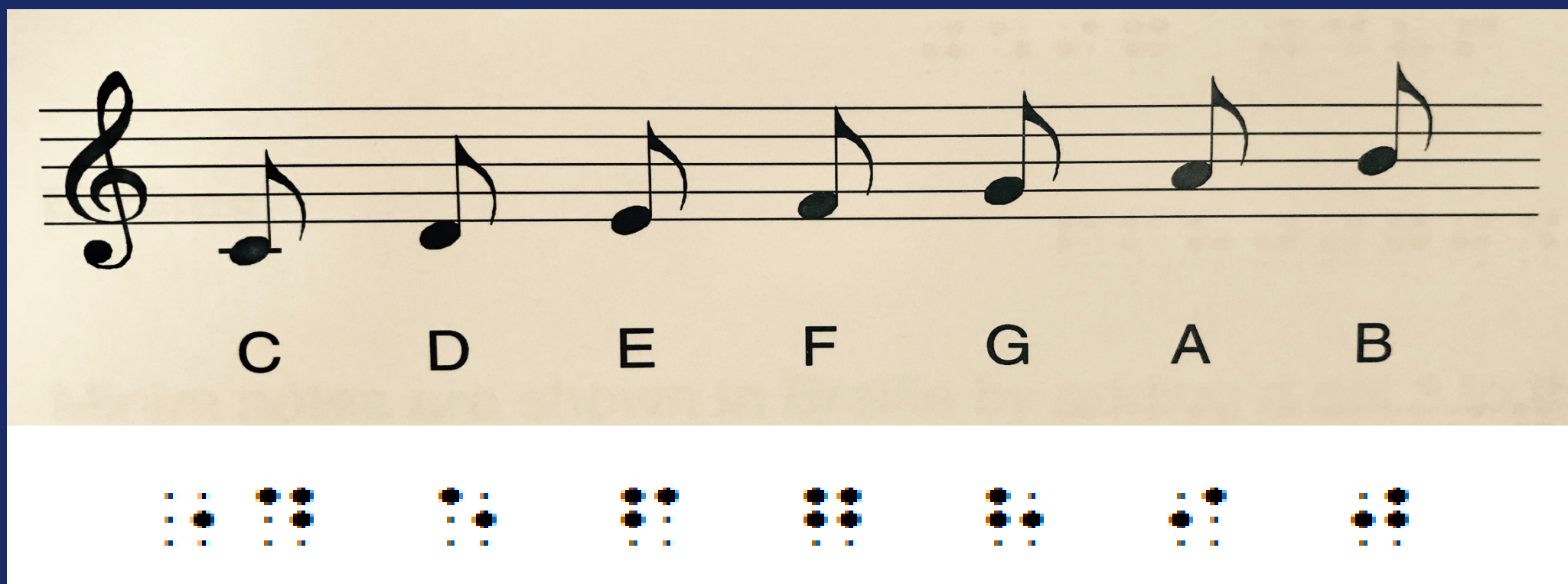


# SPEVI Conference 2020:

Technology and Braille Music Transcription.  
What are the possibilities?



The image displays a musical staff with a treble clef. Seven quaver notes are written on the staff, ascending from middle C to B. Below each note is its corresponding Braille music notation, which consists of a series of dots in a 3x2 grid.

Note	Braille Music
C	⠠⠠⠠⠠⠠⠠
D	⠠⠠⠠⠠⠠⠠
E	⠠⠠⠠⠠⠠⠠
F	⠠⠠⠠⠠⠠⠠
G	⠠⠠⠠⠠⠠⠠
A	⠠⠠⠠⠠⠠⠠
B	⠠⠠⠠⠠⠠⠠

A picture shows a line of print music in the treble clef notes ascending from middle C in quavers. The corresponding Braille Music is shown underneath.

# Presentation Outline



1. A brief summary of the origins of the Braille Music Code & the developments that have occurred in transcription processes
2. Using translation software from a transcriber's point of view
3. What software is being used by teachers and students?
4. How to cope as an end user
5. Globally what is happening?
6. Vision Australia services available and the NDIS
7. Closing comments
8. Links and References

# The Origins of Braille Music and short history of transcription



A picture of Louis Braille on a postage stamp from India is pictured. “Louis Braille” has been embossed on the stamp in Braille. A pair of hands are shown to indicate reading his name.

