

## A Cross Cultural Study of Jewish and Arab Listeners: Perception of Harmonic Sequences

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**Abstract :** Musical intervals are the building blocks of melody and harmony. Intervals differ in terms of their size, direction, or quality as consonants or dissonants. In Western music, perceptual dissonance is mostly associated with the sensation of beats or periodicity, whereas cognitive dissonance is associated with rules of harmony and voice leading. These two perceptions can be studied separately in musical cultures which include melodic with little or no harmonic structures. In the Arab musical system, there is a number of different quarter-tone intervals creating various combinations of consonant and dissonant intervals. While traditional Arab music includes only melody, today's Arab pop music includes harmonization of songs, often using typical Western harmonic sequences. Therefore, the Arab population in Israel presents an interesting case which enables us to examine the distinction between perceptual and cognitive dissonance. In the current study, we compared the responses of 34 Jewish Western listeners and 56 Arab listeners to two types of stimuli and their relationships: Harmonic sequences and isolated harmonic intervals (dyads). Harmonic sequences were presented in synthesized piano tones and represented five levels of Harmonic prototypicality (Tonic ending; Tonic ending with half flattened third; Deceptive cadence; Half cadence; and Dissonant unrelated ending) and were rated on 5-point scales of closure and surprise. Here we report only findings related to the harmonic sequences. One-way repeated measures ANOVA with one within subjects factor with five levels (Type of sequence) and one between-subjects factor (Musical background) indicates a main effect of Type of sequence for surprise ratings  $F(4, 85) = 51$   $p < .001$ , and for closure ratings  $F(4, 78) = 9.54$   $p < .001$ , no main effect of Background on either surprise or closure ratings, and a marginally significant Type X Background interaction for surprise  $F(4, 352) = 6.05$   $p = .069$  and closure ratings  $F(4, 324) = 3.89$   $p < .01$ . Planned comparisons show that the interaction of Type of sequence X Background center around surprise and closure ratings of the regular versus the half-flattened third tonic and the deceptive versus the half cadence. The half-flattened third tonic is rated as less surprising and as demanding less continuation than the regular tonic by the Arab listeners as compared to the Western listeners. In addition, the half cadence is rated as more surprising but demanding less continuation than the deceptive cadence in the Arab listeners as compared to the Western listeners. Together, our results suggest that despite the vast exposure of Arab listeners to Western harmony, sensitivity to harmonic rules seems to be partial with preference to oriental sonorities such as half flattened third. In addition, the percept of directionality which demands sensitivity to the level on which closure is obtained and which is strongly entrenched in Western harmony, may not be fully integrated into the Arab listeners' mental harmonic scheme. Results will be discussed in terms of broad differences between Western and Eastern aesthetic ideals.

**Keywords :** harmony, cross cultural, Arab music, closure

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