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Rhythm as Form of Psychological Process (part 3)

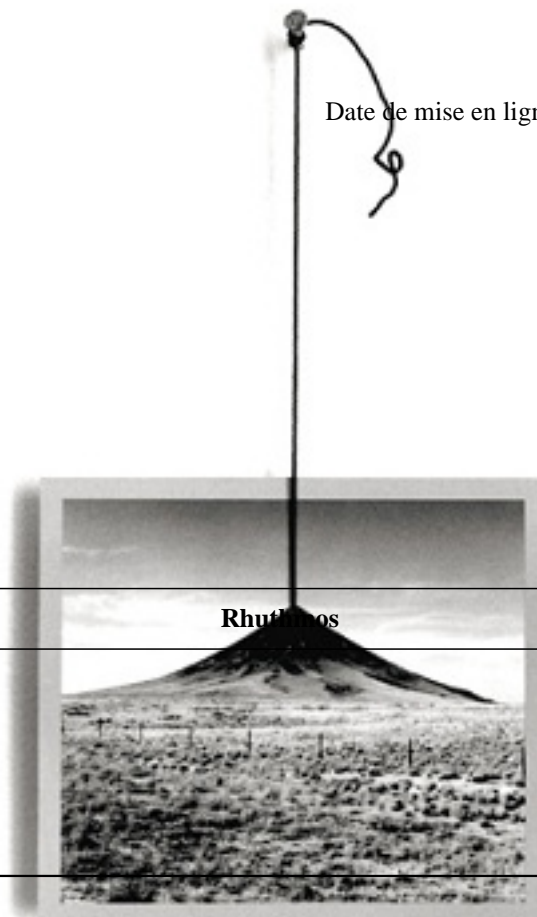
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On the Theories of Rhythm (Meumann - 1894)

Ernst Friedrich Wilhelm Meumann (1862-1915) was a German educator, pedagogist and psychologist. Unlike most of his predecessors, he was not educated as a physician or a physiologist he failed his entrance exam because of his aversion toward practical anatomy but studied philosophy, art sciences, theology, and worked a few years as a private teacher. In 1891, he finally joined the *Institut für experimentelle Psychologie* founded and run in Leipzig by Wundt.

In 1894 the same year as Bolton whose previous publications he mentioned and discussed favorably he published a 113-page long *Habilitationsschrift* (Phd) entitled *Untersuchungen zur Psychologie und Aesthetik des Rhythmus - Research on the Psychology and Aesthetic of Rhythm*. As his young American colleague, Meumann took rhythm as main subject and based his research on experimental observation. For both reasons his contribution was, as his counterpart's, a turning point in psychological rhythmology. A new generation appropriated the concept of rhythm and made it central for at least two decades.

But Meumann was much more skeptical concerning cosmological and evolutionary speculations than Bolton. Instead, quite significantly, he began his study by classifying and criticizing the main theories concerning rhythm that had been developed since the end of the 18th century.

I therefore treat first all those approaches aiming at the formation of a general theory of rhythm that are not specific to a particular fact area [...] Among these I distinguish developmental [*entwicklungsgeschichtliche*] hypotheses, teleological theories, approaches to purely physiological explanations, psycho-physiological and purely aesthetic theories. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, pp. 5-6, my trans.)

I will dedicate some space to this reasoned critique because it was the first ever, as far as I know, to provide such a large synthesis and also because it quite clearly exposed the view, with its lights and shadows, reached by continental psychologists, I mean mostly in Germany and France, at the end of the 19th century.

In stark contrast with Bolton, he first rejected, as sheer speculation, all *developmental theories* aiming at reconstructing the "genesis of rhythm."

The ambiguity of the word "genesis" [*Entstehung*], which can just as well be understood in terms of developmental history, as in the sense of a proof of the conditions which allow the rhythmic impression to "emerge" in each *individual case* of beat perception [*Taktwahrnehmung*], seems to have misled the researchers. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 6, my trans.)

