MPATC-GE 2042: Psychology of Music

Melody
Annotated bibliography assignment reminder: Step 1

- Due October 13 at 11:55pm
- As a first step, each student, on his/her own, is required to come up with a minimum of 10 references with the following criteria:
  - At least 8 of the references must be peer-reviewed journal articles.
  - The other references can either be additional journal articles or other reference types such as book chapters or books. The books must be fairly specific to your topic area and not just general references (too general would be our Thompson textbook).
  - No references may be magazine/press articles or non-academic-journal websites such as Wikipedia.
Annotated bibliography assignment reminder: Step 2

- Your group will then meet and agree on a final set of 20 references with the following requirements:
  - At least 15 of the references must be peer-reviewed journal articles.
  - The other references can either be additional journal articles or other reference types such as book chapters or books. The books must be fairly specific to your topic area and not just general references (too general would be our Thompson textbook).
  - No references may be magazine/press articles or non-academic-journal websites such as Wikipedia.
  - The 20 references described above are the minimum, but you may have as many additional references as you like.
  - At least 10 references on your list must be relatively recent (2006 or later).

- Include your project idea at the top of your bibliography.

- All references must be in APA format.
Annotated bibliography assignment reminder:  
Step 3

• The final 20 references will then be distributed evenly among group members for annotation purposes: each student will write a paragraph-long summary/description. These “annotations” must include the following:
  – A very concise summary of the topic the paper addresses.
  – A very concise description of the main contributions/conclusions of the paper.
  – Why/how the paper is relevant to your research topic (e.g., why specifically is it useful?)

• Final requirements:
  – For this assignment, you must group the references by student. For the final report, references will be listed in alphabetical order by author last name.
  – At the top of your bibliography, include a brief description of your topic area and working research question.
Schmuckler: Tonality and contour in melodic processing

• Talks a lot about two “basic organizational structures” of melody:
  – Contour
  – Tonality

• Dowling (1978) is a classic (it’s the optional reading for this week); it addresses these two elements.

• Models of tonality and contour
  – Tonality: melodic key-finding: structural and distributional views
  – Contour: local (individual intervals) and global (up/down directions within contour)
Tonality and contour in melodic perception

• Perceptual organization of melodic form
  – Contour: stream segregation, pitch proximity
  – Tonality: some studies mentioned on polytonality and effect of tonality on perception of interleaved melodies

• Melodic memory
  – Contour is critical for melodic memory/similarity; however becomes less important as length of melody increases.
  – Contour is crucial but doesn’t function independently of tonality and other features.
Article discussion: Schulkind and Davis (2012)

- Discussion leaders: Ned Dana and Sarah Irvin

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Figure 1. Examples of the fixed, forward, random (Experiments 1 and 2), and backward (Experiment 2) conditions using the melody for “Happy Birthday to You.”

Gating paradigm from Schulkind (2004)
Schulkind and Davis (2012) diligently isolate melody from other components of music (e.g., controlling timbre by playing melody exclusively on a piano), in order to test the validity of the primacy and similarity hypotheses of the Cohort Model, but then implicate context, timbre, and genre as areas of future research in their discussion. Wouldn’t other aspects of music as a human experience, such as personal/historical context and emotional associations to how a melody is embedded in one’s identity also be relevant? And since music listening is an integrated experience of inextricably linked musical components, are such findings where one component is studied in isolation truly trustworthy? (John)
Reading questions: Methodology

• The study leaves an open question of whether melody identification is "all-or-none" or gradual. Instead of holding onto the idea that melody identification is motive-based, what kind of experiment and methodology could be conducted to answer this question? (Taihua)

• In this study, it is found that the data from Experiment 1 were not consistent with the similarity hypothesis, and it is argued that the deleted notes in the melody, altered the way people typically listen to melodies. So, what would happen if they had used random notes instead of silence that are equal to the deleted notes in terms of note length? (Mert)

• Considering that it’s not true for all cases, composers usually write/use melodies for specific parts of the song. Besides writing it, it’s tricky to decide where to use melody. Accordingly, some melodies are more memorable than others. In other words, it’s not only a composition issue but also an arrangement issue. For this reason, why didn’t authors consider presenting transition parts in their experiment, in which the song leads to its main melody? (Mert)
Reading questions: Methodology

• The findings (Schulkind & Davis, 2012) on the primacy hypothesis of melody identification seem trustworthy for what they purport, yet since a melody can be harmonized in a myriad of ways, isn’t it possible that harmony could serve as a wild card variable in this or other experiments if melody were not isolated from it? (John)

• Hébert and Peretz (1997) argued that the temporal structure of popular music is more stereotyped than pitch structure. But what about the setting of the song: if the song would be played by other instruments, would it be equally recognizable? (Federico)
Reading questions: Methodology

• What are the similarities or common principles between melody recognition and word recognition, that makes Dalla Bella et al. decide to draw inspiration from the cohort model of spoken word identification in order to construct their melody identification model? (Alison)