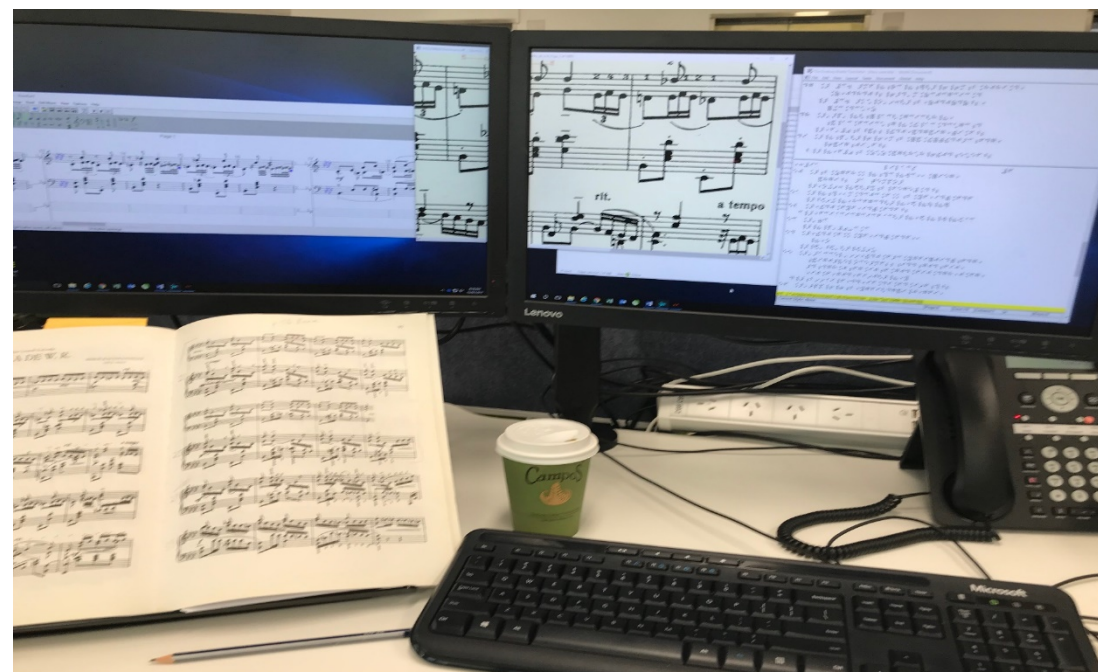
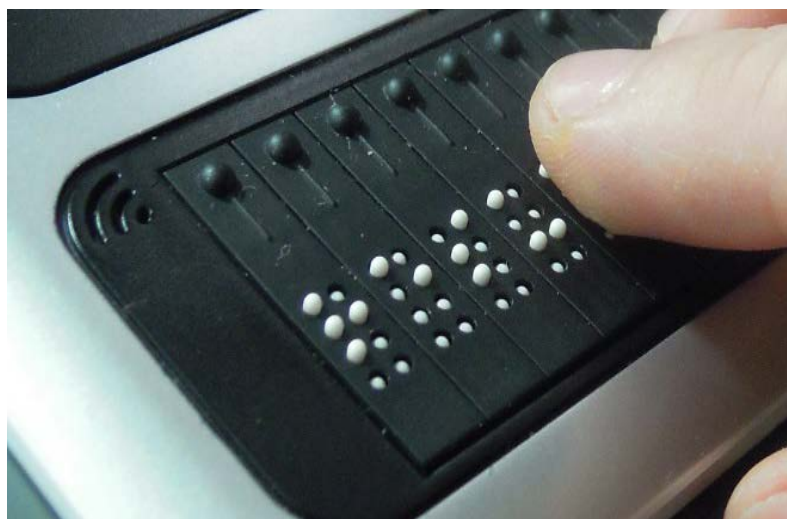
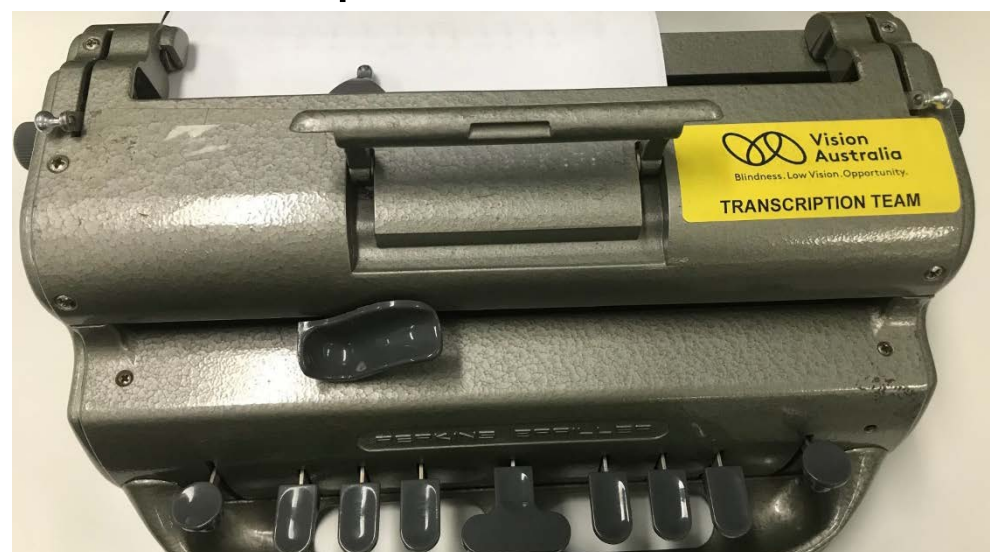
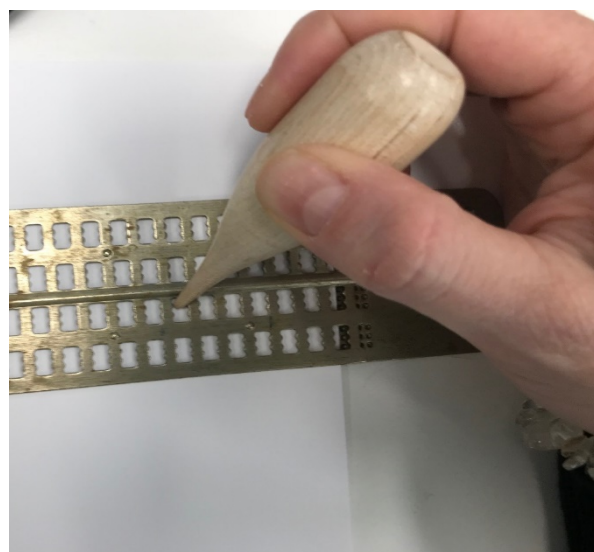
- Louis Braille invented the Braille Music code in the mid 1820's. This is a separate code to the literary Braille Code
- Instead of using staves for notating pitches and values, the Braille music code uses octave signs, specific dots to denote values and note names based on the French Solfege system Do-Re-Mi etc.