He rightly gave Karl Philip Moritz's *Deutsche Prosodie* as an example of such genetic speculation without, though, being aware of his remarkable contribution to the theory of poetic rhythm itself (for an alternate view, see vol. 2, p. 102 sq.). This is a characteristic of the continental psychology to be both faithful to Aristotle's empiricism, and at the same time, utterly ignorant of his contribution to poetics (on the starting point of this divide in Aristotle himself, see vol. 1, chap. 3).

Moritz states: because of the overwhelming urge to move that drives the sense of power of the human beings (which and when? - the author) to leap and dance movement, one would have accidentally observed the periodic alternation of fast and slow movements, and this rhythmic order of movements, once it had accidentally emerged, would have attracted attention, aroused the feeling of pleasure, been admired and imitated. So was the genesis of the dance to be derived [from this rhythmic order of movements], and similarly the genesis of the meter from the random succession of regularly alternating long and short syllables, as they may occasionally occur in emphatic speech. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 6, my trans.)

There was nothing, he claimed, to gain from this kind of genetic perspective which had unfortunately been imitated many times since. It shed no light on the psychological genesis of rhythm, on the pleasure it brings forth, on its power on us, nor on "the principles according to which the particular rhythmic forms are brought into existence."

This conception of the origin of rhythm from random rhythmic movements has been repeated since in every imaginable variation. There is no interest for psychological research in tracking their evolution. [...] We thus do not know neither what makes a succession of movements or sound sensations into a whole new experience, the "rhythm," nor from where rhythmic movements and sound-strokes get their powerful emotional effect, let alone the principles according to which the particular rhythmic forms are brought into existence. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 6-7, my trans.)

Yet, some of the 19th-century most modern views did not fare any better because they much too rapidly derived rhythm from physiological phenomena. These physiological theories were nothing but "*Phantasieconstructionen* - imaginary constructions" (p. 8).

As an extreme of such genetic constructions, I will only mention the dissertation of Benecke (*Vom Takt im Tanz, Gesang und Dichtung - On the Beat in Dance, Song and Poetry*, 1891) [...] This view brings the genesis of rhythm in connection with certain rhythmic processes of our organism, the breath, the heartbeat and the pulse. Through them we would have gotten acquainted with rhythmic movements, and after having found once pleasure in them, we would have imitated their rhythm with arbitrary movements. Along the same lines, the theories of John Hughlings Jackson [and] Friedrich von Hausegger regard the two-part rhythm as the only elemental rhythmic form and derive the latter from the two-fold division of the breath, [or] the bilateral symmetry of the body and bodily gestures. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, pp. 7-8, my trans.)

A few pages below, Meumann pointed at the quite fashionable surge of so-called "Physiologies" around the middle of

the century. Because of their simplistic view of causality, none of them was useful for scientific research.

Significantly, most of them are produced by writers who are completely ignorant of both physiology and physiological psychology, and who are infected by the modern evil of popularized physiology and work with misunderstood physiological data. The characteristic of all these writings entitled *Physiology of the Art of Sound*, *Physiology of the Melody*, *Physiology of the Counterpoint*, *Physiology of the Rhythm*, etc. is always that any physiological side-effect which is in any relation, be it close or remote, to the psychic phenomenon to be explained, is taken for the "essence" of the latter, while the importance of a descriptive analysis of the psychical state remains unknown to these authors. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 21, my trans.)

A second important way to theorize on rhythm was that followed by the *teleological theories*. Meumann took the example of August Wilhelm Schlegel and the poetic-aesthetic tradition that developed in his wake. According to Schlegel, Rhythm would be beneficial to the organism because it would allow to spare its forces by regulating them.

A. W. Schlegel seems to have initiated the teleological explanation of rhythm, the classics of our poetry have continued it, and modern aesthetics has very often returned to it. According to Schlegel (*Ueber Silbenmaß und Sprache - On Syllable Measure and Language*, S.W. VII), the unregulated frenzy of joy [as well as] the unrestrained expression of pain damage the forces of the organism; those are spared [instead] when the movements are tied by a rule that corresponds to the organic balance [*organischen Haushalt*]. Conversely, our affects are softened when their expression is firmly regulated. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 9, my trans.)

