Rhythm as Aristotelian Form of Psychological Process (Part 2)

Monday 27 August 2018, by Pascal Michon

Previous chapter

Psychology of Musical Rhythm (Meumann – 1894)

After having discussed in the first chapter of his study most of the general theories of rhythm available in his time, Meumann addressed in the two following chapters two kinds of more specific theories concerning music and poetry, not for their own sake though, but rather to gather information which could be useful to the psychologist.

He first rapidly dismissed Moritz Hauptmann's (1792-1868) *Die Nature der Harmonik und der Metrik – The Nature of Harmony and Meter* (1853) as totally useless for the psychologist (p. 42). Then, he dedicated a long passage, which is worth reading, to Rudolf Westphal's *Allgemeine Theorie der musikalischen Rhythmik seit J. S. Bach auf Grundlage der Antiken und unter Bezugnahme auf ihren historischen Anschluß an die mittelalterliche mit besonderer Berücksichtigung von Bachs Fugen und Beethovens Sonaten – General Theory of Musical Rhythm since J. S. Bach Based on the Ancient and Referring to their Historical Connection to the Middle Ages with Special Consideration on Bach's Fugues and Beethoven's Sonatas* (1880). Westphal (1826-1892) was a German classical scholar, specialist of Greek and Latin metric. Apart from his publications on classical metric and music, he had published several translations and commentaries of Aristoxenus in 1861, 1883 and posthumously 1893.

Whereas Nietzsche reproached Westphal for actually exporting "metric" concerns under the cloak of a general theory of rhythm (see vol. 2, p. 291 *sq*.), Meumann, on the contrary, credited him for endorsing the Aristoxenian—and, in spirit, Artistotelian—assertion that rhythm is a general form that could be applied to different kinds of "rhythmizomena," i.e. the various "moving matters to be rhythmized" (see vol. 1, p. 114 *sq*.), and consequently, that the "metric" was only the "rhythmic" when applied to poetry.

> "Metric," says Westphal, "is the same as rhythmic, but metric is more specific, since it deals only with the rhythmic form of the poetic text. Rhythmic is more general, since it refers to poetic texts as to music." Westphal is well aware that the "rhythmizomena" i.e. "the moving matters *[Bewegungsstoffe]* formed according to the laws of rhythm" are different in poetry and music, on the one hand the notes, on the other hand the language. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 43, my trans.)

He naturally also approved of Westphal's interest in the relation of rhythm to the idea of time as well as of the primacy he gave to impressions—that is, in both cases, the psychological side of rhythm.

> Westphal gives the following definition: “The essence of rhythm consists in a division of time perceptible to the hearer, which seizes the poetic or musical work of art presented to him.” Two things are remarkable in this definition: 1. that Westphal sees in the time organization *[Zeitgliederung]* the essence of all rhythmics; 2. that this time organization is judged from the standpoint of the hearer, [and] that Westphal thus defines the rhythm through a description of the rhythmic impression. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 44, my trans.)

In the same vein, he hailed Westphal for not starting from “the metrical scheme of the bars,” which was, he interestingly claimed, merely a technical device used by the composer to make his expectations concerning the rhythm clear to the player.

> If one wants to find the rhythmic forms, he must disassemble *[zerlegt]* the rhythmic impression and not the metrical scheme of the bars, with which the composer gives the player one of many means to recognize the expected rhythm. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 44, my trans.)

However, in his conclusion, Meumann finally joined Nietzsche in his critique of the excessive importance given to poetic metric by Westphal and his tendency to consider it fit to any domain.

> As much as I agree with Westphal’s assertion that, from the viewpoint of the hearer in poetry as in music, it is always a matter of modification of the same phenomenon, the rhythm, and that, in both domains, common rhythmic elements necessarily become effective and analogous forms must occur, I nevertheless cannot agree with his conception of the metric. Every rhythmic area […] admits a metrical view and contains metric determinations. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 44, my trans.)

Westphal’s theory of rhythm itself was not even entirely satisfactory. Since he wrongly granted primacy to the “similarity of the time sections,” he could not deal adequately with verse which often did not fit in this regular scheme and was incorrectly reduced to a series of feet artificially accented.

