

An alternative approach to Musical Accompaniment: Theory and Practice. and its application to Waldorf school curriculum.

Lectures (1 hour/month). Home Work (2 hours / month).

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Prerequisite: 1) Grade 4 and up, No musical education (if you have one, you'll to imagine you don't just as a new child who knows nothing about the music except what s/he can feel about sounds!), 2) A bit of physics of sound (LESSON #P1)

TODAY (LESSON #1):

- - What do we hear when a Guitar string vibrates.
- - Tonique, Dominant, Subdominant comme les « least common denominator » frequencies of a string vibration : $1/2$, $1/3$ and $1/4$ of a string.
- - Locations of Dominant, Subdominant sur le guitare: string up, string down
- - Exercices : trouver les Dominant, Subdominant pour chaque note : Sol et Fa pour Do
- - Les cordes Dominant, Subdominant comme les bloques principaux de chaque chanson.

NEXT (LESSONS #2-#5)

- - Tonalites Pareilles, Les cordes pareilles, et les exercices : La-minor pour Do-major Song Theory
- - Apprendre de reconnaître le début, le fin de la chanson/phrase musical, et les moments de transition des cordes
- - Les motifs/schémas musicales fréquentées.
- - Appliquer la théorie avec les chansons d'école
- - Les idées/les jeux à faire avec vos enfants, ...
- - Chanter en harmonie (en deuxième voix)
- - Vous comme auteur-compositeur-interprète...

Petites experiences avec le cord de la guitar

What do we hear when string vibrates:

- **Pitch = sqrt (Tension) / sqrt (Density) / Length**
- But also harmonics (little other vibrations)

LA string = 440 Hz, + 880 Hz, + ...

[Song Theory](#)

Flagellettes:

- Vibrates both on left and right of your finger only on 1:1 (T), 1:2 (D) and 1:3 (S) points
- For T=LA: D=SOL, S=FA

Notations[4]: we prefer S & D!

Function	Roman Numeral	German	German abbreviation
Tonic	I	Tonic	T
Supertonic	ii	Subdominant parallel	Sp
Mediant	iii	Dominant parallel/Tonic counter parallel	Dp/Tkp
Sub-Dominant	IV	Subdominant	S
Dominant	V	Dominant	D
Sub-Mediant	vi	Tonic parallel	Tp
Leading/Subtonic	vii	incomplete Dominant seventh	diagonally slashed D7

[Song Theory](#)

Harmonics are used to identify an instrument or vowel !

From [2]:

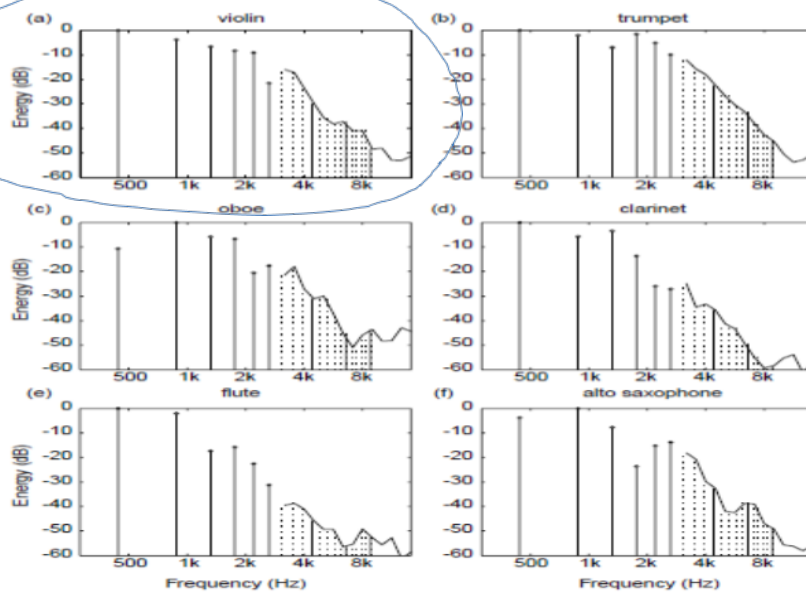


FIGURE 28. The maximum values of the harmonic spectra for isolated tones performed by (a) violin, (b) trumpet, (c) oboe, (d) clarinet, (e) flute, and (f) alto saxophone. In each case, the energies of the first six partials are estimated independently. Above the sixth, energy is measured by cochlear channel rather than by partial number because multiple partials mix in each cochlear channel. The abscissa is frequency, the ordinate, relative energy (in dB). The frequencies of the first 20 partials are indicated by vertical lines (dotted lines, above the sixth partial).

