

# Chapter 15

## Idiographic Microgenesis: Re-Visiting the Experimental Tradition of *Aktualgenese*

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*Den Inhalt der Psychologie bilden ausschliesslich  
Vorgänge, nicht dauernde Objekte.*  
(Wundt, 1922)

With the widespread introduction of psychometrics in the late 19th century, the field of psychology had seen a remarkable shift to outcome oriented analyses. The advocacy of pragmatic movements to determine how people are in order to fit them into pre-defined categories that allow for sorting and cataloguing has provided professionals with their tools of trade. Whether it be for the purposes of determining fundamental personality traits (e.g., via the NEO-PI), or for capturing desirable female and male attributes (such as through the Bem Sex-Role Inventory—the BSRI), the quantification of supposedly measurable human characteristics has somewhat abandoned the examination of the actual process of how exactly people think while filling out these questionnaires. For example, if we take Question No. 25a from Rotter’s (1966) measure of Internal–External (I–E) control—“*Many times I feel that I have little influence over the things that happen to me.*”—the precise cognitive processes through which the rater achieved his/her evaluated rating are largely left unexamined. We may wonder as to what the rater is attending to while reflecting on the meaning of “*many times*”? How does the rater construct the notion of “*influence*” and what constitutes “*little*”? And finally, what exactly is conjured up through the words “*things that happen to me*”? Julian Rotter’s reasoning for participants ratings pertains to prior reinforcement contingencies, and examining the actual thought process for each question on the questionnaire is of little importance for the purposes of the measurement. What matters is the outcome, which then can be used for establishing relationship patterns (with a keen eye on causal inferences) with other psychological measurements. Similarly, despite Sandra Bem’s (1979, p. 1048) claim that the BSRI is based on a theory of cognitive processing, the devel-

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opmental progression of actual thoughts in a ‘here-and-now’ context while completing the BSRI is not examined. Instead, what is achieved through the 7-point Likert scales on her measure is the outcome of a train of thought leading up to a supposed generality of sex-typed characteristics.

However, the purpose of this present chapter is not to provide a critique on these various standardized measures, since in many cases this has already been done elsewhere (e.g., for the above mentioned cases, see Block, 1995 for a critique on NEO-PI; see Pedhazur & Tetenbaum, 1979 for a critique on the BSRI; or see Gatz & Good, 1978 for a critique on Rotter’s I-E scale). Instead, my goal is to examine psychological processes, not as static entities but rather in their experienced and developing forms within the microgenetic domain. While standardized measures certainly have their usefulness, of equal interest should be the investigation of how people think in a ‘here-and-now’ context. That is, how do thoughts progress? How do new thoughts emerge? In short, how do we achieve psychological synthesis and what components are involved in this process?

In this chapter, I try to shed light on these afore mentioned thoughts by taking a historic approach that revisits the microgenetic traditions from the standpoint of the early 20th century Leipzig circle of psychologists—thus, in the form of *Aktualgenese* (or actual genesis). Wilhelm Wundt’s work in regard to the later emerging *Aktualgenese* studies is considered as well as the methodological impact of the Würzburg school of psychology. Furthermore, a recount of the first studies for both visual (Wohlfahrt) and auditory (Werner) *Aktualgenese* is provided. Finally, in an effort to expand on the previous studies, the second half of this chapter outlines the psychological components involved during a microgenetic event. These components are examined in detail via narratives from the perspective of synthesis transformations.

## The Origins of Microgenetic Investigations

It is hard to pin-point the exact origins for the idea of Microgenesis, but they certainly pre-date (by a long shot) Heinz Werner’s (1956) first publication of the term in his paper “Microgenesis and Aphasia.” In fact, German psychologists had made the study of mental development (here not in the ontogenetic, but microgenetic sense) a key focus point since at least the days of Wilhelm Wundt (1832–1920), who’s Leipzig school of psychology (known today as the “First School of Leipzig”) became famous for its research on the fundamental processes of the mind (both lower and higher).

Wundt had two primary research programs for psychology: (1) experimental or physiological psychology and (2) *Völkerpsychologie*<sup>1</sup> (Diriwächter, 2004). The former aimed at establishing precise mental laws with regard to direct human experience (e.g., the experience of a changing tone in the environment). The latter pro-

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<sup>1</sup> *Völkerpsychologie* can roughly be translated into social-developmental or cultural psychology. For a full discussion see Diriwächter (2004).

gram largely took a historical comparative analysis of the products of collective mental life (such as language, mythology, or customs) in order to see the workings of our higher mental processes through these objectifications.

It is hard to do Wundt's extensive research program any justices within just a few pages,<sup>2</sup> therefore I will concentrate only on those parts of Wundt's theory related to the later study of *Aktualgenese*.

First and foremost, Wundt's primary interest was in the psychological *processes*: "The content of psychology is formed exclusively through processes, not lasting objects" (Wundt, 1922, p. 26). To understand human psychological processes as we develop within an environment requires an understanding of the nature of our immediate and mediated experiences. To do so, Wundt proposed the "emotional *will*-theory" (*emotionale Willentheorie*) which stood in stark contrast with the logical intellectualized theories of the British associationist camp. It would be a mistake to see Wundt's conceptualization of *will* as standing for some independent being (in the metaphysical sense) that decides and acts upon these decisions. The *will* itself (like any other kind of psychological term) is an abstraction of a holistic (*ganzheitlicher*) complex. That is, it only highlights one particular side of the features contained in human experiences. Instead, the terminology "*will*" is used to indicate the direction of psychological development as the person acts upon the environment. There is no *will* without mental presentation (*Vorstellung*), nor is there any representation without feelings (and vice a versa for that matter). In the case of *will*, it merely directs our attention to the process of wanting something and as such it is a component of our motives and affects. Our affects, in return, consist of a progression of feelings that have a unitary character and whose development can be examined in terms of content or quality. As such, Wundt's voluntaristic<sup>3</sup> school of thought gave feelings a primary role for our willful processes.

Feelings are the very first step in human experiencing of his/her world. As our senses (our physiology) are impacted by the world, feelings such as strain, relaxation, or excitement represent the constant elements of *will* progression. They are the perceived processes and therefore parts of our immediate experiences.

## On the Issue of Causality

It may be injected here the question of cause-effect relationships between physical and the psychological realm. The problem with cause-effect relationships is that, strictly speaking, the relationship must follow the principle of equivalence (that

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<sup>2</sup> The interested reader is directed to Passkönig (1912) who gives a good overview of Wundt's theoretical orientation, as well as to Rieber and Robinson (2001) for a more recent interpretation.

<sup>3</sup> Wundt's term "*voluntarism*" was chosen to differentiate his approach with those who saw feelings and processes of the *will* as merely the sensations of our muscles or organs; in short, to differentiate his approach from the atomism of the British and the intellectualism of Johann Friedrich Herbart (1776–1841). Wundt did not adhere to a strict form of physicalism or idealism. Instead, the term psychophysical parallelism is much more appropriate (see below).

of quantitative “sameness” or homogeneity). Within nature, the conditions for this principle is that as one form of energy disappears (cause) it must be found somewhere else—effect (= conservation of energy). Ideally, of course, it also requires that we should be able to reverse this process into its original form without the loss of energy. The problem is that while natural science has concerned itself with objects in nature, psychology (radical behaviorists not included) has focused largely on our mental processes, which completely lack the requirements for the principle of equivalence. For Wundt, the structure of consciousness is not an addition of elements (e.g., mechanical results), but rather something new; something that is qualitatively different from its parts (see Diriwächter, 2004, 2008).

For Wundt it was clear that mental life has both a physical as well as psychical side. Therefore, Wundt tried not to succumb to the physicalism of radical behaviorists or to the logical idealism of the intellectualists. Yet at the same time, Wundt was not a mind-body dualist either. Instead, he proposed the principle of psychophysical parallelism<sup>4</sup> (Wundt, 1922, p. 394). We cannot say that physical occurrences (e.g., the reception of photons by the retina) are translated one-to-one into a mental experience due to the inherent psychical nature of inner experience which abstracts the physical occurrence. Therefore, we are not able to fulfill the strict requirements of the principle of causality (which requires that only homogeneous processes can be directly causally linked—that is, physical with physical and psychical with psychical). Furthermore, from this point of view it follows—experimentally speaking—that there is no such thing as psychophysical causality as a connecting form. It is important to note that Wundt did not use the principle of psychophysical parallelism to deny any psychophysical interactions, but rather to overcome the limitations of seeing either the body or the mind as the primary substrate (causal factor) for analysis. It would therefore be wrong and misleading to give concepts like “interest”, “intelligence”, or “personality” causal inferences as they are auxiliary terms created by philosophers. Wundt referred to such kind of reasoning as “vulgar-psychology” (*Vulgärpsychologie*).

Instead, Wundt’s ideas highlight the *principle of actuality*. We must take that which is given and known to us and examine it from the vantage point of only known relationships. To this day, we can not yet explain the qualitative gap between the purely physical and the mental realm. Thus, Wundt’s psychophysical parallelism was not a metaphysical statement, but rather one that strictly followed that which is actually given: a physical *and* psychological world *as one*.<sup>5</sup> From this follows that there is just one experience (hence, his non-dualistic view), which however, as soon as it becomes the content of scientific analysis allows for two ways of scientific examination: One which looks at how the contents of our representations (*Vorstellungen*) in objective reality relate to each other (this is mediated), and one

<sup>4</sup> Wundt’s borrowing of this idea from Gottfried Wilhelm von Leibniz (1646–1716) should not go unmentioned. Indeed, Wundt (1917) pays homage to Leibniz’s influence in a specially dedicated monograph.

<sup>5</sup> Perhaps the term “double aspectism” instead of “psychophysical parallelism” would have been better suited to capture this idea. But since Wundt used the latter term, I shall continue to use it here.

which looks at how the experiencing subject (the mind *and* body), amongst all its pre-existing mental content (which are themselves based on past experiences), recognizes the characteristics of the objective world (Wundt, 1922, p. 395). In the later case we speak of investigating the immediate experiences.

