

# Assignment 5

BMus/BSc in Music, Part Two Module: Music Perception and Cognition  
Department of Music, City University, London

Tuesday, 3 June 2003.

NAME: \_\_\_\_\_

**QUESTIONS** Study each of the following 21 statements and indicate for each one whether it is true or false by placing a tick in the appropriate box.

	<i>Statement</i>	<b>T</b>	<b>F</b>
1	In a probe-tone study, a listener first hears a standard pattern called the 'context' and then hears a comparison (usually a single tone) called the 'probe-tone'. The listener then has to rate, usually on a scale of 1 to 7, how well the probe-tone fits with the context (or sometimes how well the probe-tone follows the context).		
2	The first two experiments to use the probe-tone method were those described by Krumhansl and Kessler (1982).		
3	The results of the experiments of Krumhansl and Shepard (1979) indicated that subjects with the most musical training were more influenced by the size of the pitch interval between the probe-tone and the last tone of the context than those subjects who had received the least amount of musical training.		
4	In the experiments of Krumhansl and Shepard (1979), the subjects with the least amount of musical training rated the scale tones significantly higher than the non-scale tones.		
5	Krumhansl and Kessler (1982) used various different types of key-defining contexts to test the hypothesis that any context which strongly defines a particular key will give rise to similar probe-tone ratings for that key.		
6	Krumhansl and Kessler (1982) used circular tones in their experiment in an attempt to eliminate the effect of pitch height on the subjects' responses.		
7	Krumhansl and Kessler (1982) found that the same shape of rating profile was obtained for all major and minor keys.		
8	The degree of similarity between two sets of data can be measured by computing the correlation between them.		

	<i>Statement</i>	<b>T</b>	<b>F</b>
9	Krumhansl and Kessler (1982) proposed that the perceived relatedness of two keys could be predicted by measuring the correlation between their probe-tone rating profiles.		
10	The tonal consonance of a given pair of tones sounding simultaneously is determined by how stable they are interpreted to be in a particular musical style.		
11	Krumhansl (1990) found that there was a significant correlation between the minor key probe-tone rating profile obtained by Krumhansl and Kessler (1982) and the measure of tonal consonance proposed by Kameoka and Kuriyagawa (1969).		
12	Krumhansl (1990) found that there was a very high correlation between the major key profile obtained by Krumhansl and Kessler (1982) and the frequency distribution of tones in major-key tonal works measured by Youngblood (1958) and Knopoff and Hutchinson (1983).		
13	The first step in Krumhansl and Shepard's (1979) key-finding algorithm is to count up for each different pitch class the sum of the durations of tones with that pitch class in the passage to be analysed.		
14	Krumhansl (1990, Chapter 5) found that when a listener hears a single melodic interval after a key-defining context and is asked to rate how well the second tone in the interval follows the first tone, higher ratings are generally given to those intervals in which the second tone has a high value in the tonal hierarchy (Krumhansl and Kessler, 1982) of the key of the context.		
15	Krumhansl (1990, p. 177) found that when a listener hears an isolated triad after a context consisting of a rising or falling major or minor scale and is asked to rate how well the triad fits with the context, the ratings for major triads are generally higher than those for minor triads which are in turn generally higher than those for diminished triads.		
16	The results of an experiment described by Krumhansl, Bharucha, and Kessler (1982b) indicate that chords in the same key are heard to be more closely related than chords in different keys.		
17	The results of an experiment described by Krumhansl, Bharucha, and Kessler (1982b) suggest that if one hears a key-defining context followed by two chords, then the perceived relatedness between the two chords depends in a regular way on the key of the context.		
18	The results of an experiment described by Bharucha and Krumhansl (1983) suggest that chords in different keys are perceived to be less related than chords within the same key even in the absence of any key-defining context.		
19	In the experiments of Bharucha and Krumhansl (1983) and Krumhansl, Bharucha, and Castellano (1982a) to investigate the effect of the key of the context on the perceived relatedness between chords, each key-defining context consisted of a II-V-I cadence.		

	<i>Statement</i>	<b>T</b>	<b>F</b>
20	The results of the experiments of Bharucha and Krumhansl (1983) and Krumhansl, Bharucha, and Castellano (1982a) suggest that two chords in the same key are perceived to be less closely related when preceded by a context whose key is close on the circle of fifths to that of the chords, than when the context key is distant on the circle of fifths from that of the two chords.		
21	The <i>contextual distance principle</i> (Krumhansl, 1990, p. 196) states that the average perceptual distance between any two elements varies inversely with the extent that the elements are stable or play significant functions in the context key.		

**DEADLINE** The completed assignment must be handed in to the Music Office by 5:00pm on Tuesday 10 June 2003.

## References

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- Krumhansl, C. L. (1990). *Cognitive Foundations of Musical Pitch*, volume 17 of *Oxford Psychology Series*. Oxford University Press, New York and Oxford.
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- Youngblood, J. E. (1958). Style as information. *Journal of Music Theory*, **2**, 24–35.