• Had the participants heard the example twice rather than once would the likelihood of a correct answer increased? Would this be due to an increased familiarity with the locations of the omissions, or due to the removal of the element of surprise? (Jacob)
Reading questions: Stimuli

- Would the same results occur if all rhythms were taken out, or is rhythm explicit to guessing the melody and interpreting in real time where the melodies are going? Would the same results occur with more minor key music than major key tending music. (Blake)

- Schulkind and Davis note that experimental work has been done using atonal fragments on melody recognition/recall. I wonder if employing atonal "melodies" (esp. something like Webern, that has no discernible pattern & traverses range and timbre quickly) in the same experiments as outlined here, would yield similar results. That is, in experiment 1, how high a difference score is tolerable before a subject cannot recall the melody, if the original, unaltered melody taught to the subject does not have a 'traditional' melodic contour as employed here (i.e. has a very high difference score). In experiment 2, would starting this melody in progressively later places produce higher rates of confusion errors, due to its construction, in comparison with the results of the study? (Kyle)
Reading questions: Stimuli

• One comment made in the general discussion was about Twinkle, Twinkle Little Star and the Alphabet Song—how many people are surprised that they use the same melody. Adding a 'tune' to a string of words is a useful tool for memorizing something, like a phone number. Does this process work the other way? Can adding words—or even solfège syllables—aid in the memorization of a melody? Would adding / subtracting words from a common melody affect confusion errors—either non-responses or confusion with another song? (Kyle)
I think that familiarity plays a large role in this experiment and that the authors acknowledgement of a stimuli activating other songs by the same artist or other songs based on a pre-existing piece is well mentioned. In addition to their question, wouldn't it also be plausible that any incorrect identification could be attributed to the subject being more familiar with a tune that is similar to the stimuli, and therefore choosing that tune over the correct one? (Jason R.)

Two subjects incorrectly identified ‘Santa Claus is Coming to Town’ as ‘When the Saints Go Marching In’ because they are based on a similar contour. Thirty nine errors (53.4%) could not be classified. If this suggests that representations of contour may be used to organize melodies in long-term memory, why didn't it happen more than twice? (Alex)
Reading questions: Results

• While the paper mentions that many confusion errors were drawn from the same genre as the target and they share similar rhythmic properties, would there might be other musical factors within the same genre other than rhythms or meters, such as common harmonic progressions or melodic styles, that could also contribute to the confusion errors? (Alison)

• Why wasn't data included on percentages of recognition for each example song in each experiment? Frosty the Snowman is an entirely diatonic and mostly stepwise melody, I find it difficult to believe that musical complexity or distinctiveness do not affect levels of recognition, for example I would think a more disjunct melody with lots of leaps would be significantly more difficult to recognize with a note missing. I also imagine a melody with chromaticism would be much easier to recognize with the nondiatonic tones present than in their absence. The authors handle the variables of missing notes well, I'd be interested to see them address the variables of the actual music chosen. (Sean)
Reading questions: Future work

• In the end of the paper, the author pointed out that we still need to conduct experiment to know whether music identification is a gradual or all-or-none process. However, isn't it possible that both of them are correct? What I mean by saying this is that the whole melody might be processed by human brain gradually, but for us as the supervisor of this system, we received the message of recognizing a certain melody only in an instant. So maybe both processes happen in the same time in our mind? (Natalie)
Reading questions: Language parallel

• When the author used the example of finding a word in the dictionary to explain the way our brains recognize melody, I immediately think of the connection between human language and music which we have been discussing through the semester. So I was thinking maybe the results of this experiment can also be used to support the theory that there is a close relationship between the way human brain processes speech and music? (Natalie)
Reading questions: Harmony

• The first experiment came to the conclusion that the location of the deleted notes within the unfolding melody affected identification performance and confidence and the 4-8-12 pattern yielded better performance than the other three patterns. Does the chord help with this? The experiment is using a B flat major chord, and the 4-8-12 is missing most of the core chord notes (F and Bb), and the rest of the patterns were only missing one of the core chord notes. (Jiao)
Reading questions: Melodic features

• To what extent can we generalize about melodies? It does seem possible, but what if there are types/categories of melodies, groups which may not be entirely distinct but which could nonetheless be more reliably generalized about – those with strong, more memorable or recognizable beginnings, vs. those where a feature from the middle is more important, or a shift to a different dominant rhythm (as in so many Bach subjects); or a melody triggered more by timbre or contour than by specific pitches or rhythms? Are S&D’s experiments hindered by their lumping all varieties of “melody” into one? (Michael)
An explicitness factor for decoding musical parameters?

To the novice listener (and to me when I was an amateur musician), a piece of classical music in a given style would most likely sound very similar to another one. I recall using rhythmic cues to remember individual pieces of classical music when they had complex melodies, and melodic cues when the rhythm was too complex, and timbral cues when the former factors were undecipherable. Pages 16-17 seem to suggest that there is a hierarchy among the factors — could there be a dynamic, explicitness-based system at play in our musical brains, where the factor that stands out the most (perhaps based on loudness and simplicity) get utilised the most to remember a particular piece of music? (Chi)