# Origins of Braille Music cont.

**Tools used for transcribing Braille Music include: Handframes and stylus tools, Perkins Brailers, Refreshable Braille Displays and Computers.**

Pictures of each of these tools are pictured.



# Dictating Music

- An audio recorded example of a simple music dictation will be played.
- Dictating music is useful in particular for these purposes:
  1. Transcribing print music to braille music when the transcriber is vision impaired or blind. Proofreading braille music by a blind transcriber with a sighted copy holder checking the print score.
  2. A student needing a short piece of theory homework for example to take home for completion.
  3. A blind musician singing in a choir or playing in an ensemble who needs the music for the following days' rehearsal and the music is handwritten!
  4. When there is insufficient time or no access to translation software to translate print music in time for a music event.

# Dictating Music – Video



**Video example of a simple music dictation**

# Using translation software



- Currently at Vision Australia we are using Photoscore for scanning PDF files to send to Sibelius to edit and GoodFeel for the final translation process.
- GoodFeel is a package of 3 programs:
  1. SharpEye music scanning and recognition software
  2. Lime music editor with Lime Aloud scripts for JAWS and
  3. GoodFeel Braille Music Translator
- For music XML files we use Sibelius and GoodFeel software.
- MusicXML is a standard open format for exchanging digital sheet music. It is designed for sharing sheet music files between applications.
- Software allows for easy extraction of parts and quick access to notes BUT not all vital information in the music comes across, or is inconsistent in doing so, such as omitting or providing incorrect phrasing, lyrics, and fingerings to name a few examples.

