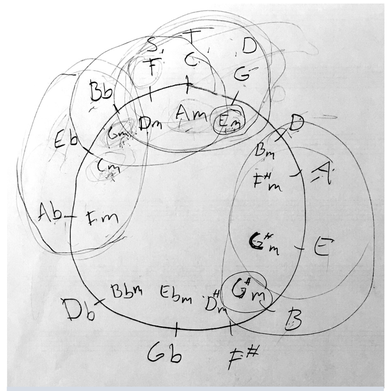

Figure 1: CoF made by a student and used in transposing exercises. With circled "boxes" representing keys and functions marked out in the C-major "box".

Summary

Context: Music theory lessons in Swedish upper secondary school.

Questions: How is the Circle of Fifths (CoF) treated in lessons, deployed in problem-solving, and used in meaning-making?

Methods: Lesson-observations and qualitative interviews.

Findings: Logic of the CoF mostly implicit. Strategies for problem-solving and mnemonics can facilitate performance without understanding, but possibly also meaning making through application in musical practice.

References: Vygotsky, L. S. (2012). *Thought and Language*. (E. Hanfmann, G. Vakar, & A. Kozulin, Trans.). Cambridge: MIT Press.

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