

# Modeling Melodic Dictation

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# Chapter 1

## Prerequisites

This is a *sample* book written in **Markdown**. You can use anything that Pandoc's Markdown supports, e.g., a math equation  $a^2 + b^2 = c^2$ .

My first reference (Margulis, 2005)

The **bookdown** package can be installed from CRAN or Github:

```
install.packages("bookdown")  
# or the development version  
# devtools::install_github("rstudio/bookdown")
```

Remember each Rmd file contains one and only one chapter, and a chapter is defined by the first-level heading #.

To compile this example to PDF, you need XeLaTeX. You are recommended to install TinyTeX (which includes XeLaTeX): <https://yihui.name/tinytex/>.



## Chapter 2

# Theoretical Background and Rationale

### 2.1 Significance of the Study

All students pursuing a Bachelor's degree in Music from universities accredited by the National Association of Schools of Music must learn to take melodic dictation (NAS, 2018) VIII.6.B.2.A. This skill is a demanding process that requires students to listen to a melody, retain it in memory, and then use their knowledge of Western musical notation in order to recreate the mental image of the melody on paper in a limited time frame. Some researchers have estimated that XX amount of processes are needed to successfully execute this task FIND CITATION.

### 2.2 Order of Chapter 1

- Hook on why this is important
- What is melodic dictation?
  - Process (reasons of why factors)
  - Who has talked about it before?
  - Why is it important – training ear and transfer
- Most of the people who are talking about this are pedagogical, really it's perceptual
- Here is huge list of literature of things that might contribute
  - Pedagogical factors
  - Cognitive Factors
  - Musical Factors
  - All of these are moving parts, need better tools to describe
- While this is the narrative, does not conform to updated view of polymorphism of musicianship

### 2.3 Order of Chapter 2

- Most of this literature comes from pedagogy
- All quotes about people should be able to do this
- Long history of Aural Skills
  - Older people
  - Current Methods

- Their goals
- Their assumptions
- People are not good at this
  - Wennerstronm (1989) said people at IU are not good at aural skills and sight singing p.163 (k7)
  - Julliard (1953,p. 48) incoming students have untrained ear (k7)
- nice quote from chittum 1967 “the da is past when teachers can say, you either have it or you don’t” (p.73)
- Start of a big Journey back then, even more now (almost 2 decades since Karpinski, 2000)

### 2.3.1 Theoretical Background

Lots of older studies looking at this listed on page 2 of Taylor and Pembroke 1983 (List here)

#### 2.3.1.1 Computational Musicology

#### 2.3.1.2 Music Psychology and Memory for Melody

### 2.3.2 Rationale

#### 2.3.2.1 Computational Musicology

#### 2.3.2.2 Music Psychology

### 2.3.3 Factors

This section will list factors that are believed to be important to modeling melodic dictation. Need to have both individual and musical parameters. Ends with polymorphic view of musicianship. + Nichols, Wolner, Halpern 2018 + Niels paper on Jazz similarity + My paper on Wagner

+++++ Pitch in Karpinki

- Pitch Matching (Work being done with Seattle, Pfordresher)
- Pitch Memory (See Snyder)
- Pitch Collection and Chunking
- Infereing Tonic
- Melodic Contour
- Scale Degrees
- Identification of Intervals
- Identifcaiton of Scale Types
- Solimization Systems
- AP

+++++ Melodic Dictation

Kraft 1999 – First part of book is for melodic dictation Benward and Lolosick 1996a – Melodic Dictation

Karpinski 1990 Has its own model for melodic perception??

Page 66 of K – Relevant Melodic Contour Information page 68 of K – Deutsch – Familiar systems are better (now we have IDyOM) Dowling and Harwood 1986 124-44 Melodic expectancy (probably better for Pearce) READ Sloboda and Parker 1985

THURSDAY FOLLOW UP! Follow Ups of Note Max + Tallarico 1974 + Long 1977 + Pembroke 1983

7-11 Notes? Marple ND reports that most things land in 7 +/-2, But not mention of IC! Found that if you make it rhythmic, goes up to 6-10, rhythm helps, but maybe it's just shorter time



Potter 1980 – most people chunk (obvs question of segmentation) Deutsch 1980 rhtym alines with pich, people do better than non-hierarchy Oura 1991 – MODEL OF HOW MANY PITCHES PEOPLE REMEMBER, use for corpus question on pattern matching

Hofsetter 1981 – people do better in bottom 4 time than 8 (again maybe confounded by IC)

Page 98 in Karpinski has lenght and number of playings,

Effect of tempo in Unks, Bowers, and Eagle 1993

figure 3.1 is Karpinski method to understand dictation process

+++++ Define the rationale and significance for this study talk about what the processes are that go into this What are the implicit transfer claims of this? + discussed in chapter 2 (history and rationale, Karpinski) + transfer literature also dicussed in chapter 2 Is there literature specifically on this? Yes, but scant.

what contributes to this whole process?