Therefore, the questions of interest for psychology pertained to the processes of our immediate and mediated experiences. Wundt's strong interest in philosophy, coupled with his background as a physiologist gave him ample fuel to devise a systematic approach that gave rise to modern psychology; a new branch of philosophy called *experimental philosophy*. For this new approach, Wundt had sufficient practice while studying under Johannes Müller (1801–1858) in Berlin and while working for Hermann von Helmholtz (1821–1894) at Heidelberg.

## Wundt's Methodology

While early psychology relied on “pure” introspection, Wundt's approach stood in opposition to this and instead necessitated scientific instruments to implement what he called experimental introspection. Introspection is still very much in use today, and any questionnaire<sup>6</sup> (such as the NEO-PI, BSRI, or Rotter's I-E scale) that psychologists administer to their research participants can be seen as an alternate form of this old approach. For example, asking a person how he/she feels about something (e.g., on a 7-point Likert scale) or what he/she would do in a hypothetical scenario, or whether he/she believes something is true or false is an approach that requires the person to observe internal processes (e.g., coupling memory with a present context). The problem with this form of introspection is that the person needs to shift his/her attention (*Aufmerksamkeit*) from the external environment to the observations of the mental processes in a completely uncontrolled fashion. The more this happens, the more some internal processes become suppressed or changed entirely. Therefore, the researcher is not sure what exactly he/she is measuring<sup>7</sup> and whether the suppressed or changed internal processes will not be different in real-life scenarios. In short, the lack of scientific rigor in such approaches sheds only little insight into the developmental nature of our internal workings of the mind (for further discussions on this topic see Diriwächter & Valsiner, 2005; on NEO-PI-R in particular see Diriwächter, Valsiner, & Sauck, 2004; Valsiner, Diriwächter, & Sauck, 2004).

For Wundt, the psychological experiment was a means for getting at the psychological characteristics of an individual—in short, our immediate experiences. Wundt

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<sup>6</sup> It should be emphasized that the modern day preference for the use of questionnaires skips entirely the actual processes of introspection and as mentioned earlier merely focuses on outcomes (e.g., what “score” did a participant achieve). As such, modern day introspection via questionnaires is a non-developmental approach.

<sup>7</sup> For example, does the measurement pertain to the boredom of the research participant who is trying to get as quickly as possible through the questions in order to finish the task, or is the participant really interpreting the question as the researcher had in mind?

believed that it was necessary to manipulate the conditions of internal perceptions so that they approximated as closely as possible the conditions for external perceptions. For this, full attention was required. In order to reduce the distortions stemming from memory, the time interval between the original act of perception and its subsequent reproduction for observation purposes could be kept to a minimum. Aside from certain apparatuses required for experimental manipulations, the psychological experiment necessitated two persons: Someone who ran the procedure and someone who acted upon a given task, whereby the latter person often included the person who designed the study. It is particularly in the case of perception studies that Wundt believed an experienced “introspectionist” was more useful than an untrained observer (Passkönig, 1912, p. 9). This was not because one needed special skills for introspection,<sup>8</sup> but rather because an inexperienced participant would devote too much attention to the procedural nature (the novelty effect) of the experiment, instead of on the actual object of study.

Experiments, for Wundt, could only be used for time-limited introspective studies that examined the character of immediate experiences as they occur. According to Wundt (1907, p. 308), four rigorous criteria needed to be met in order to call a study experimental:

1. The observer himself needed to be able to determine the occurrence of the event to be observed.
2. The observer must, as far as possible, be in a state of complete concentration towards the appearance of the stimuli as well as the stimuli’s developmental progression.
3. Each observation needed to be subjected to replication under the same experimental conditions.
4. The conditions under which a stimulus appears must also be examined under a variation of the accompanying circumstances so that the results can be properly ascertained. Thus, it is necessary to entirely eliminate certain circumstances or present them in different intensity or quality.

The time-limited nature of Wundt’s experiments and the focus on psychological processes (instead of mental objects) would set much of the stage for later *Aktualgenese* studies (see below). However, Wundt’s approach was not exclusively experimental. As mentioned earlier, Wundt saw experiments limited to investigating only the immediate experiences as they occur. Since much of what actually occurs in mental life outside the laboratory is multifaceted, it was clear that what was being dealt with via the experiments was just a limited abstraction (an elementary process) of holistic experiencing. In fact, much of Wundt’s work was actually non-experimental in nature. These studies drew upon the results of collective mental processes (such as

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<sup>8</sup> Edward Titchener (1867–1927)—Wundt’s illegitimate intellectual offspring—on the other hand required his researchers to acquire special introspection skills. The fact that he was (and wrongly so) seen as the representative of Wilhelm Wundt in the USA, and that Titchener’s student, E. Boring (1950), wrote what became the primary source book for the history of psychology for a very long time, has done much to misrepresent Wundt’s theories and methodologies in America (see also Danziger, 1980).

language, religion, culture, mythology, and customs) in order to see how they operationally fit as structural configurations of our mental development. Furthermore, in the search for true psychogenesis, Wundt's momentous 10-volume collection of *Völkerpsychologie* (1900–1920) tried to document not only much of collective mental life as related to human psychological functioning, but also to show how the origins of mental development progressed (Diriwächter, 2004, 2006). This approach by Wundt has to be seen as a historical comparative one and not experimental.

## Apperception—The Elementary Form of *Will* Processes

In all areas of Wundt's studies one prominent feature involved in mental processes is that of apperception, a concept that can be traced to the philosophy of Gottfried Wilhelm von Leibniz<sup>9</sup> (1646–1716). Wundt (1922, p. 252) referred to *attention* (*Aufmerksamkeit*) as the condition which is characterized by unique feelings and captures mental content (*psychischen Inhalt*). The individual process which brings mental content to a clearer comprehension was called apperception (*Apperzeption*). The process of apperception finds several definitional refinements depending on its relationship to the given stimulus field. From an objective standpoint on *will*-processes, we can devote attention to numerous objects in our environment, which Wundt coined *Blickfeld des Bewusstseins* (the “looking-field” of consciousness). While this field can be perceived, it is not necessarily apperceived. Thus, that part of the field to which attention is given is called the *inneren Blickpunkt* (inner “looking-point”). Since most of the time we are not devoting our attention to just one object (or point), Wundt generally spoke of the “attention-field” (*Aufmerksamkeitsfeld*), which included several stimuli that capture our attention. If our attention is taken by an environmental stimuli (e.g., a sudden loud noise that unexpectedly occurs), Wundt called this *passive apperception*. On the other hand, when we are prepared and selectively focus on some kind of stimuli (e.g., an optical image projected via a tachistoscope) we speak of *active apperceptive* processes. It is important to note that both passive and active apperceptions are processes of the *will*; in the case of the former it was an unprepared act while the latter was prepared. Thus, with the passive apperceptions we can say that a single impression provides the deciding motive whereas with active apperceptions the willful actions may relate to a number of motives.

The actions of our *will* give the important connecting properties of our consciousness, whose relatively stable content comprises a feeling-complex that is associated with mental representations. As such, apperceptions with their connected feelings become the main carrier of self-consciousness. This in return allows for differentiation between objects. For example, our own body (the physical side of our selves) appears as a differentiated object which can now be studied. The apperceptive process related to self-consciousness is called the “*I*” (*das ich*), which is the end result of a developmental process, not the beginning as many philosophers maintain

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<sup>9</sup> See Wundt (1917) or Ehrenstein (2008) for a discussion on Leibniz's general impact.



(Passkönig, 1912, p. 77). This also explains, according to Wundt, why children's self-consciousness is much more emotional—more feeling oriented—than in later life when the increased development of the *will* and logic takes over.

## Wundt: At the Threshold of Ganzheitspsychologie

At heart, Wundt was a holist. Any claim pertaining to Wundt being a structuralist or a person attempting to get at the atoms of the mind highlights the lack of comprehension about what Wundt was really about. Indeed, Wundt (1922) consistently speaks of the unitary whole of which his studied “elements” are merely abstractions for the purposes of studying the whole. Wundt's holistic orientation is nowhere more clearly articulated than through his principle of creative synthesis (*schöpferische Synthese*) which states that out of all his studied elements arises something new, something that is different from its parts (Diriwächter, 2008). Since the final result of the synthesis is clearly something that is different from the elementary sensations found within, it is a creative act (*schöpferische Tätigkeit*), rather than a passive one (Wundt, 1894, p. 112ff). The idea that within creative synthesis is a process of *melting* seemingly unrelated elements attests to Wundt's key interest in the whole. He uses the same concept of *melting* in all his areas of psychology, particularly within the areas of *Völkerpsychologie* where, amongst other things, he tries to examine the developmental progression of human mentality (the true psychogenesis).<sup>10</sup> The notion of *melting* (instead of the mere summation or aggregation) of elements is probably one of Wundt's most fruitful ideas, and as Hans Volkelt (1962a, p. 18) would later mention, “...it is in this idea of *melting* where associationist psychology dies, and *Ganzheitspsychologie* is born...”

The associationist camp of psychology, with their methods of summing up a series of associations that result in an aggregate of elements has never been able to account for the qualitative gap between this summing-up of elements and the novel, creative character of the whole. Wundt was in some ways even a step ahead of what are usually considered the discoverers of holistic approaches, such as the concept of Gestalt-qualities (*Gestaltqualitäten*) by Christian von Ehrenfels<sup>11</sup> (1859–1932). Contrary to von Ehrenfels who saw the sum of our sensations as the foundation for gestaltqualitative holism (*gestaltqualitativen Ganzen*), thus giving them a self-standing reality outside of human experiences, Wundt included them completely into the creative whole which emerged out of them, at least as soon as they created the whole out of themselves. In that way, Wundt incorporated into the resulting whole all the qualities out of which it emerged, whereas von Ehrenfels saw just one aspect of a holistic experience—that of Gestalt qualities (see Volkelt, 1962a, p. 19).