> But Westphal does not quite do justice either to the nature of the rhythm itself, because he does not appreciate the relatively independent significance of the accentuation element *[des Betonungselementes]*. As a result, he becomes embarrassed by the rhythm of poetry because the latter apparently lacks the essential element of rhythm, namely the similarity of the time sections *[die Gleichheit der Zeitabschnitte]* (see p. 32 *sq*.). On the other hand, as a result of the misjudgment pertaining to the metric point of view, the verse foot is given too great a significance. (*Research on the Psychology and Aesthetic of Rhythm,* 1894, p. 45)

The second music theorist taken into account by Meumann was Hugo Riemann (1849-1919). He was to become lecturer at Leipzig university in 1895 and appointed professor in 1901. In 1894 he already had published many books on music among which *Musik-Lexikon* (1882) and *Katechismus der Musik*

(1888), which were extensively quoted by Meumann.

In Meumann's opinion, Riemann's approach of rhythm was the most useful to psychologists. First of all, Riemann combined a series of views that remained scattered among previous theorists. He paid heed to "the temporal organization of the impressions" as well as to "the change in intensity and quality of the notes."

> While Hauptmann, Westphal, Lobe, Herbart, Schopenhauer, and Lotze set the essence of all rhythm formation in the temporal organization *[die zeitliche Gliederung]* of the impressions, Köstlin sees the accent change of the notes as that which is properly rhythmic. Riemann, on the other hand, allows all rhythmic relations to be conditioned in the same way by the change in intensity and quality of the notes, as well as by the temporal organization *[die zeitliche Gliederung]*. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 4)

Riemann's definition of musical rhythm clearly identified "the two main means of musical rhythm, changes in tone and changes in the speed of the tone sequence."

> As general concept which encapsulates all facts pertaining to the rhythmization of sounds *[Rhythmisirung der Töne]*, the rhythm is the "ordering of the variations in tone strength and of the change in speed of the sequence of tones by maintaining an easily pursuable division of time into equal parts." (*Katechismus der Musik*, 1888, p. 1.) The advantage of this definition compared to all mentioned above is that here the two main means of musical rhythm, change in tone and change in the speed of the tone sequence, are properly identified; the temporal organization of the notes becomes rhythmic only if it is easily pursuable. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 49, my trans.)

In Meumann's view, Riemann had also correctly identified the role of the repetition, which "increases the weight of the bar parts," in the production of rhythm (p. 51). This was, according to him, the basis of the pervasive use of parallelism and repetition in ancient Hebrew poetry (on parallelism, see vol. 2, p. 186-187).

> The simple rhythmic means of the oldest poetry, especially, are based on this repetition principle, as for example, the accent system of the Hebrew language ("connectors" and "separators") and the parallelism of the phrases in Old Testament poetry show us. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 52, my trans.)

But, most of all, and this probably was his most original contribution, he had brought to light the intricacy between accentuation and time organization. Rhythm in music was not reducible neither to a mere sequence of accents, nor to repetition; it was supported as well by the change in the speed of the note flow.

> Riemann, moreover, has, as it seems purely by means of observation, sought out a greater number of systemic relations *[gesetzmäßiger Beziehungen]* between the two most essential elements of rhythm formation *[Rhythmusbildung]*: time relations and accentuation. He has observed that accentuation is not at all achieved simply by "dynamic accentuation," i.e. stronger impact, but can also be produced "by a slight stretching of the notes falling on the center of gravity." (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 53, my trans.)

But not unlike Westphal, Riemann still overvalued the metric model by reconstructing all time signatures from two simple meters. Although his view was richer than his counterpart's, he still elaborated the concept of rhythm from those of beat and meter.

> In addition, the word "rhythm" has a narrower meaning in Riemann, which is less appropriate (see *Musik-Lexikon*, 1882, p. 683 and 886; *Katechismus der Musik*, 1888, p. 79 *sq*.). Since Riemann actually presents all time signatures *[Taktformen]* as developments or transformations of the simple duple and triple meters, he designates those transformations of the timing *[Umformungen der Takte]* which result in "values of unequal time length," as rhythmic: "All really rhythmic formations *[rhythmischen Bildungen]* result from contractions or subdivisions of beats *[Zählzeiten]*, especially when not equal but unequal values are obtained, by alternately dividing contracted or contracting subdivided beats *[Zählzeiten]*." (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 49, my trans.)

For Meumann, since Riemann derived rhythm from elementary time units, by mere increase in complexity, he still remained within the metric paradigm.

> From our conception of the metric point of view, we would call Riemann's reconstruction of the more complex time signatures *[Taktformen]* from their basic forms, *metric*, and since the concept of "beat" *[des Taktes]* is for me a purely metrical one, then I can only speak of the development of the *beat* forms from the *beat* units *[von der Entwickelung der* Takt*formen aus den* Takt*einheiten]*. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 50, my trans.)

