

### 8.3 The character of the musical keys

"And indeed it appeared that for Beethoven, certain keys had certain characters that made them useful for corresponding moods and content<sup>\*</sup>". This statement and similar ones have led to attribute to a musical key an absolute character, in the sense of Eb-major = heroic, C-major = impersonal, E-major = solemn. This may have different reasons:

- a) Musical keys do have a character. Brilliant musicians (such as e.g. Beethoven) have recognized this, and have oriented their compositions accordingly.
- b) For whatever reason, brilliant musicians have believed in a character of the keys. Admirers of their music have internalized this, learned from it, imitated it, passed it on ... and thus a self-fulfilling prophecy came into being: because Eb-major sounds heroic, heroic music is composed using Eb-major ... and so Eb-major sounds heroic.
- c) The whole shebang is nothing but coincidence.

Mies reports from an experiment that points to the existence of absolute character. He played Schubert's Impromptu to about 20 pupils: once in G-major and Gb-major each. He asked which of the two was the original key. 3 pupils voted for G-major and the rest for Gb-major. They reasoned that the key they chose fitted better to the mood of the piece. Mies knew about the limited validity of such a single experiment and started systematic investigations with a multitude of piano pieces. At first glance, his results are contradictory: on the one hand he does arrive at a character correlation (see table below), but on the other hand he summarizes: "and here the investigations are clear proof that there is no general character of the keys across ages and composers, meters and time, rhythms and melodies. **A general character of a key that would be independent of composer, time, listener, etc., does not exist.**" In fact, this summary does not actually contradict the table because the latter answers the question of which matching the investigated composers have preferred. If D-minor feels passionate to Brahms, this is of no more significance than the statement that Eb-major was Beethoven's favorite key. Who would deny any great composer a subjective preference? A pars-pro-toto principle is, however, not justified by this.

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| C-major:  | <i>Objective, superficial, impersonal. Key of truth. For thanks and salute.</i>          |
| C#-major: | <i>Glimmering, sparkling, lively, virtuosic.</i>   |
| D#-major: | <i>Soft, gentle, emotional.</i>  |
| D-major:  | <i>Key for marches, fanfare, cheerfulness, joy, festive splendor, scenes of revenge.</i> |
| Eb-major: | <i>Serious, grave, deep love, tormenting lovesickness.</i>                               |
| E-major:  | <i>Solemn, serious to gloomy, belongs to exalted and otherworldly moments.</i>           |
| F-major:  | <i>Friendly, natural, moderate.</i>  |
| F#-major: | <i>Passionate, ardent love.</i>  |
| G-major:  | <i>Simple, uncomplicated, cheerful.</i>  |
| Ab-major: | <i>Quiet, emotional, longing. Sinister scenes.</i>                                       |
| A-major:  | <i>Manifold, lovely, serenade-like. Key of happy people. Expression of splendor.</i>     |
| Bb-major: | <i>Cheerful, playful, gently. Cordial sentiment.</i>                                     |
| B-major:  | <i>No general character.</i>   |

**Table:** The character of the keys. Paul Mies, 1948. Strongly abbreviated representation.

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\* P. Mies, Der Charakter der Tonarten, Staufen, Köln 1948

In his account, Mies explicitly points to the enharmonic identities and refers to the piano tuned to equal temperament. If the keys had an absolute character, Db-major could not appear soft and gentle while C#-major is sparkling and lively. That C#-major appears virtuosic – that is conceivable to the musician given its no less than 7 accidentals! If we look long enough, we do find contradictions: Gb-major = sad; F#-major = passionate. On the other hand, a lot can indeed be made to fit: the CD tries to make us believe that "***Roll Over Beethoven***" (with apologies, dear & highly esteemed Ludwig van) is played in Eb-major. Tormenting lovesickness? Maybe not ... presumably heroic – after all, Chuck B. is the true R'n'R hero to many. However, what does the songbook tell us (*the authentic transcriptions with notes and tablature*)? D-major!! That would be "joy", then! That's gotta be it: the tape machines ran a few percent slow back in the 1950's, and Chuck must have certainly played in D-major. Cheerfulness, joy, festive splendor – that's really like him! However, Mies also lists "scenes of revenge" related to D-major, and lo and behold: "*Don't you step on my blue suede shoes*" – this little sideswipe is put in proper perspective, too. Or, how about something from the Stones' songbook: "***Let's Spend The Night Together***" of course is in Ab-major. That fits him to a T: longing and emotional chap that he is, our Mick. Did somebody say "sinister scenes"? Rather, a certain "sensitivity and delicacy of feeling", as Riemann elaborates. "Of practice-character", Mies complements, and is bang on target (*you need some guiding, baby*). Typical for Ab-major are also "the mid-tempos taking up the most extensive space" (*I'm in no hurry I can take my time*) and "medium and slow tempi with frequently on-going movement": an excellent match for what the Stones' front-man stands for. Not to forget: "sweet, romantic melancholy and longing" (*now I need you more than ever*), as well as Stephani's "soft-solemn seriousness" (*Oh my, da da da da da da da da*). And finally: "the movement often perceivable in the tempered pieces is also felt in the accompaniment" (*around and around, oh my, my, yeah*) – perceivable movement in the background vocals, indeed. Much could be added here, for example the *19th Nervous Breakdown* (E-major, otherworldly moments) or *Street Fighting Man* (F-major, friendly, natural, moderate). And many more ...