However, Wundt's school at Leipzig never broke through to a truly holistic approach. He was still too much part of the prevailing *Zeitgeist* of his days that took elementary approaches as the only possible starting point for psychological

<sup>10</sup> See especially Wundt (1912a) for an outline of how this may have occurred.

<sup>11</sup> See Kissinger (2008) for a discussion on the life and work of Christian von Ehrenfels.



development. It was his pupils and assistants who would transform the tenet “from the elements to the whole” into “from one whole to the next”. After Wundt retired in 1917, his successor, Felix Krueger (1874–1948), would transform Wundt’s school into what became known as the second school of Leipzig—that of *Genetic Ganzheitspsychologie* (Developmental holistic psychology).<sup>12</sup> The new direction that the Leipzig school of psychology would take should be seen as the logical next step coming out of Wundt’s prior approach: Examining the transformation of wholes. As mentioned, Wundt had long ago acknowledged that psychical elements do not have any independent psychical existence; rather they are merely products of abstraction. Thus, the question was not how isolated elements form a creatively novel whole, but rather how one whole develops into the next, or how underdeveloped (or primitive) synthesis transform into developed ones (Volkelt, 1922).<sup>13</sup> The whole is never created entirely new, rather it merely presents transformed relationships. It is clear that such a view necessitates a developmental perspective (Krueger, 1915).

In that regard, Albert Wellek (1954, p. 67) once said that we must understand Felix Krueger and the Leipzig school of psychology from a developmentally oriented standpoint, otherwise one has not understood anything. I would like to extend this statement to include Wilhelm Wundt himself. If one does not look at Wundt (as he saw things towards the end of his life) from a developmentally focused orientation, one in fact has not understood Wundt’s theory at all. The difference between the developmental focus of the first school of Leipzig and that of the second school of Leipzig is that in the former case Wundt emphasized the genetic priority of the analytically derived elementary processes for mental experiences, whereas in the latter case Krueger highlighted holistic primitive complexes that develop into new *Ganzheiten* (wholes). Yet both orientations were developmental in nature, just Wundt would not abandon the concept of psychic elements, even for his studies on higher—much more developmentally focused—mental processes that fell under the discipline of *Völkerpsychologie*.

In regards to our consciousness from the standpoint of *Völkerpsychologie*, we can say that there is no mental representation, no feeling, no affect, and no *will* without some form of mental content.<sup>14</sup> If we look to Wundt’s dealings with the higher levels of processes (beyond simple sensory perceptions) we can discover that he implicitly took the melting of components into something new as taking place on all levels of mental processing, from the lowest sensory perceptions to the highest levels of complex apperceptions. For example, in his second volume of *Völkerpsychologie*, Wundt (1912b, pp. 436–458) states that not only can we distinguish between outer (i.e., spoken) and inner (i.e., thoughts) language, but that our

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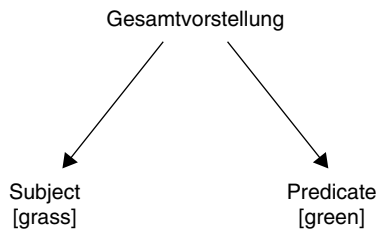
<sup>12</sup> Due to space limitations, it is impossible to discuss in full details the world-wide impact and general theoretical implications of *Ganzheitspsychologie*. The interested reader is therefore directed to Diriwächter and Valsiner (2008) for a detailed discussion.

<sup>13</sup> See also Diriwächter (2008) for a more detailed discussion on the meaning and implications of Wundt’s notion of synthesis.

<sup>14</sup> Of course, the reverse claim, as stated earlier, can also be made: There is no mental content without mental representation, feeling, affect, and *will*.

meaning-making process must follow similar principles as other psychological events. Wundt distinguished between two main types of thought:

**1. Analytic thought**—Here the total conception, the unified idea completely dominates over the individual fragments (e.g., words) that help express this idea. The synthesis here does not relate to something that was previously sorted, rather to that which was already merged in our conceptions. For example, sentence production can begin with a unified idea that one wishes to express (*die Gesamtvorstellung* or whole mental configuration). The analytic function of apperception prepares us to express this idea by analyzing it into components and structure which retains the relationship between the components and the whole. We can consider the following sentence: “The grass is green.” The basic structure in this sentence consists of a subject and a predicate that can be represented with the following tree-diagram:



The idea of green grass has now been divided into its two fundamental ideas (grass and green) with the addition of function words (the, is) which are required in a particular language. The entire process can be described as the transformation of an inexpressible, organized whole (thought) into an expressible sequential structure of words that are organized in a sentence.

**2. Synthetic Thought**—Synthetic Thought, on the other hand, has a clearer separation of the components comprised in our conceptions. That is, synthesis on this level is believed to be more differentiated as the components of thought are not yet clearly linked. In principle, it is the reversed tree-diagram illustrated above in that the synthesis occurs through constructing a mental configuration by linking particular components (e.g., words and grammar). This is closer to the *bricolage* approach described by Holstein and Gubrium (2000), but differs in that the meaning construction must still emerge out of a previously given whole (*eine Ganzheit*).

William James (1893) has long ago noted that “the analytic method will discover in due time the elementary parts, if such exist, without danger of precipitate assumption” (p. 151). For James, as for the Ganzheitspsychologists, consciousness is in a consistent state of change. In both Analytic and Synthetic thought, the thoughts are ‘tainted’ by a particular *Gefühlston* (feeling-tone) which predisposes thoughts into a particular direction, but which itself becomes transformed as the *Gesamtvorstellung* continues to develop. Wundt’s three-dimensional theory of feelings<sup>15</sup> (see Diriwächter, 2008) is particularly helpful for articulating the dynamics of the *Gefühlston* as it continues to progress through the process of *Aktualgenese*.

<sup>15</sup> The three dimensions were: ‘pleasantness-unpleasantness’, ‘strain-relaxation’, ‘calm-excitement’.

## Adopting the Methodologies of the Würzburg School

After Wundt's retirement in 1917, the Leipzig school of psychology would see a radical shift in terms of its views on experimental approaches. A decade had passed since the famous Wundt-Bühler controversy during which Wundt had openly criticized and rejected the research methods of the Würzburg school as being merely quasi-experimental. Wundt's (1907, p. 327ff) attack was based on the grounds that none of his requirements for experimental methodology (see above) was being met by the Würzburg followers. In a reply to Wundt's attacks, Karl Bühler (1908b, p. 97ff) drew attention to the impossibility of exact replication of psychical experiences since the nature of consciousness is that it is ever-changing. Or as William James (1893, p. 154) put it, "No state once gone can recur and be identical with what it was before".<sup>16</sup> Thus, simple psychical experiments, such as those that try to determine the experience of sound associations (such as "leather-feather"), are not replicable since (a) the initial exposure contaminates the later one and (b) using similar sounding associations are strictly speaking not the same. Bühler's own critique on Wundt's approach, the division of psychological investigation into one that aims to get at the lower psychical processes (via experimentation) and the higher ones (*Völkerpsychologie*) was certainly one to which Wundt's later successors lend an open ear. According to Bühler, Wundt's assertion to study psychology via two separate domains (experimental introspection and cultural inspection) and then later combine the two, when in fact both are intimately entwined, was doomed to failure. Wundt's (1908) subsequent reply did little to rectify the situation. He reemphasized the need to examine all psychical elementary processes experimentally first and subsequently see how they fit within the totality from which they were abstracted.

While not much of the Leipzig research methodology changed while Wundt was still in charge, the Wundt-Bühler debate had sparked several lively debates within the Leipzig circle itself. Probably the most fruitful debates within the Leipzig circle were between Wundt and his later successor Felix Krueger (see Volkelt, 1934/1962b), during which Krueger called for a developmental approach that is indivisible between higher and lower psychical processes. Krueger's assertion for an investigation of what is actually given during our experiences—the primacy of the whole—set the stage for an incorporation of the Würzburg approach once Krueger took over Wundt's leadership position.

Thus, it can be said that the methodology of the Leipzig *Ganzheitspsychologie* profited from the methodology used at Würzburg (Wellek, 1947, 1954). After Oswald Külpe, a former pupil of Wilhelm Wundt, had left Leipzig to take on a position at Würzburg, the study of higher psychological functions began to take center stage. The core focus for the Würzburg circle was on the process of *realization*—where dynamic psychological processes become real (Diriwächter & Valsiner, 2005). The Külpe-group followed Wundt's primary tenet of voluntarism: "Circumstances do not rule us, but we confront circumstances,—choosing,

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<sup>16</sup> An idea that has been echoed throughout the ages, as far back as the days of Heraclitus (ca. 540–480 B.C.).

arranging, and directing” (Külpe, 1903, p. 68). Thus, the researchers’ focused their attention on holistic integrative processes of the external and psychological world to gain an understanding of the experience of cognitive processes.

“We ask the general question: What do we experience when we think?” (Bühler, 1907, p. 303). To answer this question, research participants were given a sentence that led to a yes/no answer. This, according to Bühler (p. 304) was the most natural way to get people to think. It is important to note that the yes/no answer was only a means to alleviate the participant needing to formulate his/her immediate response. Unlike Wundt’s experiments, where the yes/no answer was indicative of an immediate experience, for the methodology at Würzburg it presented not data per se, but rather a transition point for the participant to move to immediate reporting of how this answer was achieved. To ensure that the results of the study related to active apperceptive processes (i.e., that the observed events were expected), the participants were told (through the word “*Bitte*”—please) when exactly the procedure was about to start. The initial response time to the posed questions were recorded for the purposes of roughly determining whether the participant remained in a state of tension (attention). Furthermore, the research participants were predominantly trained “thinkers”—professors and doctors of philosophy—to ensure that they were not overwhelmed by the content of the question.