After this presentation of Westphal's and Riemann's contributions, Meumann introduced his own laboratory observations concerning musical rhythm. Psychologically speaking, the rhythm was the result of a simultaneously *differentiating and combining process*, within and by the consciousness, of the *sound impressions*—whatever their nature—by way of their *accentuation, repetition, ordering*, and *sequencing*.

> Based on a compilation of the statements of 17 observers, which I have checked against each other and whose information I have controlled on myself, I can summarize the following points. In the process of rhythmization we always find 1. an apparent change of accentuation or weight of the impressions; the rhythm does not arise until we think we perceive periodically recurring *accentuation* differences, but [as soon we believe to hear these differences] it comes into existence and in its complete integrity. This already indicates that 2. the periodic repetition of these intensity differences is heard, i.e. the periodic alternation of accented and unaccented

> impressions. […] It is also noted that 3. the impressions are grouped together, usually in such a way that the *main accentuation intensity begins the group*. This grouping has repeatedly been described to me by my observers as an *"internal combination* [innerliche Zusammenfassung]" of the impressions […] In fact, we always estimate the rhythmic unity from the opening rise *[Hebung]* to the final lowering *[Senkung]* (and vice versa). Between the latter and the next rise lies a rhythmically dead time *[rhythmisch todte Zeit]*, in which our attention turns, as it were, from the previous group to the next group. For some observers, 4. the combination of the impressions is at the same time a *temporal* sequencing [zeitliche *Zusammenreihung*], in that the parts of the group appear to follow each other more quickly, while there is a pause between every two groups. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 57-58, my trans.)

But, as Riemann had rightly pointed out, music is not made out of ordinary sounds but of *notes and harmonies*. Therefore, the analysis of the rhythmization process had to take into account the intrinsic rhythmic dimension of the latter. "The grouping of the impressions [was] no longer conditioned solely by quantitative differences in time and intensity" but also depended on the qualitative variation of the "tone sequence," "the inner correlations of the tones," in other words "the musical motive."

> *The characteristics of the musical rhythm formation* can now be determined. They are conditioned by the changes in the *rhythmizomenon* […] Instead of the previous sound qualities [presented in the first part of the section], [we have to deal] now with the tone sequence (the melody and the harmonies). The rhythmic elements which result from this can be characterized from the outset as follows: 1. the grouping of the impressions is no longer conditioned solely by differences in time and intensity; a new type of group formation occurs induced by the inner correlation of the tones *[innere Zusammenhang der Töne]*. It is the musical motive that here makes the groups effective (Phrasing *[Phrasirung]*). (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 60, my trans.)

As a matter of fact, the development of "the musical motive" induced a rhythmic organization of its own. Richard Wagner's testimony was here favorably cited.

> 2. A new kind of variation in the significance of the tones emerges, which in turn causes peculiar rhythmic effects. Certain tones dominate within the group as the culmination points *[Culminationspunkte]* of a musical thought development, while others appear as preliminary and the rest as finalizing, letting the thought fade away. The rhythmic effect of this varying significance of the individual tones within the motive on the performance of the latter causes a special kind of difference in accentuation, which will hardly be reducible to an apparent increase in intensity. […] R. Wagner has also given a number of exemplary observations concerning the rhythmic meaning of the dynamic shadings, that any theoretical consideration of the rhythm may hardly disregard. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 60-61, my trans.)

Laboratory experiments showed that the rhythmic effects of melody and harmony are partly based on a simple auditory illusion. The change in pitch of the notes induces a change in the perception of

their accentuation. “Higher notes seem more intense to us than lower ones.”

> 3. It can be assumed that the purely subjective rhythmization through the change in tone gives greater latitude, and it is probable that there is an objective reason for this in certain fundamental relationships of particular tones to apparent intensity. It seems that higher notes seem more intense to us than lower ones of same objective strength. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 61, my trans.)

Moreover, the changes in pitch may be combined with changes in duration through legato and staccato effects.

> 4. In contrast to simple sound impressions, as made by the usual experimental means [the metronome], the tones allow a constant change in their duration. But in the changing duration of the individual rhythmic parts there is an extremely effective rhythmic element [...] all the rhythmic effects that derive from the so-called articulation of the tones (the legato and staccato) are here to be taken into account. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, pp. 61, my trans.)

