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Rhythmic Experience while Structuring Units of Action

Jin Hyun Kim

While a standard definition of (musical) rhythm indicates that it consists of the duration of individual events of sound and silence, this paper suggests that rhythm consists of the units of events such as sounds, silences and bodily movements which are no preexisting formal objects that can be combined, but units of action that are constituted in the course of rhythmic experience.

Rhythmic Experience while Structuring Units of Action

Jin Hyun Kim

Humboldt-Universität zu Berlin

Institut für Musikwissenschaft und Medienwissenschaft

The German Wikipedia article on (musical) rhythm defines it as a structure comprising the duration of individual events of sound and silence:

In der Musik bezeichnet der Begriff Rhythmus (altgriechisch ῥυθμός) eine der beiden horizontalen (zeitlichen, temporalen, sequentiellen) Dauerstrukturen von Einzel-Schallereignissen (Einsätze oder ggf. Endungen von Tönen/Geräuschen, grafisch durch Notenzeichen repräsentiert) und Dauern der Stille (grafisch: Pausenzeichen)

But what exactly is the unit in this definition? Can the smallest unit of musical rhythm be identified? In other words: What is musical rhythm made up of?

In standard music theory as well as in current rhythm research, the basic beat, a unit dividing a period of time into equal impulses, is conceived of as the smallest element of rhythmic structures. From the physical point of view, a beat refers to the duration of a sound. On the level of musical description, it is a singular point without temporal duration. But rhythmic patterns are not reducible to musical beats. A sequence of beats – called *pulse*, which refers to a series of (auditory) events occurring in a recurring time interval, however, rarely happens in the case of musical events; it is more of an abstract description of time course. Therefore, musical rhythm is not reducible to beats. On the other hand, a larger rhythmic unit such as a rhythmic pattern consisting of temporal events lacks consistency since temporal events flow and change.

The question of whether there are principles underlying the structuring of a period of time that lead to the experience of rhythm was discussed in detail in 1926 by the neo-Kantian philosopher Richard Höningwald in his book titled *Vom Problem des Rhythmus. Eine Analytische Betrachtung über den Begriff der Psychologie (About the problem of rhythm: An analytical consideration of the concept of psychology)*. According to Höningwald, experiencing time intervals is a prerequisite for experiencing rhythm (for a detailed discussion see Kim, 2020). However, rhythmic experience differs from the “simple experience of time intervals” (Höningwald, 1926, p. 4, recited from Kim, 2020, p. 320). Even if the rhythmic experience corresponds to the perception of several successive temporal

events, the fact that there are several events is not enough to constitute a rhythm, since events can be grouped arbitrarily. Indeed, Hönigswald believes that an arbitrary grouping of several successive events results in “rhythm indifference” (Hönigswald, 1926, p. 8, recited from Kim, 2020, p. 320); for rhythm to be rhythm rather than rhythm indifference, it is crucial that what is heard is understood as a connected unit.

Rhythm is constituted as an object of experience through “the acts of fulfilling the conditions set with wholeness” (Hönigswald, 1926, p. 6, recited from Kim, 2020, p. 321), which Hönigswald describes as “production”. But what are such conditions? In order to “produce” a rhythm, it is necessary that individual elements are “given” (Hönigswald, 1926, p. 7, recited from Kim, 2020, p. 321). According to Hönigswald, the rhythm must “adhere to its wholeness” (Hönigswald, 1926, p. 8, recited from Kim, 2020, p. 321), which exists due to “the commonality of given parts” (ibid.). Hönigswald understands rhythmic wholeness as the unity of a relationship. Such a relationship cannot be analysed solely based on certain physically verifiable temporal duration structures of individual events. Rather, it establishes the commonality of its parts in the course of rhythmic experience. Each given part helps create the rhythm through its participation in this relationship. And this foundation only takes place in the experience of rhythm which is constituted as a whole. An example that I would like to briefly discuss is one of Gerhard Rühm’s sound poems (*Lautgedichte*), in which he atomistically decomposes language into its lettric elements, using a decomposition technique called *lettrism* (cf. Emanuely, 2013). As shown in the following example, the smallest literary elements created by the lettric decomposition technique do not bear any semantic meaning, yet meaningful units are constituted through rhythmic experience that emerges while structuring units consisting of various letters through a pronouncing action (see figure 1).