The research participant typically sat at a table with the researcher close by who would (after some initial trial runs) read the relevant questions to the participant and record the time. The participant was asked not to look at the researcher while he was reading the questions (to reduce the impact of facial expressions). The following is an example of the study procedure at Würzburg (Bühler, 1907, pp. 304–305):

- Researcher:** “Can you complete the sentence: The law of association says in its most general form \_\_\_\_?” [“*Können Sie sich den Satz ergänzen: Das Gesetz der Assoziation besagt in seiner allgemeinsten Form \_\_\_\_?*”]
- Participant:** “Yes (5 seconds)—I remembered that lately I have occupied myself much with this, and that I could also formulate it. Also included in my consciousness was that I would have to avoid a lot and would have to give a formula, which has only recently become clear to me (if I would express it figuratively: that I would have to avoid many cliffs, but that I would know how to pass by them). But I did not imagine anything, nor did I engage in mental speech. Then immediately ‘yes’.” [“*Ja (5)*”—*Es kam mir die Erinnerung, dass ich mich in letzter Zeit viel damit beschäftigt habe und dass ich es auch formulieren könnte. Es war in diesem Bewusstsein eingeschlossen, dass ich vieles vermeiden müsste und dass ich eine Formel angeben müsste, die mir erst in letzter Zeit klar geworden (wenn ich es bildlich ausdrücken wollte: dass ich viele Klippen vermeiden müsste, dass ich aber einen Durchgang wüsste). Aber ich habe nichts vorgestellt dabei, auch nichts gesprochen. Dann gleich ‘ja’.*”]

Through this form of guided-introspection (see Chapter 5, this volume), Bühler was able to distinguish different types of thought which, contrary to Wundt’s views, were shown to often be imageless. Here just three examples:

1. *Consciousness of a rule (Das Regelbewusstsein)*—Here Bühler (1907, pp. 334–342) does not mean that participants were thinking about a rule when answering

the questions, but rather that participants were thinking in the form of a rule or through a rule. For Bühler this meant coming to consciousness of a method of solution or how to solve a problem in general.

2. *Consciousness of relations (Das Beziehungsbewusstsein)*—The continuation of consciousness (*Bewusstseinskontinuität*) is based on relations between thoughts. But even more, within a thought itself lays this principle and becomes especially clear during memory trials. As Bühler (p. 343) highlights: “When the only thing a participant can remember to the question *How can the worm in the dust attempt to calculate where the eagle will fly* is: the thought contained an opposition, then we can assume that this consciousness of an opposition was also contained in the first experience as a ‘moment’.”
3. *The “Aha-experience” (Das “Aha-Erlebnis”)*—Bühler (1908a, pp. 12–18) notes that when we encounter rather difficult new thoughts, participants often hesitate a moment and then suddenly, as if by enlightenment, show comprehension. For Bühler his protocols showed with complete clarity that the entry of an Aha-experience was the characteristics of comprehension between two wholes (*zwischen Ganzem und Ganzem*). From this follows that that which needs to be comprehended first needs to become a whole (Bühler, 1908a, p. 17).

What again needs to be reiterated is the focus of the Würzburg studies,<sup>17</sup> namely that of emergence and development of thought processes. The preferred method to “capturing” these thought processes was now turned into a “think aloud” approach. Karl Duncker (1945) would later state that “...the subject who is thinking aloud remains immediately directed to the problem, so to speak allowing his activity to become verbal” (p. 2). It is clear that the participants overt thoughts (i.e., spoken) do not necessarily correspond with the immediate experience of a given phenomena. What it does allow us to see, however, is the restructuring of this original phenomena—a mediated experience.

The originally experienced phenomena genetically precede the specific properties expressed; the latter are developed out of the former. Nevertheless, the process of ‘think aloud’ alone is sufficient to give us insight into the microgenetic processes. The reconstructing of actual experiences is an experience in itself. For Duncker (1945), as well as for the members of the Leipzig school, this process needed to be considered both analytically as well as synthetically.

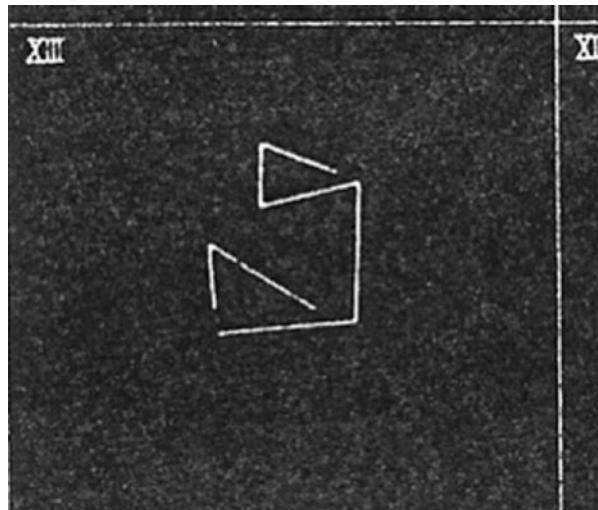
After Wundt’s departure at Leipzig, the Würzburg methods would gradually become adopted and revised within the Leipzig circle (Wellek, 1947). The approach of the Leipzig circle went beyond the much emphasized thought psychology (*Denkpsychologie*) of the Würzburgers who often underemphasized the importance of emotionality contained in participants’ statements. For *Ganzheitspsychologie*, more attention needs to be paid to the transformations (i.e., development) of processes pertaining particularly to feeling states. Thus, the Würzburg approach would be used to center on the analysis of components and the analysis of conditions in regards to our experiences (Diriwächter, 2008).

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<sup>17</sup> The many positive contributions by the Würzburg school on psychology and especially contemporary cognitive science has largely gone underappreciated (see Simon, 1999).

## Early *Aktualgenese* Studies

It is under the context of Wilhelm Wundt, coupled with the impact the Würzburg approach, as well as Felix Krueger's new leadership at Leipzig, that we can understand the emergence of *Aktualgenese* (actual genesis)—and later Microgenetic—research. Trying to further understand what became known as the Gestalt law of *Prägnanz* which emphasizes that “psychological organization will always be as ‘good’ as the prevailing conditions allow” (whereby the term “good” remains undefined—see Koffka, 1935, p. 110), early *Ganzheitspsychologie* research at Leipzig (and elsewhere) focused often on the development of Gestalt percepts. Several studies (see Sander, 1927/1962a) had shown human apperceptive processes were always subject to particular *Gefühlstöne* (feeling-tones), such as the feeling of tension, excitement, and so forth. Furthermore, it lies in the nature of apperceptive processes to proceed in a direction towards optimal clarity and regularity. In what became the first *Aktualgenese* study on visual percepts, performed in what used to be Wundt's laboratories, Erich Wohlfahrt (1925/1932)—a student of Friedrich Sander—examined the mental genesis of visual Gestalts. Through a slide projector, Wohlfahrt projected several figures (such as the one shown in Fig. 15.1 below) to the research participant who saw the figure through an opening in a specially designed tube (*Tubus*). The participant's eyesight was tested and the figure's distance (18.5 cm) and illumination was kept constant, so that all the participant was able to see was a lighted figure on a black background. During 8 trials the figure was successively increased in size (by roughly 25%), so that trial 1 showed a figure that was reduced 40 times in size, whereas in trial 8 the figure was only 8 times reduced from its original size.

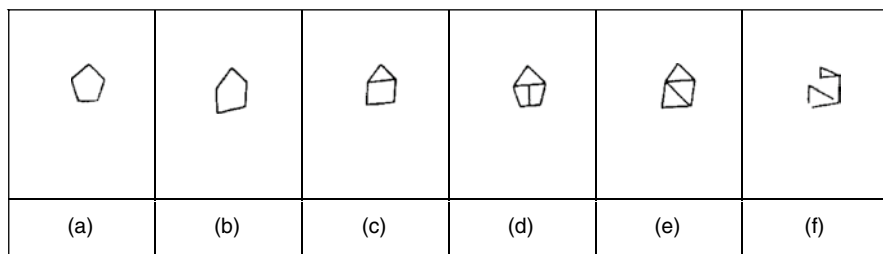


**Fig. 15.1** Figure XIII of Wohlfahrt's (1925/1932) *Aktualgenese* study

Participants<sup>18</sup> were instructed to examine the figure as long as they deemed necessary and to report the characteristics of the figure in all the ways they could, including through drawings as a means of expression. Reporting on each change of the impression during the observation was also requested.

What Wohlfahrt discovered was that during the process of *Aktualgenese*, the participant experiences the emergence of the final Gestalt via successive *Vorgestalten* (pre-*Gestalts*) that are characterized by regularity instead of veridicality. At the smallest visual display participants tended to report a small undifferentiated circular patch which was, however, not homogeneous in nature but rather one “...whose circular contours enclosed an inside characterized by flickering liveliness” (pp. 364–365). The apperceptive processes during the trials were marked by feelings of strain and nearly tormenting compulsion. From one stage to the next, Gestalt after Gestalt emerged from originally simple, regular, and closed pre-*Gestalten* to the final veridical form. Hence, perceptual development follows certain rules. Figure 15.2 displays selected drawings done by one of the participants.

The temporary contours of the pre-*Gestalts* which were characterized by enclosure led Wohlfahrt (p. 370) to refer to these stages as amnions (*Embryonalhüllen*). As can be seen in Fig. 15.2a, out of a diffuse form encapsulated by a circular contour (not displayed here) emerges a simple pentagon-*Gestalt*, characterized by 5 lines of equal length. It is thus more veridical than the previous stage, but nevertheless has not developed to adequacy (since the end-*Gestalt* is neither characterized by regularity, nor by 5 lines—see Fig. 15.1). After the size of the stimulus continues to increase, the regularity of contour starts to give way to increased differentiation of the percept. As the participant, from which the drawings in Fig. 15.2 originate, mentioned (trial-to-trial) “The Basis sinks” (2b), “There is a parallel line” (2c),



**Fig. 15.2** *Aktualgenese* series of the target (see Fig. 15.1) reported by Wohlfahrt (p. 412)

<sup>18</sup> Wohlfahrt (p. 359) provides the family names of his participants, two of them being professors [Friedrich] Sander and [?] Werner. It is unclear to me if the mentioned professor Werner could perhaps be Heinz Werner (see below) who was employed at the University of Hamburg (under the leadership of William Stern) at that time. Yet, if this should turn out to be the case it would provide a very clear and strong link between Werner’s exposure to the Leipzig *Ganzheitspsychologie* approach and his later development of *Aktualgenese* into Microgenesis while he was at Clark University.