Note that there are two fields, both of which's literature can help out.

===== 63 words at start



## Chapter 3

# History of Aural Skills

### 3.1 First Establish Others think this is Important

#### 3.1.1 Historical Evidence

#### 3.1.2 Current Evidence

### 3.2 Solimization

#### 3.2.1 What is Solimization

#### 3.2.2 Brief History of it

### 3.3 Current State of Aural Skills

- Guy that just wrote that dissertation on it in England

History of Aural Skills a lot from other sources + Karpinski (Schumann, Smith, Benward and Car, Benward and Kolosick, Butler 1997) + Wolf and Colleagues + Best- thinking ‘in’ music 1992 + Serafine 1988 thinking in or with sound / + Elliott 1996 thinking about music without ‘understanding’ === These all really just have to do with mental representation?

Karpinski – “Music listeners who understand what they hear are thinking in music” <- claim page 4 + could imagine a thought experiment where understanding implicit and explicit knowledge of this

Karpinski notes that (Butler and Lochstampfer, 1993) no link between pedagogy and music cognition.

### 3.4 Old Farts To Talk About

- Guido of Arezzo
- Gioseffo Zarlino
- Franchinus Gaffurius
- C.P.E. Bach

- Jean-Philippe Rameau
- Arnold Schoenberg
- Heinrich Schenker
- Adriano Banchieri <– first to fix guido’s hexachord
- Hubert Walerant (via Calvisius)
- Timothy Johnson’s Article on solimization
- Gregory Barnett - cambridge guide, 17th Century Organization
- Lorenzo Penna
- Compare and contrast goals in terms of pedagogy and teaching.

### 3.5 Current State

- Books and what not.

## Chapter 4

# Individual Differences

### 4.1 Cognitive Aparatus

### 4.2 Training Effects

### 4.3 Transfere Literature

### 4.4 Memory for Melodies Literature

### 4.5 WMC

- Nichols, Wollner Halpern, 2018

### 4.6 Gf



## Chapter 5

# Musical Parameters

### 5.1 Inspiration from Computational Linguistics

### 5.2 Feature Extraction in Music

#### 5.2.1 Symbolic Approaches (Static)

#### 5.2.2 Symbolic Approaches (Dynamic)

#### 5.2.3 Behavioral Results

### 5.3 Point is that these features can stand in for intuition





## Chapter 6

# Corpus

6.1 Why need new data

6.2 History of Corpus Studies

6.3 Current State in Music

6.4 Limitations

6.5 Boring Corpus Stuff

6.5.1 Encoding Process

6.5.2 Sampling Criteria

6.5.3 Situation of Corpus Methods

6.6 Descriptives of the Corpus compared to Essen/Dutch/Whatever



## Chapter 7

# Final Words

We have finished a nice book.

You can label chapter and section titles using `{#label}` after them, e.g., we can reference Chapter 2. If you do not manually label them, there will be automatic labels anyway, e.g., Chapter ??.

Figures and tables with captions will be placed in `figure` and `table` environments, respectively.

```
par(mar = c(4, 4, .1, .1))
plot(pressure, type = 'b', pch = 19)
```

Reference a figure by its code chunk label with the `fig:` prefix, e.g., see Figure 7.1. Similarly, you can reference tables generated from `knitr::kable()`, e.g., see Table 7.1.

```
knitr::kable(
  head(iris, 20), caption = 'Here is a nice table!',
  booktabs = TRUE
)
```

You can write citations, too. For example, we are using the **bookdown** package (Xie, 2018) in this sample book, which was built on top of R Markdown and **knitr** (?).