ein lautgedicht

b
b g
b d
bbg bbgd
bbk
bbkt bbkt
bbkt bbkt bbkt bbkt
bbktp bbktp bbktp bbktp bbktp bbktp
bbktg'p
bbktgd'p bbktgd'p
bbktggdp bbktggdp bbktggdp bbktggdp
bbktggddp bbktggddp bbktggddp bbktggddp bbktggddp bbktggddp
 bbktggddp bbktggddp bbktggddp bbktggddp
bkt gdp, bkt gdp, bktgdp bktgdp bktgdp bktgdp
ktp ktp ktp ktp ktp ktp tp'pt'tp'pt'tp'pt tptptptttt
ktaaaaaaaaaaooooouugudubup budugutup
bbdugup
bugup
bp

zur aussprache

k, t, p, = stets stimmlos!

B, g, d, = stets stimmhaft!

Das ganze beginnt sehr zögernd und steigert sich allmählich in rhythmisch gehämmerten lautgruppen zum explosiven höhepunkt des „ktaaaaaaaaaaooooou“, wonach der rest wieder versickert.

Figure 1 a sound poem by Gerhard Rühm (available at <https://www.lyrikline.org/de/gedichte/ein-lautgedicht-824>, retrieved January 12, 2022)

This rhythmic wholeness is not a unit abstracted from its parts, and vice versa, cannot be applied to certain characteristics of its parts. Those parts that combine to create the rhythm therefore cannot be regarded as preexisting, but rather as “shaped” (Hönigswald, 1926, p. 26, recited from Kim, 2020, p. 321) only in the course of rhythmic experience – in other words, in the course of producing rhythm. For Hönigswald, production means the structuring of a whole. Hönigswald considers the question of whether a rhythm can be divided into partial rhythms to be misguided, as partial rhythms are not about “objectively given types of rhythm” (Hönigswald, 1926, p. 21, recited from Kim, 2020, p. 322), but about “ways of experience” (ibid.). In this sense, a structuring unit of rhythm is constituted as a unit of experience. It must have been obvious that there are no preexisting musical units that serve as

formal objects that can be combined to create the rhythm. Rather, musical units could be viewed as units of action that coordinate with one another and that are then structured and experienced as a whole (cf. Kim, 2020).

This view is supported by recent developmental psychological studies on protoconversational communication taking place in infant-caregiver interaction. Protoconversational communication is characterised as interindividual coordination involving behaviours in sync/tune with one another as well as qualitatively attuned behaviours, providing shared rhythmic foundation for turn-taking and shared intonational foundation for prosodic matching and melodic adjustment. The developmental psychologist Colwyn Trevarthen has conducted extensive investigations into coordinated behaviours that emerge during infant-caregiver interaction, using a microanalytic approach to audio and video data. A paradigmatic behaviour that has been observed in such a research context is synchronised or attuned coordination between the vocalisations or body movements (e.g. arm movements) of infants and their caregivers' speech voices. In figure 2, Trevarthen's pitch plot shows the melody of the mother's voice and vocalisations of the infant, both based on Middle C. Accented components of the mother's speech serving to give timing to the infant's utterances are shown in spectrographic analysis (cf. Trevarthen, Delafield-Butt and Schögler, 2011, p. 19).