“There is also a vertical inner line” (2d), “the inner line is diagonal and if seen independently it appears as if it’s a figure consisting out of triangles, but seen as a whole it appears like (2e)”, “Now everything changed, 3 pieces” (2f)—[“Aha-effect”]. We may note that only at the end (the breaking of the contours) does the resulting apperceptive process coincide with the stimulus, thereby leading to the veridical end-*Gestalt*. Thus, along the entire developmental path was a tendency to regularity, symmetry, and often simplicity, in short, a tendency towards *Gestaltedness*, and this NOT because of the visual stimuli (which had none of those properties).

Sander (1934/1962a, p. 102) would later highlight that the pre-*Gestalts* appear incredibly labile and are filled with inner “life” and movement. They have a tinge (*Tönung*) of non-finality (*Nichtendgültigkeit*) and enclose non-topical qualities. These dynamic qualities and endogenous movements are believed to be due to the tensions between the structural *Gestalt*-tendencies and the demands of the stimulus-constellations. It is only after the end-*Gestalt* that the dominance of the stimulus conditions transforms the lability and instability into a state of relative firmness and calmness. Furthermore, the experienced states during pre-*Gestalts* themselves are especially marked by strong feeling-tones (*Gefühlstöne*), such as tension and excitement, which are *melted* into the entire process (cf. Wundt above). It is only after the *Aha*-effect that the veridical optical image replaces the previous feelings, which then become dull, objective, and cold.

Wohlfahrt’s discovery of the micro-developmental progression during *Aktualgenese* where visual experience proceeds from a lack of differentiation to an increase in regularity, symmetry, straightness, and closedness (the *Gestalt* tendencies) as the stimulus remains weak, has also been found by several subsequent researchers (such as Butzmann, 1940; Dun, 1939; Hausmann, 1935; Mörschner,<sup>19</sup> 1940). It is not possible to discuss further here the implications of these *Aktualgenese* findings in regards to a general theory of visual perception, however, the interested reader is directed to Kleine-Horst’s (2001) “*Empiristic theory of visual Gestalt perception: Hierarchy and interactions of visual functions*” for a full and in-depth discussion.

What remains to be highlighted at this point is that the studies on *Aktualgenese* seem to show psychical development (actual genesis) as mirroring phylo—and ontogenesis (cf. recapitulation theory by G. Stanley Hall, 1923, p. 380). The key characteristic of *Gestalt* development is that it develops out of relatively diffuse and simple forms that are permeated by the qualities of a *Gefühlston* as they are melted into the totality of the experience. As Sander (1934/1962a, p. 103) further points out, these feeling-qualities are not merely accompaniments (*Begleiterscheinungen*) of the process of actualizing a *Gestalt*, but rather are functionally essential for the process of becoming. Without the necessary feeling tendencies of experiencing holistic relationships (from one whole to the next—vom *Ganzem zum Ganzem*) there is even on the higher layers of consciousness no possibility of productive *Gestalt*-formation. The structural, relative robust union of the mind-body totality

<sup>19</sup> In Mörschner’s case a set of consumer goods (e.g., a ruler, a pair of compasses, a protractor, tweezers, etc.) were used instead of meaningless visual patterns.

vis-à-vis the physical requirements of our environment represents the conditional complex for the actuality of experience (as well as for the formation of actions).

The great achievement by the Leipzig circle laid not only in demonstrating the development of initially holistically diffuse forms via a series of more differentiated pre-*Gestalts* until they reach the veridical end-*Gestalt* (a process that usually happens near-instantaneously), but also in the *Aktualgenese* methodology they designed. That is, Ganzheitspsychologists managed to slow down the developmental process so that it could be studied under controlled conditions. The slowing down of the time-continuum via the successive manipulations of the stimulation (be it visual or auditory) allowed the researchers to capture that part of the ‘moment’ which usually tends to go unnoticed. Thus, *Aktualgenese* became a reference to the development in the “here-and-now”; a development that runs parallel to the phylo—and ontogenetic development. A person’s experience transforms from the diffuse to clarity during the process of *Aktualgenese*. As mentioned, the stages of irregularity and unclarity are characterized by feelings of distress and unrestfulness.

The *Reale Ganzheit* (real whole) can be empirically shown by highlighting the experienced totality, the functionality, and structure of the whole (see Diriwächter, 2009, *in press*; for a detailed discussion about structure and hierarchies in *Ganzheitspsychologie*). The *Ideale Ganzheit* (ideal whole) is comprised of a formal (definition based) whole (that can be seen through logical evidence of content) and value orientations (*Wertganzheit*) that have apriority (in the sense of the platonic idea). These ideas follow Krueger’s (1918/1953b) system of the whole (*Systematik der Ganzheit*) and take the unfolding processes empirically full into account.

## Heinz Werner and Microgenesis

The notion of development is one of the few key *Ganzheitspsychologie* characteristics that have been exported to the United States, most notably by Heinz Werner<sup>20</sup> (1890–1964), who in 1933 was forced by the NAZI regime to leave Germany and who would eventually chair the department of psychology at Clark University in 1949 (for a discussion on the “Werner era” at Clark University, see Franklin, 1990). As early as 1919, Werner had made contributions to Genetic *Ganzheitspsychologie* in Felix Krueger’s book series *Arbeiten zur Entwicklungspsychologie* in which he examined the origins and development of metaphors within indigenous tribes.

Starting in 1924, Heinz Werner published a series of articles that investigated structural laws. Two of the publications (Werner, 1925, 1927) focused on musical properties (Micromelody, Microharmony, and the development of Tongestalts) in particular. What Werner found clearly falls under the domain of *Aktualgenese*. Werner (1925, p. 75) wanted to test Franz Brentano (1838–1917) and Carl Stumpf (1848–1936) beliefs that (a) Micro- and macromelody are nonsense and (b) that the experienced process of *melting* (*Verschmelzungserlebnisse*) (which according

<sup>20</sup> For a thorough review of Heinz Werner’s life and work see Valsiner (2005).

to Stumpf differentiates simultaneous and successive melodies) is dependent on the number of vibration-relationships (*Schwingungszahlverhältnissen*) as known from the normal tone-system (e.g., is the octave characterized through the ratio 1:2?). What Werner found was that indeed there are micromelodies (or microintervals), but that there are also microharmonies, which under certain circumstances provide the same impression (despite a completely changed physical basis) as the normal intervals of harmonies. Werner stated that it was possible to create within extremely small tone-sequences of just miniscule vibrations a meaningful melody.

Through a modified *Stern-Tonevariator* that produced whistling sounds and allowed for precise measurement of their vibrations, Werner was able to produce sounds with extremely small (5 vibrations) microintervals. When this was repeated a noticeable dilation occurred in which the interval appeared larger and larger. Out of this, Werner (p. 77) was able to demonstrate an important developmental law—that of increasing *Prägnanz*; of increasing differentiation of the perceptual object (in this case, the increasing differentiation of pairs of tones). But moreover, the noticeable dilation continued until it reached the interval of a semitone. What Werner found here was that it was not the tempo of the semitone, but rather the relationship between lead-tone (*Leitton*) and keynote (*Grundton*) that determined the perceived musical difference. This implied that one tone is apperceived as a keynote and the next as a transition, as a lead-tone, to the keynote. This allowed Werner (p. 78) to demonstrate his second developmental law: that the tone-difference gets drawn apart so long until the most simplistic, musically sensible relationship becomes established (an act of differentiation or *Gliederung*). For Werner, becoming conscious of the lead-tone (*Leittonbewusstsein*) had primacy over the consciousness of melodic intervals.

Werner (p. 82) further found a third developmental law which was intimately connected to the previous two: the tendency of increasing constancy (or permanency) of tones and intervals in the perceived melodic system. The tone-qualities emerge within and through the melodic structure, so that this structure represents the sounding relation as the first basis upon which the tone-qualities are built. Thus, the tones are not self-standing independent entities, but rather live within the given structure which, if changed, gives the tones their qualities.

The three above mentioned developmental laws—that of increasing *Prägnanz* and determination, that of increasing differentiation, and that of increasing constancy—could be shown in both microharmony as well as in micromelody (Werner, p. 86). (1) The harmonies develop out of diffuse impression to *prägnant* (terse) tones. (2) Harmonies appear in a very clearly ordered relationship within the microsystem. Just like for melodies, harmony entails the use of focal points (*Stützpunkte*)—such as a base-harmony—from which the observer orients him/herself towards the other sound-relations. (3) The unfolding of this microsystem is characterized by initial lability of the tonal-totality (*Tonganzen*), but transitions over to increasing constancy of perceived tones and intervals in what becomes a structured system.

In short, Werner's findings during auditory *Aktualgenese* are remarkably similar to those of Wohlfahrt for the visual domain, giving further credence to the genetic nature of human psychic experiences in the 'here-and-now' context. However,

Werner's interest in establishing general developmental laws that apply to all developmental levels (including ontogenesis and ethnogenesis) led him to substitute 'Microgenesis' for '*Aktualgenese*' (Catán, 1986). Both terms imply a slowing down of the time continuum through which the researcher can provoke developmentally early (i.e., primitive) totalities out of which then more complex wholes emerge in order to observe the whole developmental course in process. In the case of Microgenesis, the investigation further attempts to draw upon Wundt's *Völkerpsychologie* ideas to relate the unfolding processes to a historic-comparative context (the true psychogenesis).

## The Revival of Microgenetic Traditions—A Narrative Approach

While Werner was not alone in his interest of Microgenesis (his distant colleagues included Vygotsky and Luria—see Catán, 1986), the microgenetic approach found little interest amongst mainstream American psychologists. However, more recently a renewed interest among a circle of researchers has begun to emerge, covering a broad range of topics<sup>21</sup> from a microgenetic perspective (see Abbey & Diriwächter, 2008).