Faithful to a steady distrust in science since the 17th century towards any teleological account in nature, Meumann criticized the substitution of a teleological to a causal explanation that could not be provided by lack of empirical knowledge. He recognized that it could be used as a "heuristic principle" but it entailed "the danger" of believing that the final cause was the efficient one (p. 9). Finally, this kind of explanation did not "tell us anything about what the rhythm is" (p. 10) psychologically speaking that is, because Meumann entirely ignored Schlegel's significant contribution to the poetic theory of rhythm as "complex organization" (see vol. 2, p. 105 sq.), as he had indeed ignored Moritz's.

Meumann accepted, though, certain 19th-century theories which combined the two previous modes of observation into a peculiar "teleological-developmental view" (p. 10). Poetic rhythm was, according to those theories, useful for memorization and helped to organize the psychic life.

Muller and Schumann have recently renovated this kind of theory [...] [by suggesting] that a rhythmically formed word sequence is easier to memorize and remember [...]. In views like these, the "origin" of verse rhythm is sought in a purposefulness of rhythm for the memory, and the development of special metric forms [in] a series of other factors. The superiority of this view over the previous one is that it at least does not merely introduce an external cause for rhythm formation, but rather considers a reliably proven psychic performance of rhythm as a possible cause. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 10, my trans.)

Rhythm as Form of Psychological Process (part 3)

The third kind of theories about which Meumann was openly distrustful was *the aesthetic ones*. Schopenhauer's grand view on World, Art and Will was of particular dislike to him. He mocked, in a few expeditious lines, the way he developed "his theory of rhythm in analogy with architecture" and his use of sonorous concepts devoid of any content (on the analogy between rhythm and architecture in the early 19th-century Idealist tradition, see vol. 2, p. 145 sq.).

Both arts, music and architecture, are transformed, under the strait-jacket of analogy, into a sum of very improper relations. Schopenhauer makes intelligible the aesthetic effect of rhythm by asserting an "alternating division and reconciliation" of the rhythmic and musical motive in the melody; thus giving the reader the twofold task of explaining what is meant by this image of division and reconciliation. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 13, my trans.)

Concerning rhythm, in his *Aesthetik* (1887), Eduard von Hartmann (1842-1906) "nowhere [went] beyond trivial and obvious matter or unproven assertions" (p. 13), while Karl von Köstlin (1819-1894), in his own *Aesthetik* (1869), contented himself with "symbolic descriptions" (p. 14) and "extensive play on words."

The rhythm can either be "completely free (vag)" or "real"; the real-rhythm is "narrow" or "far," "simple," "concretely structured," "even (planus)," "uneven," and then at once "even-numbered" and "odd-numbered." The tone-series becomes "more vivid," "rich in change," "freer, lighter, livelier, more graceful," through the rhythm; it receives "emphasis, weight, significance, momentum," and so on.

I put this presentation of the special power of the musical beat [*musikalischer Takte*] ahead of his general exposition of the concept of rhythm given to us by Köstlin in his *Aesthetics*, since it is characteristic of the previously criticized deficiency of the common aesthetics: extensive play on words instead of a systematic search for facts. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 14, my trans.)

Generally speaking, the 19th-century aesthetics fared quite poorly in its elaborations of the concept of rhythm, confusing it, for instance, with the simple regular division of "a line," and forgetting that rhythm only emerges through a psychological process of "rhythmization."

According to Köstlin, a line divided by points at a regular distance and, for instance, a simple waltz beat would have to be, in the same sense, called rhythm, the former even in a stricter sense than the latter. [...] a series of uniformly recurring impressions of sound should already be rhythmic, as the simplest case of a "division of a time-stretch into sections," while in truth it can only appear rhythmical through subjective rhythmization [*Rhythmisierung*]. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 15, my trans.)

Meumann was not critical about using the term rhythm to describe repetitive spatial phenomena, like in architecture, but he recommended not forgetting that it was a derivation of the only sense that was really rhythmic: the sense of hearing which process the auditory sensations into a whole (p. 15-16).

