

# Building Sound and Spirit

Discovering the Voice of the Choir

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*“All voice science regarding the act must ultimately serve the art of singing.” –Richard Miller*

*“It is through collective vocal music-making that I first truly connected on a very deep level with another person.” –Jay Besch, Westminster Kantorei member*

## ■ BUILDING SOUND BUILDS SPIRIT

- The nature of collective sound- finding your voice within the whole
- Physical presence of overtones in the rehearsal space
- Collective expression of emotion through a visceral experience
- Voicing the choir

Each of the singers is encouraged to produce their own most vibrant, colorful, and beautiful sound. Singers take that sound and place it within the resonance of the group. When the color of each voice lives within the same sleeve (intonation, register, clarity of vowel) **collective resonance** occurs. The pitch is clarified, the sound rings due to the Singer’s Formant, and the sound is unified.

## ■ RESONANCE/CHIAROSCURO

Professional singers learn to manage their resonance to create maximum brilliance and clarity with minimal vocal stress, allowing for efficient tone production- a balance of bright and dark.

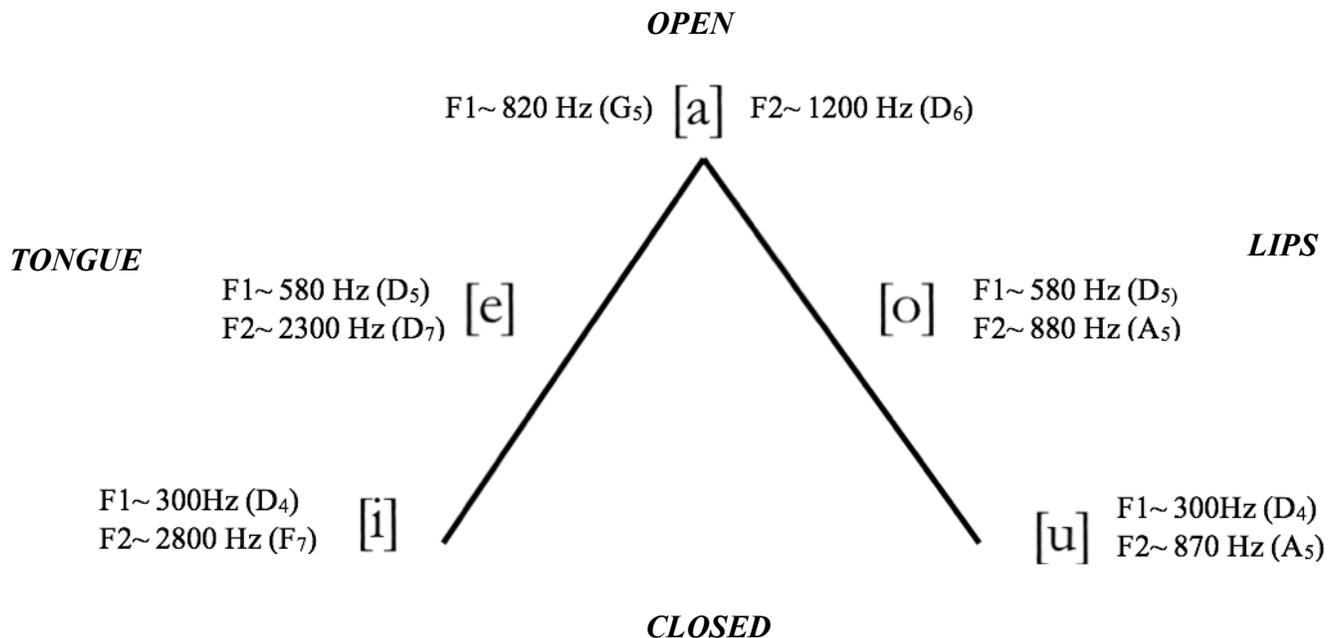
## ■ FORMANT TUNING/VOWEL MODIFICATION

- A formant is a concentration of potential acoustic energy around a particular frequency (pitch) region. You cannot hear a formant, but you can hear the result of a formant being aligned with the fundamental pitch or one of its overtones.
- There are two formants that make it possible to identify a vowel (F1 & F2). The Singer’s Formant, which occurs on average near 3000 Hz, has been described as a clustering of formants (F3-F5). This is the “ring” we hear in the trained singing voice.
- Resonance occurs when the fundamental pitch or its overtones are aligned with one or more formants.
- We cannot always move the pitch, but we can move a formant- just change the vowel. This will aid the singer in gaining resonance, and aid the choir in finding collective “ring”.