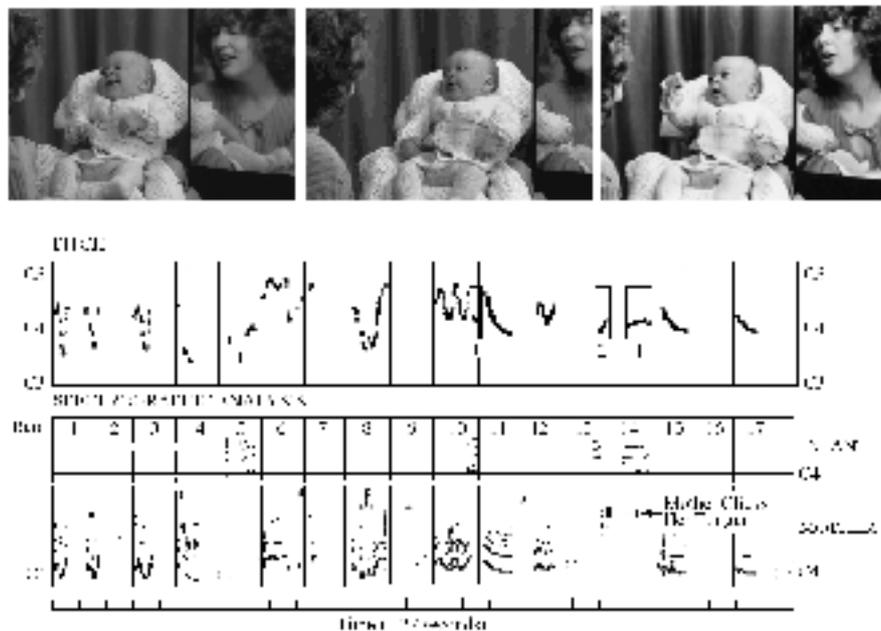


Figure 2

Pitch plot and spectrographic analysis of protoconversation with a six-week-old baby (Malloch 1999, recited from Trevarthen, Delafield-Butt, and Schögler, 2011, p. 19)

Those behaviours have a characteristic dynamic Gestalt or “emergent property” (Stern, 2010, p. 5) creating “holistic experience” (ibid.) of movement, which consists of experiences of time, space, force, and directionality being only theoretically separable from one another (cf. ibid., p. 4f.); the developmental psychologist and psychotherapist Daniel N. Stern calls this dynamic Gestalt a *form of vitality*. Stern conceives of movement not only as a physical process, but also as a mental operation providing “the primary sense of aliveness“ (cf. ibid., p. 9). Movement-based experience does not have a static form, but a form of dynamic movement being directed towards an end and exhibiting a rising and falling contour. Forms of vitality are concerned with the ways (“how”) in which experience is felt rather than the content (“what”) that experience may have. In the course of interaction, the experience that others undergo becomes accessible as a dynamic Gestalt, which can give rise to another dynamic Gestalt structuring one’s own experience. Stern observes such an interaction involving shaping and co-shaping forms of vitality both in protoconversation between infant and caregiver (Stern, 1985) as well as in the creation and appreciation of the arts (Stern, 2010). Forms of vitality are conceived of as multimodal, which means that a form of vitality that possesses one modality of behaviour or consciousness can, therefore, be transformed into the other. Stern holds the thesis that the arts also show forms of vitality in the sense that “the dynamic features of a performance [including changes of musical tempo and rhythm] have usually been amplified, refined, and rehearsed repeatedly” (ibid., p. 76). Tying in with Stern’s thesis, I claimed that musical expressiveness is based on the holistic experience of musical forms of vitality rather than on some static musical features such as major or minor keys which many scholars have focused on in investigating how music evokes emotions (Kim, 2013).

In summary, a unit founding a rhythm is constituted while shaping and co-shaping forms of vitality, i.e. in the course of rhythmic experience that emerges while structuring action units. Building on this thesis, the question posed at the outset of this paper – whether a smallest unit of rhythm can be identified and theoretically justified – should be modified and further particularised. The original question could imply that there would be a preexisting smallest unit of rhythm before structuring action units and rhythmic experience take place. Rather, because rhythm does not consist of the duration of individual events, but of the units of events (sounds, silences, bodily movements, etc.) that are experienced as lasting for some time, we would need to discuss how a rhythm-founding action unit is constituted in the course of an experience-based re-enactment of rhythm.

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Vita Jin Hyun Kim

Jin Hyun Kim, PhD, has been a professor of Systematic Musicology at Humboldt University of Berlin since 2014. Having worked at several transdisciplinary research centers on digital media, (embodied) music cognition, and the philosophy and aesthetics of music, she has been developing a program of philosophically grounded and empirically oriented basic music research as Director of the lab of music technology, aisthesis and interaction (TAIM) at Humboldt University of Berlin.

