Revisiting Charles Keil: Commentary on Câmara et al. (2023)

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ABSTRACT: Charles Keil (1966) argued against Leonard Meyer (1956) that the expressivity, emotional power, and groove of music does not primarily lie in the syntax of the notated score, but in music performance as a bodily and participatory process. So far, empirical music research has investigated the traces of the performance process primarily focusing on note onset timing (or microtiming). Studies established that microtemporal deviations from metronomic regularity (isochrony and synchrony) tend to be systematic and not just random deviations caused by motor imprecision. Besides this positivistic acknowledgment of microtiming patterns, research has largely failed to show that microtiming has the emotional effects predicted by Keil. One reason for this failure may be that note onset displacement is only one performance aspect among many (e.g., articulation, timbre, dynamics) that are potentially relevant to listeners' and musicians' emotional responses. In their recent studies, Câmara and colleagues analyze traces of music performance in different dimensions of the musical artifact. This holistic approach may lead to a new empirical assessment of Keil's ideas in the future, more than half a century after they were first proposed.

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CHARLES Keil's paper *Motion and Feeling through Music* (1966) was a response to Leonard B. Meyer's influential book *Emotion and Meaning in Music* (1956), in which Meyer argued that the expressivity of music and its meaning are rooted in musical syntax. In his paper, Keil acknowledged that syntax may be important for the expressive content of notated compositions from the Western art music repertoire (so-called classical music). Yet, he claimed that syntax does not explain the expressivity of many other forms of music performance around the world. With this, he referred to music that includes substantial proportions of improvisation and spontaneity, music that is understood as a process, not as a work, music that is propelled by a vital drive (a mysterious essentialist concept borrowed from André Hodeir's 1956 classic jazz analysis), and music that has groove, i.e., music that motivates motor responses in listeners.

Keil (1966) hypothesised that vital drive does not result from musical syntax, but from the way music is performed. He exemplified this with reference to jazz, stating that a drummer's tap (i.e., the bodily process of producing sounds on drums or cymbals) is essential to the drive of the music. He distinguished between two types of drummers: 'on-top' drummers hit the cymbals exactly on the metronomic beat by keeping "the stick close to the cymbal, arm fairly stationary with the stroke moving perpendicular to the cymbal" (Keil, 1966, p. 342). Conversely, 'laid-back' drummers delay accents on some notes and appear to attack the cymbal more "horizontally" (Keil, 1966, p. 342). Both types of drummers, Keil asserted, are capable of generating great vital drive, but they do it differently, and the effect on the listeners will be different, too. Vital drive in jazz drumming thus depends on the concrete physical interaction between a drummer's body and their instrument.

Keil then added the bassists to the mix and categorised them into 'stringy' bassists, on one hand, who play high on the strings producing light yet sustained melodious notes. He contrasted them with 'chunky' bassists, on the other hand, who pluck the strings near the bridge and have a shorter, heavier, percussive tone. According to Keil, 'on-top' drummers pair well with 'chunky' bassists. These pairs lay down a rock solid fundament that won't be shaken by a strong countercurrent of syncopations played by soloists such as the idiosyncratic Thelonious Monk. 'Laid back' drummers and 'stringy' bassists also make a good combination:

according to Keil, they can swing on their own, and allow a melodist solo player such as Miles Davis to drop behind the beat without affecting the vital drive of the entire performance. Keil agreed that other combinations do exist and may be successful, but he observed that stringy/on-top teams may have a tendency to rush the tempo, whereas chunky/laid-back pairs may generate a "rather sluggish vital drive" (Keil, 1966, p. 344).