# MusicXML file example

A screen dump image of what a MusicXML file looks like is shown. In essence it very much resembles the backend of a website with tags and metadata except that the information is related to music.

```
<encoding-date>2018-11-19</encoding-date>
<encoder>Katie</encoder>
<software>Sibelius 7.1.3</software>
<software>Direct export, not from Dolet</software>
<encoding-description>Sibelius / MusicXML 3.0</encoding-
<supports type="yes" attribute="new-system" value="yes" ,
<supports type="yes" attribute="new-page" value="yes" ele
<supports type="yes" element="accidental"/>
<supports type="yes" element="beam"/>
<supports type="yes" element="stem"/>
</encoding>
</identification>
- <defaults>
  - <scaling>
    <millimeters>210</millimeters>
    <tenths>1680</tenths>
  </scaling>
  - <page-layout>
    <page-height>2375</page-height>
    <page-width>1680</page-width>
    - <page-margins type="both">
      <left-margin>80</left-margin>
      <right-margin>80</right-margin>
      <top-margin>80</top-margin>
      <bottom-margin>80</bottom-margin>
    </page-margins>
  </page-layout>
  - <system-layout>
    - <system-margins>
      <left-margin>97</left-margin>
      <right-margin>0</right-margin>
    </system-margins>
    <system-distance>92</system-distance>
  </system-layout>
  - <appearance>
    <line-width type="stem">0.9375</line-width>
    <line-width type="beam">5</line-width>
    <line-width type="staff">0.9375</line-width>
    <line-width type="light barline">1.5625</line-width>
    <line-width type="heavy barline">5</line-width>
    <line-width type="leger">1.5625</line-width>
    <line-width type="ending">1.5625</line-width>
```



# Transcribing Complex Music



- An audio example will be played of the following piece of music: Moments Musicaux Op.16 - No.6 in C major – Maestoso by Sergei Rachmaninoff
- Some of the issues posed in transcribing this is firstly, the LARGE amount of very fast notes – time consuming if this had to be dictated but also accuracy required, the fingerings and expression markings to be entered manually.

# Challenges: Multilayered Full Scores

## This Is Me: from The Greatest Showman film

A colourful illustration from the circus of The Greatest Showman is shown.



A short audio excerpt from the score will be played.

### Challenges posed:

- 2 or 3 different lyrics being sung across different voice parts
- Laying out the braille music as a score bar over bar is complex
- This must be done manually as it can't as yet be done using any of the current translation software available in an accurate way that is understandable to the end user.

# Neume Notation

## Challenges:

- Having a good understanding of how to read and decipher the print neume notation system by a sighted musician.
- No existing international Braille Music code to notate the chant symbols, making use of transcriber notes or nationally accepted norms.
- This requires manual entry of Braille or entering into print music software such as Sibelius prior to translating.

## Example of Chant by Hildegard Von Bingen (audio will be played)

A picture of neume notation has been shown.



# What software are teachers and students using for translation?



- BME2: Braille Music Editor 2 is most commonly used for direct translation in schools
- It allows students to compose their music in Braille Music and give an immediate translation for the sighted teacher to view as a print music score. Promotes independence and social inclusion to be able to share their music with their peers.
- It allows import and export of MusicXML files
- We don't use it at Vision Australia because it isn't compatible with Duxbury software that we use in the final stage of formatting and creating professional layouts for clients with their specific preferences in mind



# How to cope as an end user?



## Challenge

1. Being handed music last minute for rehearsal yesterday!
2. Being given handwritten or score in pdf format.
3. Not being able to add rehearsal markings in score when using embossed copy.
4. Not enough time to transcribe and keep up own music practice.

# How to cope as an end user?



## Way Forward

1. Be proactive to encourage conductors or music director to meet your needs and timeframes.
2. Ask for XML files and learn to use translation software available such as GoodFeel or BME2. Look at online libraries for alternative editions and XML files.
3. Record rehearsals or short notes on phone recorder
4. Use transcription services available such as Vision Australia or source your own typesetter for assistance.