■ TEACHING

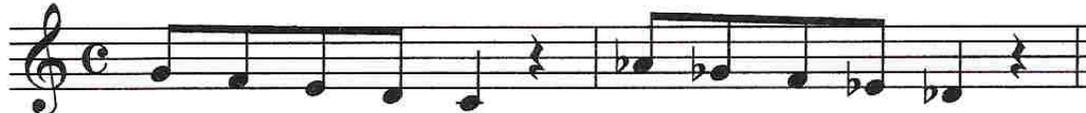
- [i] and [u] tend to create success for choral singing:
  - The first formant (F1) for both [i] and [u] lines up most easily with the fundamental or first overtone found in the typical tessitura required of choral singing. The higher the pitch, the more open the vowel must be (opening the mouth raises F1).
  - Second formant (F2) of [i] occurs near the Singer's Formant, creating ring
  - [u] tends to engage the head register due to a lengthening of the vocal tract
  - Introduce and work with pieces on neutral vowels that encourage easy, vibrant sound
  - Alternation between text and the successful vowel stream keeps clarity and vibrancy in the sound
  - Breathy, out of tune, or spread/young sound can be a result of misaligned formants and overtones (the wrong vowel at the right time)
  - Choose exercises that go from the top down to engage the head register
  - Begin exercises in the mid-range

**VOWEL CHART**



■ SUGGESTED EXERCISES

Vocal play- finding ring



A musical staff in treble clef with a common time signature (C). The first five notes are quarter notes on the notes G4, A4, B4, C5, and B4. The next five notes are quarter notes on the notes G3, F3, E3, D3, and C3. There are rests after the fifth note of each group.

ming ming ming ming ming      ming ming ming ming ming

Identifying spaces for different vowels



A musical staff in treble clef with a common time signature (C). The notes are: quarter note G4, quarter note A4, quarter note B4, quarter note C5, quarter note B4, quarter note A4, quarter note G4, quarter note F4, quarter note E4, quarter note D4, quarter note C4. There are rests after the fifth and tenth notes.

[m] - [i] - [m] - [e]      [mɑ] - [mo] [mu]

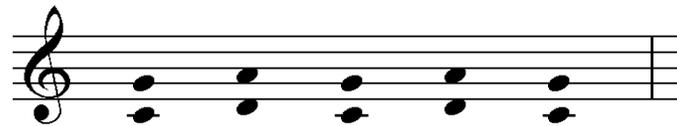
All vowels i e α o u



A musical staff in treble clef with a common time signature (C). The notes are: quarter note G4, quarter note A4, quarter note B4, quarter note C5, quarter note B4, quarter note A4, quarter note G4, quarter note F4, quarter note E4, quarter note D4, quarter note C4. There are rests after the fifth and tenth notes.

ni      α

Training intonation using natural occurrence of overtones



A musical staff in treble clef with a common time signature (C). The notes are: quarter note G4, quarter note A4, quarter note B4, quarter note C5, quarter note B4, quarter note A4, quarter note G4, quarter note F4, quarter note E4, quarter note D4, quarter note C4. There are rests after the fifth and tenth notes.

mi      me      mα      mo      mu

## **Suggested Resources**

- Bozeman, Kenneth W. *Practical Vocal Acoustics: Pedagogic Applications for Teachers and Singers*. Hillsdale, NY: Pendragon Press, 2013.
- Coffin, Berton. "The Relationship of Phonation and Resonation." *NATS Bulletin* February/March (1975).
- Emmons, Shirlee and Constance Chase. *Prescriptions for Choral Excellence: Tone, Text, Dynamic Leadership*. New York: Oxford University Press, 2006.
- McCoy, Scott. *Your Voice: An Inside View*. Princeton, NJ: Inside View Press, 2004.
- Miller, Donald Gray. *Resonance in Singing: Voice Building through Acoustic Feedback*. Princeton, NJ: Inside View Press, 2008.
- Miller, Richard. *English, French, German and Italian Techniques of Singing*. Metuchen, NJ: The Scarecrow Press, 1977.
- Sundberg, Johann. *The Science of Musical Sounds*. San Diego: Academic Press, Inc., 1991.
- Titze, Ingo R. "Acoustic Interpretation of Resonant Voice." *Journal of Voice* 15 (2001).

## **Software**

- Analyzer Pro (also called Voice Analyzer, available as an app)
- Overtone Analyzer ([www.sygyt.com](http://www.sygyt.com))
- Visible Sound (available as an app for Mac)
- Voce Vista ([www.vocevista.com](http://www.vocevista.com))

## **Suggested Ensembles for Listening**

- Choir of Trinity Wall Street
- Gallicantus
- Orphei Dränger
- Rias Kammerchor
- Seraphic Fire
- Stuttgart Kammerchor
- Swedish Radio Choir
- Tenebrae