Still, we do see criticism, as well: "in view of all these statements, an absolute character of Eb-major certainly cannot be observed." Or: "indeed, literature does not agree about Ab-major". Or: "would it not be possible that Beethoven's quotation (not actually from his own notes) was not correctly handed down in its relation to the keys; no support can be found in his own works." These are all Mies' citations. It would also be possible that everything is one big misunderstanding.

In the course of the last centuries, highly diverging opinions can be found about the absolute tuning of an instrument: the chamber pitch (concert pitch, standard pitch), i.e. the middle a (a', A4), varied in its frequency by as much as 337 – 567 Hz! Even going back only to the 18<sup>th</sup> century (checking in with Beethoven or Brahms), we still find a scatter of just shy of a semitone). That could turn A-major ("key of happy people") into Ab-major and thus call for "sinister scenes". Nightmarish: the A-major scherzo played too low by a hair becoming the hotbed for sinister Hans-in-Lucks and happy gloom-o-philes – a cut set of joy and sorrow? "Die then, die now, die! Haha! Hahaaaa! Hahahaha! Die! Die!" "Welcome oh blissful woe – continue, go on." Without doubt: A-major, a quarter-step too low?

Nay, psychoacoustics does not know of a "tonal character" based solely on the frequency position. It is still conceivable that Schubert's Impromptu sounds more authentic in Gb than in G. There are no known recordings of Mies' experiment – we can therefore only speculate: Mies had presumably rehearsed the piece in Gb, with the transposition to G requiring different finger movements and possibly resulting in a different sound character just because of that. The experienced subject can detect timing-differences as small as 5 ms (Chapter 8.5)!

Also possible: the special tuning of the piano used resulted in characteristic beats that of course are key-dependent. Specific resonances of the individual piano may have played a role, changing individual notes/passages/chords in a key-specific manner. And finally it cannot be excluded that Mies (who knew when he was playing in the original key) was himself not convinced of the use of G-major, and therefore played with inferior expression in that key. For a double-blind test this was NOT.

Could we repeat the Mies-experiment as a double-blind test? We would require a very good pianist who practices both the G- and the Gb-version with the same dedication. That would seem doable. Presumably, however, this pianist would (wittingly or unwittingly) prefer one of the two versions, and thus would not be able to play both with the same expression. In this case the listeners would assess the way of playing and not primarily the key. We would therefore have to directly ask the pianist (or several pianists) but this would put the general validity of the experiment. Given modern options, a purely electronic transposition would be feasible: the piece is recorded e.g. in Gb-major and reproduced with a 6% higher speed (or sampling frequency). But then not just the key changes but also the timing: the G-major version is faster by 6% compared to the Gb-version. That's not optimal, either. Using harmonizers or pitch-shifters (special equipment used in recording studios) that change the pitch without influencing the reproduction speed calls for skepticism, as well, because with them the subject may judge the quality of the signal-processing algorithms and not just the character of the key.

Conceivable would be the following approach: the pianist plays the piece in the original key, and the key movements are electronically recorded (via MIDI or something better). From the stored data, artificial piano sounds can be created – both in the original key and in a transposed version. This ‘electronic music’ may now be judged with respect to the character of the key\*. Today, psychoacoustics assumes that such music has no inherent key-specific character, i.e. that aggressiveness, passion, or sorrow need to be expressed by means of harmony and rhythm.

However, this does not imply that the character of a piece of music accompanied by the guitar cannot change if the piece is transposed from G-major to A-major. If the guitarist plays a G-major chord without barring strings (g-b-d-g-b-g), and changes to the ‘open’ A-major chord (e-a-e-a-c#-e), the color of the sound will change significantly. However, this is not due to the different key, but results from the different chord composition. In the G-major chord the fifth appears only once, but three times in the A-major chord. Conversely, an A-major chord played in the 5<sup>th</sup> position (barré on the 5<sup>th</sup> fret) has only two fifths. Thus the simple conclusion is: when changing keys, the character of the sound can change – however this is not according to a generally applicable scale but specific to the respective interpretation and instrument.

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\* Similar experiments had already been carried out by Terhardt and Seewann – however with sounds that differed from those of the acoustic piano. The objective of these tests related to perfect pitch (absolute pitch) and not to the character of the musical key [Aural key identification and its relationship to absolute pitch. Music Percept. 1, 1983].