Furthermore, some recent efforts have been made to greatly expand upon earlier *Aktualgenese* findings by taking a descriptive look at the process of synthesis transformations under visual and auditory conditions (instead of just one or the other) in a 'here-and-now' context (Diriwächter, 2005). For example, in one such study participants were asked to look at an image that progressed (trial-by-trial) through a series of stages ranging from blurry (where it was hard to determine the nature of the picture) to optimal clarity (where the picture—e.g., a landscape—could be identified). The aim here was not so much to see the actualizing Gestalt tendencies, but rather to examine the thought processes (via the 'think-aloud' method described earlier) in making sense of the experience. This introspective method was loosely tied to the Würzburg approach. It was found that at the core of psychological synthesis transformation lie continuous apperceptive shifts that initially stand under a general impression (*Gesamteindruck*), but can also gradually leave the objective conditions (e.g., the displayed stimuli). Synthesis transformation proceeded via analytic and synthetically oriented thought processes that remained subject to the persons *Gesamtvorstellung* (whole of mental content, thus also content of past experiences that are utilized in the process). The latter seemed more the case as the trials proceeded to increased differentiations within the visual projection. Thus, several of Wundt's principles (discussed above), coupled with those of *Ganzheitspsychologie*, became very visible during this process.

The following are purely descriptive narrative excerpts taken during the first trial (where a completely blurry picture of a—at that point hard to determine—landscape was displayed; see Fig. 15.3). The excerpts are verbatim and complete in the sense

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<sup>21</sup> Such topics include visual *Gestalt* perception, the process of meaning making about violence, symbolic self-soothing, daydreaming, and the development of subject-object relations.

**Fig. 15.3** Image of landscape during trial 1 (visual only, original is in color)



that no part has been left out from the beginning of the excerpt to the end. The excerpt is merely divided for the purpose of inserting descriptive comments. The purpose here is to highlight examples of the fundamental components involved during synthesis formation of higher mental processes as expressed by a participant. In short, it examined the microdevelopmental process of meaning-making under the conditions of the study.

At the onset, there is an evaluative result (first impression) of the immediate experience of the perceptual object:

Yes...it's kind of really busy and like, it's hard to, concentrate on it...

The diffuse state is clear, and the participant's first apperceptions center on the difficulties to see any Gestalts in the visual domain. In the strive for clarity, the apperception shifts to that which is recognizable:

...all these different colors are coming out at once...

Note the inherent apperceptive 'push' towards something that is differentiable (colors) within the uncertainty of the image. The diffuse nature of the image reportedly evokes "jittery" feelings (next apperceptive shift) as the participant continues to make sense of the matter:

...I don't know it makes me uncertain, just feel kind of like, *jittery* like, it's *like too much to handle* almost. It's kind of weird

We can here see the first instance of synthesis formation through a series of apperceptions (uncertainty, jittery, 'too much to handle'). The reported feeling-sensations (jittery) are evaluated as being "...too much to handle almost" (then expresses 'unpleasant' dimension). "It's kind of weird" signals an end to the series of apperceptions; a case of synthesis on the level of *Unterganzen* (or sub-wholes).

It should be mentioned here that these *Unterganzen*, which are difficult for the participant to articulate, can be seen as *Vorgestalten* (or pre-Gestalts) that crystallize out of the totality of the experience. That is, they emerge *simultaneously* while the participant is considering the other *Gestalts* (*Sukzessivgestalten*) that emerge in the context of the experimental setting. Both Sander (1940/1962b) and Volkelt (1959/1962c) refer to this occurrence as *Simultangestalten* (simultaneous *Gestalts*) and are hypothesized to be a necessity during the process of *Einführung* (feeling-into).

The process of feeling into a situation is a voluntaristic act and in the case where the visual field is marred by uncertainty (i.e., diffuse) the participant is faced with a certain struggle to synthesize the subjective 'push' with the objective 'reality'.

What can be taken from the next part of the narrative shows that the synthesis does not have to proceed in a ‘nice’ orderly or linear fashion (from A to B). Psychological synthesis in consciousness involves a ‘struggle’ to obtain a clear, emerging property:

...I don’t know... Like, I don’t know, like inside like it just feels like, I’m like, almost like *anxious* in a way

In this case, the participant’s uncertainty transforms into something more concrete (anxious—dimension ‘unpleasant’), while still retaining the inherent vagueness of the matter she is reporting on. The clarity comes by means of an apperceptive shift (reported focus on internal feelings) which then allow for an articulation (anxious). This apperception is then looped to the greater whole of the experienced reconstruction in the following segment:

... Because it’s like so busy that, it just feels like all... jittery...

We here can see a ‘repeat’ (a form of ‘recycling’) of what was previously stated, as if to confirm the crystallized aspects (anxious, busy, jittery) from the first few segments of the narrative. Again, note that the ‘loop’ (busy, jittery) to the previous signifies the ‘push’ by the *Gesamtvorstellung* on to the subsequent reconstruction. The analytic process of this synthesis is hard to overlook, even though the participant is not able to clearly articulate her experience (it’s not a linear process).

During subsequent trials<sup>22</sup> participants not only report a more pleasant and calming feelings (as opposed to the strain expressed earlier), but also begin to let their thoughts wander more freely, that is, away from the immediate task. The following narrative excerpts<sup>23</sup> stem from the same participant as shown during trial 1 above:

## ***Trial 2***

Yes...it seems a lot more calm...

From the outset there is a new *Gesamteindruck* (or general impression) that transforms the participant’s analytic process and reported feeling-tone. The physiognomic perception of the image is no longer excited, but now is calm. Furthermore, an apperceptive shift highlights a differentiation within the image’s pattern as compared to the last picture:

...it seems like the, the shades have sort of changed...

The participant makes reference to potential *Vorgestalten* that are currently apperceived as shades. As the microgenetic development continues in the reconstructive

<sup>22</sup> During the subsequent trials an increased differentiation of displayed content—such as a house and mountains—becomes apparent. In other words, the visual image becomes clearer and thus can be more readily apperceived.

<sup>23</sup> There has again not been left out any part of the transcript (for each of the subsequent trials) from the beginning to the end of the displayed excerpts.

process, the participant not only differentiates but now also reports (articulates) the perceived difference:

...it sort of reminds me of like a mountain...

The *Vorgestalten* (or pre-figures) that crystallize in the diffuse image are, via associations to the past (memory) articulated to resemble mountains. The apperceptions continue to shift and through further associative processes [the consciousness of relations, see above] lead to more articulations:

...it just reminds me of nature...

What comes next is again a closure of a loop; a new synthesis can be detected that connects the particular with the *Gesamteindruck*:

...and being very calm... [→ explicit association →] because of the nature...  
Like just sort of, It makes me like sort of calm

The general physiognomic perception of "...it [the picture] seems a lot more calm..." transforms during the reconstruction into "...It makes me like sort of calm..." Thus, the analytic thought process itself becomes, at times, transformed into one that has synthetic components. It is important to highlight once more that the general *Gefühlston* of this segment does not significantly change, rather that it reaches through all segments of the analytic process by the participant. This analytic process, of course, is not limited to the immediate perceptual field of the participant, rather extends into other realms:

...compared to the last one it's a lot more calming...

"Reminds me of like a mountain", "...reminds me of nature...", or "...compared to the last one..." have all been drawn from different domains contained in the participants memory. These apperceptive shifts nicely illustrate the integration of the past (history) in the present by means of association (or in the Würzburg sense, through the consciousness of relations). Yet, reference to the first reported impression (i.e., calm—a feeling state) continues to persist in the details. It is the only clarity the participant (who has not yet psychologically withdrawn from the activity) can maintain.

...it just reminds me of being somewhere,  
where you are like completely calm...

The diffuse nature of the situation leads to diffuse answers (being somewhere), with frequent reference to the only certainty (calmness) apperceived. It provides the umbrella under which the participant constructs clarity:

...Like the nature [association] and there is like no-one around you.  
And it is just sort of like, just very calming to yourself...

It is interesting to note that "...and there is like no-one around you..." constitutes further exploration into 'uncharted territory'. That is, the experience extends and transforms itself into a situation of clarity (you are in nature where nobody is around you). This small feature is actually a giant leap where the synthesis proceeds, via associations, to an entirely different domain; a story so to speak. But just as quick



the dynamics shift back to the present *Gefühlston*, the synthesis has again looped to the initial feeling state reported (calm).

### **Trial 3**

From the very onset, this trial is marked by an excited *Gefühlston* that is evident through the participant's voice (vocalics) in the first part of her narrative.

[Excited tone:] This, *now I really see* the mountain and then *you see* like, *I see* like little houses with like snow on them...

In a split-instant, the tone of voice transforms into excitement [an “*Aha-Erlebnis*”] and the participants verbal expressions are regulated by concreteness (I now really see what I was not sure about before). It is a moment of insight, where the diffuse has become concrete through articulation (I see a mountain, I see little houses with snow...) and further, through associations, becomes synthetically elaborated:

...*It reminds me of* like, the like *the winter and* like *being, like all cozy inside like a cabin...*

Interestingly, as the image has become more concrete, so are the elaborations (Before: It reminds me of being *somewhere*. Now: It reminds me of *winter and being inside a cabin*). The shift to the concrete brings with it, as Sander would have predicted, pleasant feelings:

...it's a nice feeling...

The reported pleasant feeling extends throughout the participants narrative as her analytic thoughts turn synthetic and lead us to her memories and imaginary events (a form of daydreaming—see Pereira & Diriwächter, 2008):

...it just brings a lot of like, *nice memories...* because, it just seems really like *peaceful* and everything like country side... Just like being really cold and like, going inside...

It is precisely in this next part where we can see the present transform into a reconstruction of the past. A creative transformation is in full process by means of associating the former (cold outside—go inside) to the following (I used to have a cabin...):

I used to have a cabin, on like a lake and we used to go there. And it was always really nice and it was *snow* [i.e., cold] and you'd all go like *inside and* like *get warm* and stuff...