# Globally – what is happening?



## **From the latest DAISY Braille Music Project Consortium:**

- (Established in 2017; the project is led by Arne Kyrkjebø from NLB in Norway, with Dr. Sarah Morley Wilkins as Project Manager and Consultant from the UK. Mr Haipeng Hu from China is assisting as a Technical Consultant.)

The main goal is to ensure that more music braille scores are available more easily to more blind musicians world-wide.

- This project is a cross-sector collaboration to identify, prioritise, and deliver both short-term and long-term technical improvements to secure the future of music braille production.

Four areas were defined as requiring improvement in order to be able to increase the amount of music braille produced:

1. input files need to be as good as they can be at the start
2. conversion and mark-up tools need to be accurate & reliable, for agencies and end-users
3. good access is needed to existing intermediary files
4. good teaching, learning and promotional materials are needed.



# Current Research and Updates



- A general mark up language guide was developed to create better quality xml files prior to processing in translation software
- Findings from the DAISY Braille Music Project presented to W3C (The World Wide Web Consortium is an international community where Member organizations, a full-time staff, and the public work together to develop Web standards.)
- Further development of the MNX file: MNX provides an overall framework for encoding works of music of many different kinds. To draw on the terms, concepts and vocabulary of MusicXML, but reworked to better support current encoding and programming best practices.
- Hodder software created in Germany is being funded to be further developed and updated to incorporate new functions allowing for more accurate and consistent translations.
- A new app for accessible music and a braille converter tool from Sao Mai Centre for the Blind in Vietnam has been developed. Links provided.

# Vision Australia Personal Support Service



- At Vision Australia we offer a service through our Government Funded Personal Support for clients when they become a library member allowing for 360 print pages per financial year to be transcribed for them of any material they wish be it a PDF file, a recipe, sticky labels, sheet music, a map or their handwritten family tree to give a few examples. We will convert to Braille, audio, large print or e-text. This service is FREE!!!!
- An additional 360 duplicated pages are available of previously transcribed material.
- Access this service by phoning Vision Australia and joining the library. It takes about 5 minutes to join, then get in touch with our transcription client service team who will assist with and process the request.

- For NDIS plans: It is now possible for clients to add items that will supplement their music production such as payment to a typesetter for gaining access to music or having a sighted support person attend a music rehearsal with you to assist with on-the-fly conductors' marking changes, for example, or other such events where having a sighted musician on board will assist in keeping up with the requirements of being a member of a music ensemble or activity.
- This is something that needs to be discussed with a client's personal NDIS planner who will add it to their plan as an expense to be covered.

# Closing Comments

- Overall there is great value in students learning to use the Braille Music Code and current technologies such as BME2 and GoodFeel.
- It enables independence in being able to write their own music as well as gaining access to what is already available in sheet music whether that be hard copy, PDF files, MusicXML or public online libraries or other resources.
- Services are becoming more available globally for people with vision impairments to gain access to Braille Music more easily.
- New and improved software is currently under development with a global interest in making this happen to enable a larger output, faster and accurate Braille Music for end users at all levels of learning.



# Links and References:



- Vision Australia Print Access Webinar: Producing braille music (YouTube):  
[https://www.youtube.com/watch?v=53B\\_VwCufd0](https://www.youtube.com/watch?v=53B_VwCufd0)
- Vision Australia Personal Support Services:  
<https://www.visionaustralia.org/services/print-accessibility/alternate-format-production>
- DAISY Consortium Project:  
<http://www.daisy.org/project/daisy-music-braille>  
<https://daisy.org/activities/projects/music-braille/latest-developments/>
- W3C website: <https://www.w3.org>

- Information on Braille Music Software:  
[https://www.rnib.org.uk/sites/default/files/Automated\\_braille\\_music\\_Transcription\\_Solutions.docx](https://www.rnib.org.uk/sites/default/files/Automated_braille_music_Transcription_Solutions.docx)
- Sao Mai Centre for the Blind App & Braille Converter tool links:  
<https://play.google.com/store/apps/details?id=org.saomaicenter.music.reader>  
<https://www.saomaicenter.org/en/smsoft/smb>



**Vision  
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Blindness. Low Vision. Opportunity.