Finally, Meumann recalled that the “empty” times or “pauses” were naturally also active constituents of the rhythm.

> A special profusion of rhythmic effects must be attributed to the “empty” times which are not filled with sounds. They come into play partly as cuts, which usually are not recorded in musical notation, at the end of phrases, or musical series and periods; partly as the little “sections” *[Absätze]*, often not even known to the musicians, which at times are periodically induced by the variation and extension of the hand- and finger movements. [...] Especially striking is the rhythmic effect of empty times *[leerer Zeiten]* in the various types of “pauses” *[“Pausen”]*. In this regard, I refer to the excellent description of the effect of the pauses Riemann gave . The causes of this effect of the pauses constitute an important object of the psychological investigation of the rhythm. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 62-63, my trans.)

All this was possible, he underlined, only because of “the higher intellectual activities” allowed by human consciousness and which the psychologists tries to observe, understand and explain.

> 5. Of course, the higher intellectual activities experience a considerable increase through the change of the time signature, the rhythmic motives, and the like. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, pp. 61-62, my trans.)

However, in music, there was no primary cause which could account for the whole rhythmic perception. All aforementioned elements could in turn dominate the rhythmic system.

> In general, it cannot be said of any of the rhythmic elements enumerated above that it is the one that determines the rhythmic impression, although for the hearer the main emphasis and the mode of their distribution are generally the most important. Each of these elements can rather take over the dominant role in the rhythm, at least for a short time. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 64, my trans.)

Meumann finally considered the musical rhythm as a system of elements oscillating between the two extremes of "purely rhythmic relationships" and "melody and harmony."

> It is probable, then, that the perception of time relations as such, when listening to a piece of music, always moves between two extremes: on the one hand, purely rhythmic relationships form a sum of events which clearly mark the progress in time; on the other hand, the tones constantly divert the attention from the time relationships. Therefore, the more the rhythm as such dominates the impression, the more accurately the temporal relations can be perceived and the pure sound effect recedes; the more the rhythm withdraws behind melody and harmony, the less accurate the perception of time will be. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 64-65, my trans.)

The analysis of the psychological process of rhythmization of the sound- and tone impressions was Meumann's main contribution. But he also considered—this time on the pragmatic side—two other aspects of the rhythm problem, which could also be addressed from the point of view of "the player" and from that of "the composer and music theorist."

> The rhythmic phenomenon can be considered from the point of view of the hearer—in this way one arrives at a psychology and aesthetics of the rhythmic impression; it can be viewed from the point of view of the player—this leads to a measurement of the objective achievements of the beat-producing subject; he can finally be considered from the composer's and music theorist's point of view—this leads to a metric system of symbols for the obvious reproduction of the means available to the player. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 48, my trans.)

First, the performance of the player represented "a part of the objective causes of the rhythmic impression of the hearer" (p. 67). But, above all, it was the expression of "motor automatisms," ingrained in the body, that allowed him to produce the intended rhythm.

> A central adaptation to the sequence of movements occurs, and this, of course, concerns the whole process, the time as well as the relations between innervations powers. Since the rhythmic movement probably becomes very easily and rapidly automatic, *the supporting performance of the rhythm seems to be sought in the quick introduction of the motor automatism*. […] The mechanism of motor time estimation, if I may say so, seems afterwards to be an interesting area of investigation. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 70-71, my trans.)

Meumann foresaw a bunch of new possible physiopsychological laboratory experiments concerning the “motor innervations” and the “motor time reproduction.”

> But what immediately interests the psychologist in these tactile experiments is the sum of noteworthy laws of motor innervations, of motor time reproduction, of the relation of rhythm to the latter, and finally, a wealth of interesting details on the conditions of central adaptation and motor automatism which are expressed in the curves. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 76, my trans.)

Finally, the examination of “the composer’s and music theorist’s point of view” allowed Meumann to come back to the question of the notation of rhythm. He insisted that the metric was only a notation system which had been first developed in music by the composers and players in order to help them work and perform and that it should not be followed “slavishly.”

> Since the metric determinations make us aware of what in the rhythmic impression is, they acquire an independent meaning. They become a system of units and rules of combination of such units into larger entities, and thus the means for the development of new rhythmic forms, for the artificial/artful *[künstlich]* development of the forms of the rhythmic impression. But that is also their danger. By being incomplete and ambiguous, like all schemata and symbols, they entail the danger that the player, by clinging to them slavishly, refrains from the rhythmic interpretation of the musical motive. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 72-73, my trans.)

Next chapter