

Schematic and veridical information in the detection of wrong notes in melodies

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Both schematic and veridical knowledge must be involved in detecting wrong notes in familiar melodies. Dowling (1976) proposed that veridical knowledge of melodic contour is combined with schematic knowledge of the tonal scale (tonal hierarchy) in forming a memory representation which can serve in recognition or recall. Previous studies found that deviations from the scale are recognized quickly and accurately as wrong notes. Here we varied familiarity of the melodies, varying the accessibility of veridical information, whereas schematic information (the scale) remained constant. We presented listeners with 8 highly familiar melodies (the most familiar of a set of 32 that were rated familiar), 24 moderately familiar melodies (that remained from the 32), and 32 completely unfamiliar melodies, all European folksongs. Listeners were musically untrained, minimally trained (1-4 yr music lessons), or moderately trained (>5 yr), and served in one of two groups: One group heard highly and moderately familiar melodies, and the other heard the unfamiliar. Each session had 64 trials, in which each melody appeared twice, with different wrong notes. The wrong notes were either 1 or 2 ST from the original pitch, and in-key or not. We measured the proportion of correct detections and response times. More experienced listeners detected wrong notes better in the familiar melodies, and their responses were faster. Out-of-key wrong notes were detected faster and more accurately, as were alterations moved 2 ST, and out-of-key notes at 2 ST were detected fastest and most accurately of all, with the opposite effect for in-key notes 1 ST from the target. That result was even more pronounced with highly familiar melodies. Detection was much harder with unfamiliar melodies, where veridical information was eliminated. But there key membership determined speed and accuracy, and listeners were again particularly successful with out-of-key notes 2 ST from targets.