Rhythm as Form of Psychological Process (part 3)

Rudolf Hermann Lotze (1817-1881) made "a few remarks on the psychological explanation of rhythm" but most of his contribution was dedicated to "the aesthetic side of the phenomenon" (p. 16). Meumann rapidly but quite accurately summarized Lotze's perspective in his *Geschichte der Aesthetik in Deutschland* (1868) and the objectionable reduction of rhythm to regular beat that resulted from it.

Every work of art, according to Lotze, must give a hint of the whole world structure [*des ganzen Weltbaus*] and "present the representation of a particular phenomenon only in the light of the latter." It must awaken in the spectator a "memory" of an objectively real and appropriate world plan and the general law prevailing in it. Three elements "devour each other" when the "general figure of any happening" is to be expressed: first, *general laws*, unreservedly and without any preference for a particular form of the resulting successes, dominate all phenomena; subject to them is then a *multiplicity of real elements*, each equipped with its own inalienable nature, which obeys the commandment of the universal laws without, however, springing from them; an *ordering thought* combines, as a guiding purpose, the manifold noise of the phenomena into the whole of a plan (*Gesch. D. Aesth.*, p. 488). Now, since the harmonically sounding tones and the melody represent [respectively] the "multiplicity of real elements" and the "ordering thought," "the beat" [*der Takt*] is that which divides time into equal parts, and repeat the risings and lowerings of its internal structure [*die Hebungen und Senkungen seiner inneren Gliederung*], always in the same way (?), without regard to the diversity of the musical content." (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 16-17, my trans.)

The rhythm, as synthesized by the consciousness from "the rhythmic impression in the hearer," is much more complex than the mere beat which is only "one of the means by which the composer makes his rhythmic intentions understandable to the player." By contrast to the beat, which is indifferent to "the particular content of the musical motive," the rhythm takes full charge of the latter.

Lotze evidently does not distinguish here between beat and rhythm [*Takt und Rhythmus*]. He intends to describe [...] the rhythmic impression in the hearer, but this description is impeded by the indifference to the particular content of the musical motive. At best, it is true of the measured beat in the score [*in der Notenvorschrift gemessenen Takt*], and as the latter is only one of the means by which the composer makes his rhythmic intentions understandable to the player, it does not play any role in the aesthetics of the rhythmic impression. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 17, my trans.)

Meumann criticized Lotze's associationistic perspective as utterly inadequate to grasp the synthetic nature of rhythm.

But apart from this, Lotze's fundamental mistake lies in the fact that he refers the aesthetic effect of the systemic order [*der gesetzmäßigen Ordnung*], which the rhythm actually brings into the melody [*in die Tonfolge*] though not indifferently to the transformations of the motive, merely to the associative apparatus of the listener. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 18, my trans.)

Rhythm as Form of Psychological Process (part 3)

The fourth class of theories identified by Meumann comprised *the physiological theories* of rhythm. Most of them were naive speculations, like those already alluded to above. But Meumann acknowledged one exception to this rule: Ernst Mach's *Untersuchungen über den Zeitsinn des Ohres - Research on the Time Sense of the Ear* (1865). According to Meumann, Mach had the exceptional quality to consider "the perception of rhythmically ordered sensations" as "a special case of time perception."

The only theory that deserves to be taken seriously among those who are preoccupied with the physiological side of the rhythm is that of Mach. Mach has given his theory two different formulations, in both, however, he takes into account the psychological basis of the rhythm, but the most notable of them is the attempt to find a physiological equivalent of the rhythm with respect to time perception, in that the perception of rhythmically ordered sensations is rightly [considered as] a special case of time perception. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 21, my trans.).

Unfortunately, Mach wrongly associated time perception with the ear instead of the consciousness, i.e. the brain.

The first hypothesis is based on the fact that a (familiar) melody, the rhythm of which is made by tapping on the table, can be guessed. From this Mach concludes that the rhythm is thus bound to a special group of sensations, the "rhythm sensations." He then considers the accommodation apparatus of the *ear* as the seat of the latter, [in other words], the sensations of rhythm would be accommodation sensations of the ear. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 21, my trans.)