We can further break down this process to fully demonstrate the synthetic progression:

1. I used to have a cabin [apperception 1]
2. on like a lake [apperception 2]
3. we used to go there [motion—apperception 3]

The first three steps are all linked through associations (cabin—lake—motion to get there—*consciousness of relations*). Yet we must keep in mind that these three steps are not atomistic, rather comprise what Volkelt (1934/1962b) refers to as “*ein Unterganzes*” (or a subwhole), as they are inevitably embedded in the larger context of the narrative. “I used to go there” makes no sense without the “cabin” and “lake” which are inevitably linked with the participants previous accounts. This becomes particularly clear when we look at parts 4–7 of the transcript excerpt:

4. it was always really nice [evaluation—apperception 4]
5. it was snow [association to “cold”—apperceptive link]
6. and you’d all go like inside [associations to ‘inside’—apperceptive link]
7. and like get warm and stuff [apperceptive synthesis: cold → go inside → warm]

The participant indicates the completion of synthesis transformation by stating:  
 ...it just reminds me of that...

The loop touches anew the *Gesamteindruck* first expressed in the narrative, by linking image (“*it*”) with particular memory. The situation has become articulated and hierarchically integrated (via memory) and thus the developmental potential for this stage is deemed “completed”. That is, the basis for the next microgenetic development is reached.

Although the picture had not yet reached optimal clarity, it nevertheless sufficed for this participant to report the pleasantness of being able to clearly see that which was diffuse at first. In that sense, the traditional microgenetic process has been completed, although, as we have seen, at this point it is more a *macro-genetic process*.

The excerpts provided above shed some insight into the *voluntary* processes made explicit through the narratives. And at the core of these processes stand *apperceptions*. During the reconstruction of an experienced event, synthesis formation is set by a particular *Gesamteindruck* (the general impression) whereby the *Gefühlston* is clearly carried throughout the process. The components are not unrelated, rather proceed through a series of apperceptions that often overlap, that is, they are often *interwoven* into each other, but crystallize when examined in isolation as done above:

Apperceptions have the potential to shift the developmental trajectory into a different field (which usually still underlies the *Gesamtvorstellung* of the previous) or back to the *Gesamteindruck* of the initial state from which development began to be described (see Fig. 15.4). Thus, we can see that the progression of a sequence of dynamic Gestalts (*Verlaufsgestalten*) operate hierarchically under the principle of simultaneity, since the *Gesamteindruck* is present throughout the process of reconstruction. Thus, synthesis is never created entirely new, rather it represents transformed relationships that are anchored under a particular *Gesamteindruck*, to which they frequently refer back to (loop). There is no ‘new’ without the ‘old’. Each instance where novelty became visible on the narrative level, we see it simultaneously embedded in the layers of the *Gesamteindruck* previously expressed. Hence, we can speak of fluid *Simultangestalten* whereby one (the *Gesamtvorstellung*) incorporates the other (*Unterganzes*).

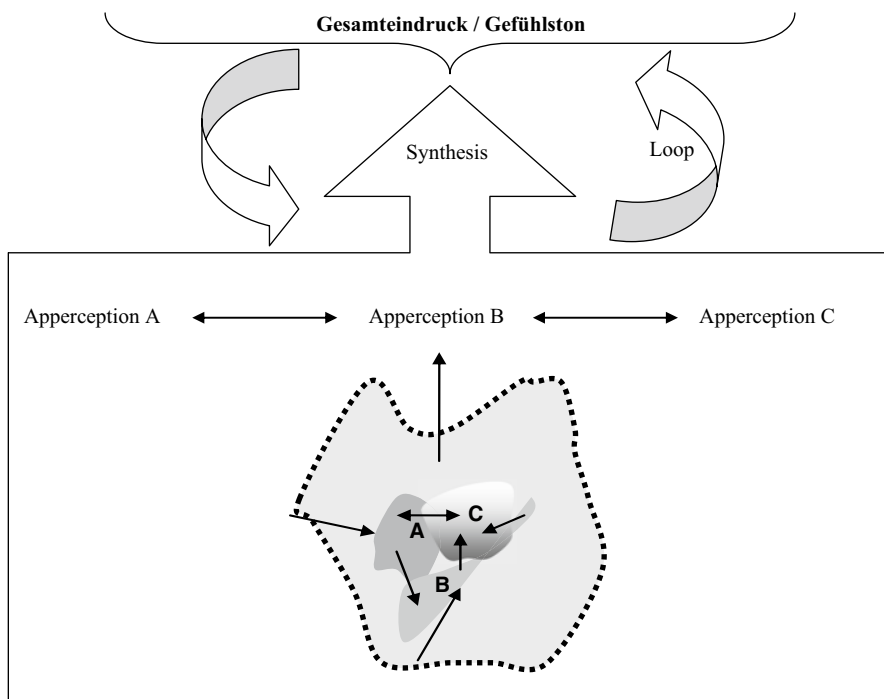


Fig. 15.4 Generic synthesis model

## The ‘Here-and-Now’ Is Not Always “Here” or “Now”

While the flow of time is irreversible (Valsiner, 2000; Diriwächter & Valsiner, 2005), the nature of the experience need not be confined to the present moment. For example, our experience can extend into the past (as well as into the future—teleology). The hypothetical possibilities of *what was* or *what could become* serve to make the present field of experience larger (i.e., by extending its components beyond the present moment in time) and thus allow for multiple microdevelopmental trajectories in the here-and-now context. These trajectories represent the ‘pathway’ along which the synthesis formations become noticeable and are colored by the feeling-tone which the person has expressed. Of course, the developmental trajectories themselves bring possible shifts of feelings expressed as the person feels into (*Einfühlen*) the new (hypothetical) situation that was set up by that person.

That a person’s thoughts during synthesis formation of a microgenetic event need not be confined to the context of the immediately given (e.g., what can be evidently heard or seen in the physical surroundings by the person), but can venture into a hypothetical realm of future directives has been proposed by Volkelt (1959/1962c) some time ago. He saw that the process of *Einführung* into an immediately given

also implies a certain degree of anticipation of future developmental directives so that our feeling into the situation is also guided by our expectation of what the future holds for us. It is important to note that we don't just 'project' our feelings into the event, nor (and that should be clear by now) do we keep our feelings and thoughts differentiated during the future oriented developmental progress. Instead, we place ourselves totally<sup>24</sup> (*Ganzheitlich*) into the anticipated trajectories in order to make them come 'alive'. Without that full integration we end up with nothing but an intellectualized experience that is often far removed from the vividness illustrated in the narratives that emerged out of the situational *Gesamteindruck* of initial experience.

The possibility for future-orientation of the present has also been demonstrated in the microgenetic progression of peoples' daydreams (Pereira & Diriwächter, 2008) and through an analysis of peoples' meaning-making of objects (Abbey & Valsiner, 2004). But naturally, the future directive should not be understood as an absolute of the developmental potential. That is, it does not mean that the future orientation in the present inevitably creates a developmental trajectory the participant then later follows. In a sense, the process of future orientation constitutes a Zone of Proximal Development (ZPD), similar to what Lev Vygotsky already proposed (see Van der Veer & Valsiner, 1991).

Since at any given moment people are faced with the immediate future, it becomes necessarily a part of the present. Hereby the developing person makes use of the psychological functions which are part of the Zone of Actual Development (ZAD), that is, that which has already developed. In our case, we can take this to be the persons dispositions and—in the case of Microgenesis—more importantly, the *Gesamteindruck*.

While the developmental trajectory into the far future will *always* be impossible to project accurately (both for the researcher as well as for the participant), the development of reconstructions through synthesis transformations is based on descriptions and analysis of the progression as it occurs.<sup>25</sup> We do not see into the future, but we see the process that transforms the present moment into the ZPD, which, by the time of our analysis, has turned into the ZAD. The descriptive approach (oriented towards psychological synthesis) analyses how this transformation from present to near future has proceeded in narrative form. After all, narratives provide a good deal of information from which we can see the higher psychological functions at work. In Vygotsky's case, the most distinctive feature for studying developmental synthesis was the semiotic mediation through cultural means.

Apperceptions expressed in narratives, even when synthetically oriented, are based upon some preconceived notion of what is happening in the immediate field (both objectively and subjectively). We use the symbolic meanings of words to translate and objectify our experience. Naturally, that process itself becomes an experience. For our purposes we could say that it *is* the experience if we consider the process extendable to the wider phenomena. While some may see the immediate construction of meaning as the primary reality, we must also realize that the semiotic construction is not singular, rather is comprised of a series of interwoven

<sup>24</sup> "Feeling into" implies attempting to become one—*Einfühlung ist Einfühlung!*

<sup>25</sup> See also Bamberg (2008) for a microgenetic account of identity formation through narratives.

apperceptions that emerge from the *Ganzheitskomplex* (or holistic complex) and synthesize through the fluidity of the *Gesamteindruck* (which is simultaneously present). *Die Ganzheit* supersedes a simple act of construction, which is merely one emerging aspect from the total structural configuration.

It is thus interesting and important to note that the manner in which synthesis transformations occur is observable not only in basic sensations (as highlighted through Wundt's approach, see above), or on the level of simple idea units, but rather also proceeds on the level of general impressions (*Gesamteindrücke*) out of which units (or *Unterganze*) then unfold. Hence, the multiplicity or hierarchical layers of *Ganzheit* reach systemically down to its lower components (*Unterganze*) so that all layers function simultaneously as a harmonious (or sometimes not so harmonious) whole which transforms ever so slightly (through—as was shown earlier—analytically as well as synthetically oriented apperceptions) during the course of the development (see also Diriwächter, [in press](#)).

The general synthesis model is helpful in so far as it allows us to take note of the vital components during synthesis formation and from there begin to establish their functionality. This should provide the cornerstone from which subsequent research can be undertaken in an attempt to further understand the complex qualities of a *Ganzheit*.

## Gefühlston and Gesamteindruck

It is precisely those complex qualities (*Komplexqualitäten*) involved during psychological synthesis that need to be articulated. The most prominent qualities could lead to the impression that the general synthesis model (see Fig. 15.4) highlights the cognitive processes. In a sense this is correct. However, the cognitive qualities cannot be truly separated from the general feeling dimensions, just as the process of synthesis cannot be fully segregated from the *Gesamteindruck* out of which it emerged. Whether we talk about an immediate *Gefühlston* or one that is mediated, in each case it is an intricate (and large) component of the *Gesamteindruck* out of which particular *Unterganze* emerge. In the case of *Gefühlston*, it's the feeling categories that become evident.