Keil's core point was that the expressivity of music arises in the physical, collaborative act of performing, and that the "how" of this process is at least as important as the "what" that is being performed. This point was difficult to prove in the 1960s. One important reason for this lack of impact was methodological: In 1966, there was no way to demonstrate scientifically that these traces of the performance process or "participatory discrepancies" (PDs; see Keil, 1987) even existed. This situation started to change in the 1980s and 1990s, when researchers such as Bengtsson and Gabrielsson (1983), Rose (1989), Repp (1992), Alén (1995), and Prögler (1995) found and applied methods to measure the exact onset times of musical notes. The timing measurements revealed a plethora of microscopic life in shortest time spans of performed music, and they showed that participatory discrepancies indeed exist in the time domain of music (much to the relief of Keil himself; Keil, 1995, p. 2). This triggered a series of microtiming analyses that studied performances from various musical contexts and genres, be it Western art music (Dodson, 2011; Goebl et al., 2004; Repp, 1992, 1997, 1998; Senn et al., 2009, 2012), jazz (Datseris et al., 2019; Ellis, 1991; Friberg & Sundström, 1997, 2002; Honing & Haas, 2008; Nelias et al., 2022), samba or other forms of popular music (Haugen, 2014, Hosken et al., 2021; Naveda et al., 2011).

Keil not only discussed the mere existence of PDs, but also their effect on listeners, claiming that "the power of music is in its participatory discrepancies [...]. Music, to be personally involving and socially valuable, must be 'out of time' and 'out of tune'" (Keil, 1987, p. 275). This motivated research to investigate whether microtiming deviations were relevant to triggering the groove experience, understood as an inner urge to move in response to the music (a form of personal involvement in the music). However, in listening experiments, groove ratings of stimuli with patterned microtiming either did not exceed those of perfectly quantized stimuli (Senn et al., 2016), obtained significantly lower ratings (Davies et al., 2013; Frühauf et al., 2013; Skaansar et al., 2019), or were irrelevant (Madison et al., 2011). This indicates that the music does not necessarily have to be 'out of time' to be personally involving.

Was Keil wrong? Or was his concept of participatory discrepancies misinterpreted by the groove research community? The work by Câmara, Danielsen, and the Oslo RITMO center points at a possible third option, namely that the groove experiments did not go far enough in their reproduction of PDs. As of today, the PD manipulations consisted exclusively in displacing events in time, without changing the sounds themselves. However, Keil had suggested that on-top and laid-back drummers not only struck the drums and cymbals at a different time relative to the beat, but that they also used different playing techniques. The different techniques produce notes that vary in terms of timbre, loudness, and articulation. In their recent work, Câmara, Danielsen, and the Oslo RITMO team have shown that these variations are as real in actual performance as the temporal displacements. Bassists tend to play louder when they play ahead of the beat (Câmara et al., 2020a), compared to on or after the beat. Guitarists use darker timbres, longer notes, slower movements and elongated attacks when they play laid-back, compared to other playing styles (Câmara et al., 2020a; Câmara et al., 2023). Drummers play the back-beat louder if they articulate it in a laid-back feel (Câmara et al., 2020b). Such changes of dynamics, timbre and movement style in the production of sounds also affect the perception of timing in listeners (Danielsen et al., 2019). All this resonates with Keil's own description of PDs as having many different dimensions (Keil, 1995, p. 7).

Combined, Câmara and colleagues' results suggest that the operationalisation of PDs as temporal displacements of identical sounds (as found in microtiming-related groove research such as Senn et al., 2016) might be overly simplistic. The different feels affect musicians' sound production in a variety of dimensions, leave their traces in the performed music, and might be relevant to the effect of the music on the listeners. In their studies, Câmara and colleagues provide important groundwork for a re-evaluation of Keil's claim that the power of music lies in its participatory discrepancies. Keil acknowledged that his idea "didn't trigger an intellectual revolution or shift the paradigm in musicology" (Keil, 1995, p. 2) back in the 1960s and 1970s, and it still seems to be fairly unimportant for musicology today, more than half a decade after the publication of *Motion and Feeling through Music*. Yet, Keil's revolution may just be very, very slow in the making.

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