Why T, D and S frequencies are so pleasant to listen and easiest to sing?

- T string plays: $T + 2T + 3T + 4T + 5T + 6T + \dots$
- $D = 3/2 T$
- $S = 4/3 T$
- D string plays: $D + 2D (=3T) + 3D + 4D (=6T) + 5D + \dots$
- S string plays: $S + 2S + 3S (=4T) + 4S + 5S + 6S (=8T) + \dots$

Song Theory

All of them play many common harmonics!

You get Resonance
and no dissonance (which happens with other notes)

String up, String down

- Flagelettes are used to tune the guitar:
 - D (1:2 or 2/3 of T string) – for string below
 - S (1:3 or 3/4 of T string) – for string above
- Similarly: Song Theory
Having one Chord as Tonic, you can easily find Dominant / Subdominant chord!
! –
by shifting fingers string up / down

T and D (and S) as building blocks of a song. Lets start feeling them!

- T yields tonalite – you always start and end on it !
- Trivial (most pop) song repeats the melodical phrase in ... where it's easier to repeat it (ie. in D and/or S). Song Theory
- D – you're about to end.
- S – music evolves.

Common patterns

- But first feel where there's a change of chords.
- Then try to guess
 - T, T, T
 - T • D • T
 - T • S • T, T • S • D • T
- First and Last chords are ALWAYS easy (T), almost end is also easy (D)

Song Theory

Chansons de mois de mai

In order of increasing complexity:

- Dans nos plus beau atours: TTTT/TTTT
- Au grand pre:
TTDT/TTDD, Refr: SSTT/DDTT
- Derriere et devant:
TTDD / TTDT, Refr: TTSD / TTDT
- Rencontrez le mois de mai - NEXT LESSON
 - Starts from PARALLEL TONIC (MINOR Tonalite)

Song Theory

Home Work: Theory and Practice

1. Using the formula for Frequency $\sim 1/\text{Length}$, and knowing that $F(\text{LA}) = 440 \text{ Hz}$, and that $\text{Length (D)} = 2/3 \text{ Length (T)}$, $\text{Length (S)} = 3/4 \text{ Length (T)}$, Compute in recursive fashion:

frequencies of all possible D and S, starting from LA(440Hz), until you'll get again LA ($k \cdot 440$), i.e:

$D(\text{LA}), D(D(\text{LA})), \dots$ and $S(\text{LA}), S(S(\text{LA}))) \dots$

- Don't think about how they are called, Just count how many frequencies you'll get – you'll get exactly 12 • This is how many notes are in octave!...

- Then sort them in increasing order and give names to those frequencies (LA, SOL, SI, ... LA). • Now you know for each note X, it's $D(X)$ and $S(X)$.

- Now, take your chords book and verify that each T chord, $S(T)$ chord lies one string down, while $D(T)$ chord lies one string up.

2. Practice finding/playing C, $G=D(C)$, $F=S(C)$ in (4) different positions

Song Theory

References available online:

1. [The theory of sound](#), JW Strutt - 1877 - books.google.com p. 1-30

2. Sound-Source Recognition: A Theory and Computational Model, MIT PhD thesis 1999

3. http://en.wikipedia.org/wiki/Music_theory

4. http://en.wikipedia.org/wiki/Diatonic_function Song Theory *

5. <http://fr.wikipedia.org/wiki/Portail:Musique>

6. <http://www.musictheory.net> *

1. Has British English, Français (French), Polski (Polish), Svenska (Swedish), Português Brasileiro (Brazilian Portuguese), Српски (Serbian)