For example, if one introduces an additional component—such as a musical piece (e.g., Pachelbel's Canon)—the nature of the *Gefühlston* (see especially during trial 1 of the study reported above) shifts from a negatively to a positively tainted one (see Fig. 15.5).

Similarly, given a constant visual image (e.g., a woman standing with a rather expressionless face), but with different musical pieces during separate trials, where one musical piece is characterized by fast tempo and rather high-pitch (Bach's Brandenburg Concerto No. 3—Allegro = Trial 5) to music with slower tempo and lower pitch (A Nightmare on Elm Street Soundtrack: Sleep Clinic = Trial 6), the corresponding rating of the image (see Fig. 15.6) shifts from pleasant to unpleasant (feelings that the musical pieces naturally attempt to evoke).

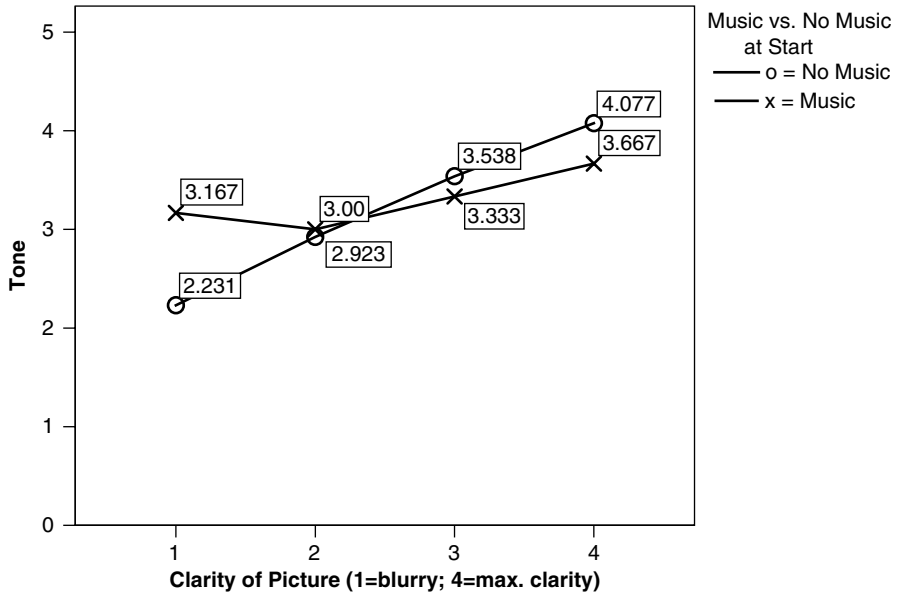


Fig. 15.5 Feeling tone (pos/neg) in participants narratives

It is evident that the illustrated directionality of feeling-tone is not all-inclusive nor does it actively show the transformational processes during synthesis formations. Instead it provides a general overview of the core dimensions of feeling states by participants through a series of trials.

From the very onset, philosophers and consequently psychologists have realized the importance of music to our emotional lives (see Bowman, 1998; Juslin & Sloboda, 2001). Unlike Meyer's (1956) notion that certain emotions occur when listening to music as a result of what we are *expecting* to hear (e.g., tonality), the *Ganzheitspsychologie* doctrine takes the position that emotions and feelings are continuously

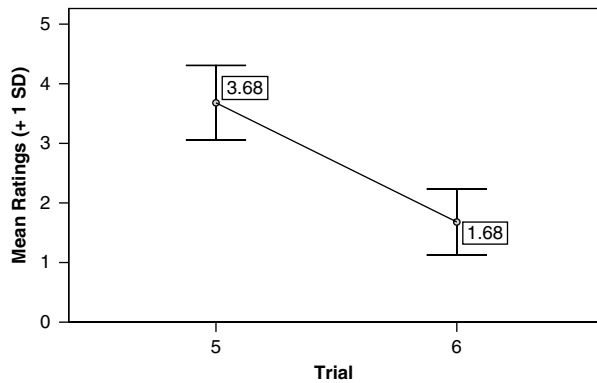
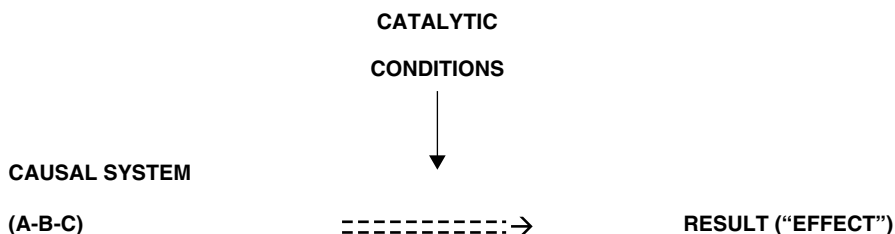


Fig. 15.6 Mean ratings for participants feeling-tones

present and that music helps *guide* these feelings into different configurations (i.e., different feeling states) as part of the complex qualities (see Krueger, 1910, 1915, 1926/1953a; Wellek, 1963). This is not to say that expectations do not play a role in how we feel music. Every melody takes on certain Gestalt configurations that can also be seen as manifestation of the musician's expressed feeling state and the listener can relive these feeling states through *Einfühlung* (empathetically feeling into the sound). Tapping into the melody is becoming *one* (again: *Einfühlung ist E<sub>in</sub>s<sub>in</sub>fühlung*) with the feelings of the creator of the music (Wellek, 1963, p. 207). Music is not treated here as a static variable that "causes" certain emotions or feelings (A causes B), rather music is seen as an aesthetic medium into which a person can tap by focusing on the successive *Gestalts* (*Sukzessivgestalt* or *Zeitgestalt*) that together transform into the experienced totality. The listener needs to actively take part in the music experience through which certain semiotic mediations contribute to the feeling states.

However, although the processes of the various levels are experienced via semi-otic mediations, the experienced totality/whole (*das Wahrnehmungsganze*) of any level is immediate in its uniqueness. Krueger (1910) has long ago noted that the characteristics of the whole, which differentiates it from other perceptual-complexes (*Wahrnehmungskomplexe*) is not bound on having the person perceive the lower layers as separately given components (examining and judging them) as such a dissection would inevitably destroy the uniqueness of the whole.

It has been shown (e.g., Wellek, 1963; Sloboda, 1999) that certain properties in music (such as rhythm, tempo, and melody) can correspond to certain characteristics of our feeling states. Since we are inextricably a part of our environment (in essence, humans cannot be separated from their environment) it could be argued that certain properties of music can be transmitted to our feeling states. Whereby it needs to be reiterated that no such transmission occurs if the listener is not actively taking part in the process. If we attempt to speak of causality (e.g., the music has "caused" me to feel a certain way), then this must be done in the framework of systemic catalyzed causality (see Valsiner, 2000, pp. 74–76). This model of causality emphasizes that there needs to be certain conditions that are present for a particular causal linkage to occur:



In line with the earlier discussion about the issue of causality, the inference that music caused the entire resulting experience is flawed already because there are two forms of experiential conditions (physical and psychological). Thus, the direct causal inference can only be made in terms of the (musical) sound waves that are funneled



through the outer ear to the eardrum where the bones of the middle ear amplify and relay the eardrum's vibrations into the fluid-filled cochlea which in turn causes the basilar membrane to ripple and thereby bend the hair cells on the surface, which eventually transmit that information via the auditory nerve to the thalamus and on to the auditory cortex. The actual experience of the event, however, is both the physical and psychical together as one. Thus, to account for the entirety of the experience (physical and psychical—two qualitatively different aspects), the direct causal inference is limited to the physical side and thus presents only one particular aspect of the analysis of the given conditions.

## Some Final Thoughts

I hope to have shown that the microgenetic tradition has helped to shed much light in the process of psychological experiences, and still provides much fuel for further investigations pertaining to 'here-and-now' contexts. Wundt's work had provided the cornerstone for psychological investigations upon which his successors would later expand. It was through the flexibility of Wundt's successors that other methodologies (e.g., those stemming from Würzburg) could be incorporated to allow for a wider range of psychological studies. It was not the place here to discuss in detail the theoretical credo of *Ganzheitspsychologie*. However, such a discussion is provided by Diriwächter and Valsiner (2008), with a more detailed elaboration on the importance of structure and hierarchies for *Ganzheitspsychologie* by Diriwächter (in press), and on the nature of specific cases involving affect by Diriwächter (2009).

The microgenetic tradition still holds a wealth of potential to further research on the nature of psychological synthesis transformations as well as a number of other areas relevant to cultural and developmentally oriented sciences (Abbey & Diriwächter, 2008). Furthermore, some fairly recent work attempted to apply microgenetic methodology to the field of brain processes (Brown, 2002). Such efforts are vital in helping us establish the necessary details required for a unification of psychical with physical domains. One could assert that the recent advances in the field of neurology ultimately hold the key to providing us with a more complete picture of human mental processing. In that regard, the efforts are certainly underway. For example, in 2007 a small debate ensued on the nature of how our minds wander, and whether the activity in our cortical regions during resting periods pertains to stimulus-independent thought or to stimulus-oriented thought (in the order of publication appearance: see Mason et al., 2007a,b; Gilbert, Dumontheil, Simons, Frith, & Burgess, 2007). While, largely due to methodological problems, the issue of what kind of thought dominates during unconstrained cognitive periods remains unresolved, the debate nevertheless highlights the potentials that the field of neurology has in helping us understand microgenetic development.

The time has come to find additional methods to the convenient standardized questionnaires. It is now left to the research community to take this opportunity provided through the revisiting of 'forgotten' approaches in order to study humans

not from a static (i.e., non-developmentally focused) point of view, but rather from a view that more closely approximates the real nature of life—that of a never-ending unfolding process of *becoming*.

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