Mach himself had given up this first hypothesis but replaced it by a second one, based on the variation of "the specific time-energy of the central organ," viz. the brain, which was not much more convincing.

The hypothesis that rhythm has its seat in the sensations of accommodation of the ear, has been given up by Mach himself; instead he has looked for a central process as the physiological parallel process of time perception and thus indirectly also of the rhythm. [...] The development of the rhythm could then be understood as a result of the efficacy of this specific time-energy proper to the central organ. This hypothesis of Mach is to be rejected because it is superfluous. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 22, my trans.)

Among the most recent physiological theories of rhythm, Meumann also noticed that of J. R. Ewald (1892) who associated, as Mach and Bolton, "the perception of sound beats" with "concomitant bodily movements."

Based on the fact recently made probable by R. Ewald (which, of course, has been again questioned by Breuer) that the tone of our voluntary muscles, especially as far as it serves the finer mobility of the body, is subject to a constant regulation by the arc-labyrinth of the ear, it is quite possible to substantiate hypotheses which provide a certain anatomical foundation to the connection of the perception of sound beats [*Schalltakten*] with concomitant movements of our voluntary musculature. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 24, my trans.)

But he again refused any wild extension of the physiological explanation. Music and poetry could not be accounted for, he sensibly noticed, by mere bodily movements.

The possibility of somehow deriving certain rhythmic forms of music or poetry from those physiological processes [activity of the vessels, cardiac contractions, respiratory activity] must, of course, be rejected from the outset. These are all art-products which could develop only through a random and continuous building process of rhythmic elements in the course of a long development. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 25, my trans.)

The rhythm is not *in* "the organic changes" themselves, he contended. It is always, even when we believe to perceive "organic rhythms," the *result* of an "intellectual process" which "draws successive impressions out of their isolation," and "combine" and "order" them. In this instance, Meumann stuck to the common Kantian epistemology of his time and rejected any realism, be it a materialist one.

At most, one can ask whether 1. the organic changes [*organische Veränderungen*] of this kind account for the specific rhythm [*das spezifisch Rhythmische*] which is introduced into the simple succession with the rhythmic ordering of our sensations; or whether 2. they are merely accompanying phenomena of a rhythm perception, that is, of a substantially intellectual process. The possibility of 1. can be *a priori* dismissed. The succession of sensation [*der Empfindungswechsel*] is transformed into the subjective experience of a rhythmic succession of sensation [*eines rhythmischen Empfindungswechsels*], only on the condition that the intellectual work of combining and ordering the successive impressions draws them out of the isolation of single sound impression. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 25, my trans.)

This point was so important to Meumann that he felt compelled to give empirical evidence of the work of the mind in the production of rhythm, paradoxically using Bolton's most recent studies. This passage is particularly interesting to us because it shows again, as in Wundt who was here duly cited, how Augustine's conception of time (see vol. 1, p. 379 sq.) was retrieved by late-19th century psychologists and integrated into their Kantian theoretical body.

Similarly, Bolton's thirty subjects found in "grouping" [in English] the first and indispensable feature of all subjective rhythm. The conception of the present sensation as a repetition of the previous one and a preparation for the following one, which is characteristic of all perception of rhythm (see Wundt *Phys. Psych.*, II, p. 84), also points to the never-missing participation of higher intellectual processes in rhythm formation [*Rhythmusbildung*]. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 26, my trans.)

The mention of Mach's work allowed Meumann to switch to the last category, the only one which appealed to him: the *psychological theories of rhythm*. For most late-19th century psychologists, Meumann noticed, rhythm is only a by-product of the activity of the mind. It is the result of a "rhythmization of sound impressions" which introduces subordination, co-ordination, combination, i.e. a specific arrangement, between them.

Finally, there are a number of observations that point out, in the most definite way, that the indicated intellectual processes come first in the whole rhythm perception. 1. The subjective rhythmization [*Rhythmisierung*] of sound impressions always introduces into regularly recurring differences in intensity a subordination of the weaker impressions to the stronger ones, a co-ordination of the latter, an internal combination of the weaker and stronger impressions, and so on. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 26, my trans.).