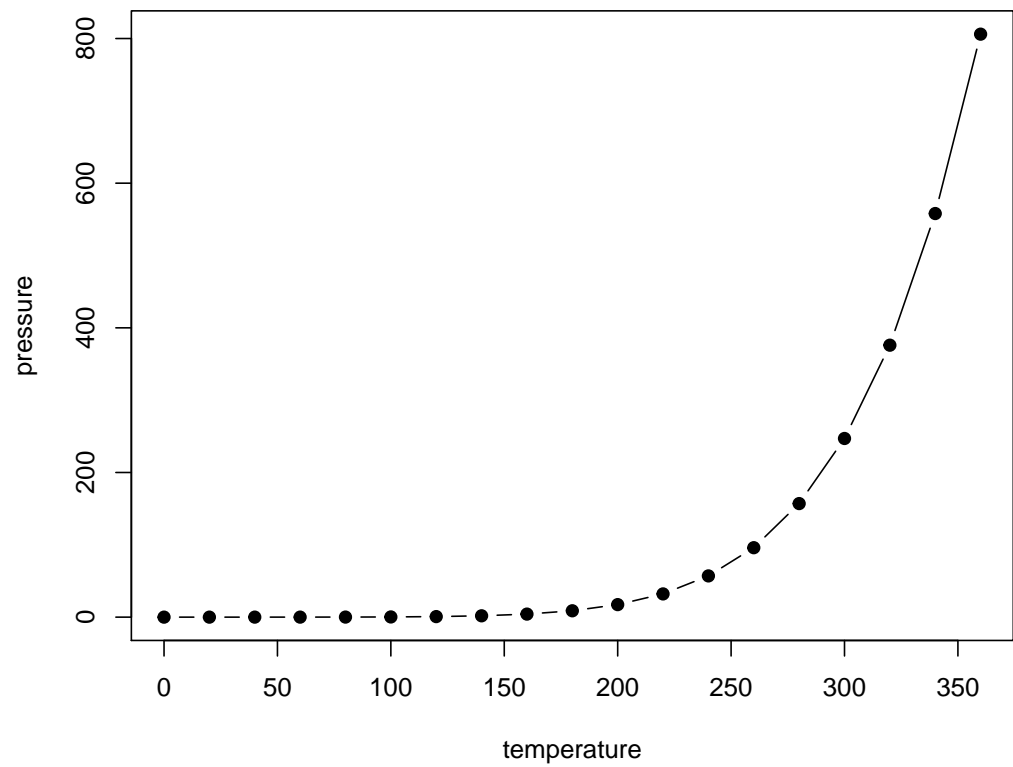


Figure 7.1: Here is a nice figure!

Table 7.1: Here is a nice table!

Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
5.1	3.5	1.4	0.2	setosa
4.9	3.0	1.4	0.2	setosa
4.7	3.2	1.3	0.2	setosa
4.6	3.1	1.5	0.2	setosa
5.0	3.6	1.4	0.2	setosa
5.4	3.9	1.7	0.4	setosa
4.6	3.4	1.4	0.3	setosa
5.0	3.4	1.5	0.2	setosa
4.4	2.9	1.4	0.2	setosa
4.9	3.1	1.5	0.1	setosa
5.4	3.7	1.5	0.2	setosa
4.8	3.4	1.6	0.2	setosa
4.8	3.0	1.4	0.1	setosa
4.3	3.0	1.1	0.1	setosa
5.8	4.0	1.2	0.2	setosa
5.7	4.4	1.5	0.4	setosa
5.4	3.9	1.3	0.4	setosa
5.1	3.5	1.4	0.3	setosa
5.7	3.8	1.7	0.3	setosa
5.1	3.8	1.5	0.3	setosa

# Chapter 8

## Experiments

### 8.1 Rationale for Experiment

### 8.2 Selection of Melodies

- Tonalness, Countour, Number of Pitches - Long 1997 Tonalness good predictor
- Tonalness better than atonal (Frances 1958) Zenatti 1969 – from Long 1997
- Taylor 1977 – IC predicts when contour and lenght constant
- Long 1997 – IC affects information

### 8.3 Experiment I and II

### 8.4 Experiment III?

### 8.5 Limitations

#### 8.5.1 How to Score

#### 8.5.2 Reasons for making everything open source

### 8.6 Summaries

#### 8.6.1 Applications to Pedagoges

#### 8.6.2 Conceptual Frameworks

### 8.7 Conclusions

#### 8.7.1 What can we really expect of undergrads?



## Chapter 9

# Reference Log

### 9.1 To Incorporate

- (Margulis, 2005) – Margulis Model
- (Nichols et al., 2018) – Specialty jazz background helps in tasks, WMC
- (NAS, 2018) – Fix intext
- (Schumann and Klauser, 1860) – Quote about why people should do ear training
- (Smith, 1934) – Quote from K2001 about why people should do ear training
- (Long, 1977) – Musical Characteristics predict memory
- (Taylor and Pembroke, 1983) – Great citation that lots of things change memory, even structural!
- (Tallarico, 1974) – Long boring talk on STM, LTM
- (Oura, 1991) – Awful experimental design that says people use structural tones
- (Buonviri, 2014) – Call for experimental, suggestions as to what factors might contribute, use of deductive reasoning, qualitative
- (Buonviri, 2015b) – People need to focus right away, not establish, distractors
- (Buonviri, 2015a) – Showing people visual music does not help much.
- (Buonviri, 2017) – Listening helps with other things, no best strategy in terms of writing
- (Buonviri and Paney, 2015) – Literature to say people are bad at teaching melodic dictation and we don't know a lot about it, also interesting stuff about what solfege systems people use
- (Pembroke, 24) – Great study that needs longer read from me that lays out what controlled music cognition experiment might look like, also good stuff about features





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