Strangely, given the number of opposite views, according to Meumann, there was no emotion involved in this process. On the contrary: the weaker the "emotional effect," the greater the complexity of the combination. Rhythm was the product of a sheer mental process.

2. These intellectual processes often occur without any particular emotional effect accompanying them (we group, subordinate, inwardly emphasize even in indifferent beats [*Takten*]), and they are independent of the change of feeling. 3. The greatest energy of the inner combination [*Zusammenfassung*] occurs when (with very slow rhythms) there is a very small emotional effect. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 26, my trans.).

As a matter of fact, there is always a possibility to change a given perception of rhythm into another one by simply imagining the latter. This seemed to prove to Meumann the purely intellectual nature of rhythm.

4. In subjective rhythmization [*Rhythmisierung*], any arbitrary change of rhythm is made possible by simply starting imagining another rhythm. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 26, my trans.).

According to Meumann, "the first ever to attempt a psychological explanation of the facts of rhythm" was Johann Friedrich Herbart (1776-1841) in his *Psychologische Untersuchungen (Erstes Heft) - Psychological Investigations* (Vol. 1) (1839) in the section entitled "Ueber die ursprüngliche Auffassung eines Zeitmaßes - On the Original Conception of a Measure of Time" (p. 28). But Meumann did not elaborate further Herbart's contribution, which still was more that of a philosopher than of a real psychologist to which we will have to return one day because of its extraordinary conception of consciousness as a continuous and oscillating flow of ideas or representations. From Herbart, he retained only his re-introduction of the Augustinian motive of time as generated by the mind as memory and expectation.

Lotze reproduces Herbart's opinion as follows: "[...] since the regular or irregular return of the beat strokes [*Tactschläge*] would either satisfy or deceive an expectation in us, there would at the same time be a *reason for the pleasure and aversion* which the latter respectively trigger in us." Obviously, a completely new thought is here introduced, namely that of an expectation from which two different states of feeling may spring again, as soon as they are satisfied or disappointed. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 30, my trans.)

The program of a psychological account of rhythm was then exposed in the following terms. It was clear in Meumann's mind that it remained largely unfinished at the time.

An exhaustive account of the rhythmic facts would have, at any rate, to distinguish between time elements, elements of accentuation, intellectual processes of associative and apperceptive type, emotional facts, organic and motor side effects, and to establish their mutual relation. [Yet,] a theory of rhythm that would fulfill these demands has not yet been given. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 34, my trans.)

Finally, Meumann was brought to the conclusion that the only psychologist who had foreseen such an expansion was Wundt his mentor at Leipzig. Yet, there was still a lot to do. His work had laid the foundations for an application of the general theory to the various "specific rhythmic domains," by which he meant principally music and poetry.

After having realized why the previous attempts at a physiopsychological theory of rhythm remained more than incomplete beginnings, we find, for the first time, in Wundt's theory a conception of the rhythm which satisfies all requirements of the scientific approach. But I believe that this conception, as it complies with the system of representation of a general psychology, is more to be regarded, from the standpoint of a monographic research, as a program for the application of a [general] theory of rhythm to the specific rhythmic domains. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 36, my trans.)

Since I already thoroughly presented, in the preceding section, Wundt's early theory of rhythm and since I will do the same, in the next one, for the revised version he proposed in 1896, I won't repeat it here by going through Meumann's reading, which is completely faithful to his model. I will just notice the way Meumann introduced the few pages he dedicated to it, which tells how the latter was received by his own students and the general scientific community in the 1890s under three main headings: general system of rhythm; individual rhythmic forms; aesthetics of rhythm.

I will articulate Wundt's theory according to three viewpoints, since I will

1. present the system [*Zusammenhang*] of rhythmic phenomena [*Phänomene*] which can be understood as special cases of the general manifestations [*Erscheinungen*] of consciousness. From this, it should follow
2. the development of individual rhythmic forms and
3. the justification of their aesthetic effects. (*Research on the Psychology and Aesthetic of Rhythm*, 1894, p. 36, my trans.)

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