



Introspection and the Würzburg School

Implications for Experimental Psychology Today

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Abstract: In the early 20th century, scholars of the so-called Würzburg School departed from the conventional approach of psychological enquiry and developed a unique type of introspection that uncovered promising findings and paved the road for important developments in experimental psychology. Despite their early success, introspection was subsequently criticized and the Würzburg School disappeared soon after its protagonists had died or separated. The classical explanation for this development is that introspection has ultimately been a subjective and flawed endeavor. In the current paper we argue, by contrast, that the way the Würzburgers conducted introspection was in fact more of an extended type of third-person observation, not a genuine form of first-person research. Hence, their approach did not constitute a strong counterweight to the emerging third-person doctrine of the time and there was thus little need to maintain introspection as an independent paradigm. Such methodological aspects, as well as, biographical and historical factors contributed to the decline of introspection more so than the claim that introspection is a flawed approach per se. We suggest that a more direct form of introspection is needed to explore important phenomena within psychology which so far have been often approached one-sidedly.

Keywords: introspection, first-person methods, Würzburg School, History of Psychology

Introspection – the enquiry into one’s own ongoing or immediately preceding mental processes (Schwitzgebel, 2014) – was a prominent research method at the onset of scientific psychology but was soon discredited among the academic community and receded into a state of disregard for several decades. The reasons for this development are complex and by no means solely due to scientific limitations, as we will discuss later on (cf. also Danziger, 1980; Mruck & Mey, 2010). Over the past decades, however, the theme has resurfaced and gained new momentum as several research groups discussed the challenges and opportunities of a more systematic form of introspective research and even used it as a tool to address psychological phenomena that elude more conventional third-person forms of observation (cf. Petitmengin, Bitbol, Curallucci, Cermolacce, & Vion-Dury, 2009; Petitmengin, Remillieux, Cahour, & Carter-Thomas, 2013; Varela, 1996; Weger, Meyer, & Wagemann, 2016; Weger & Wagemann, 2015a, 2015b). These and other studies suggest that introspection can make a meaningful contribution to psychological research, extending and enriching findings that are obtained from a more outward looking, behavior- or physiology-oriented mode of research. For instance, introspective accuracy can be enhanced and through this, subtle

experiential aspects can be uncovered, or conceptual insights can emerge (Petitmengin et al., 2013; Weger & Wagemann, 2015b).

From the very onset of academic psychology in the 1870s – when Brentano and Wundt both published their major works in 1874, laying the ground for two fundamentally different approaches to psychology (Giorgi, 2010) – all the way into the beginning of the 20th century, introspection was used as a standard method of research in psychology. Advocates include William James, Hermann Ebbinghaus, Wilhelm Wundt, and E. B. Titchener but also Franz Brentano and Sigmund Freud, among others. Some of them – Wundt and Titchener in particular – used introspection in a rather narrow sense, with the understanding that its sole function was to explore the most basic elements of a specific conscious experience (Hergenhahn & Henley, 2013; Külpe, 1912a). Opposing this view, the Würzburg School developed introspection further as a research method and also widened its scope of application by extending it to the study of higher mental functions, in particular thinking (Boring, 1953; Külpe, 1912a; Lück, 2002; Mruck & Mey, 2010; Stangl, 2016; Witt, 2010). With an increasing interest in outwardly behavior-focused (i.e., Behaviorist) approaches to psychological phenomena during the first decades of

the 20th century, the prominence of introspection as a systematic form of self-observation receded dramatically – as did psychologists' understanding and appreciation of the first-person attributes of various phenomena (note that behavior-focused research was in a certain sense prominent already before Watson, as is evident from the focus on externally measurable – including physiological – dimensions; cf. Brentano, 1874; Burnham, 1968; Külpe, 1893a; Wundt, 1908). In turn, fundamental questions remained (and remain) unaddressed in all branches of psychology – such as the question concerning the qualia of consciousness or attention; the nature of the self; or the mind-body problem; among many others. For all these issues, an exploration into the qualitative dimension of experience would be appropriate – a dimension which is, by definition, of a first-person nature and can only be studied directly from a first-person point of view.

An important question hence emerges: Beyond the era of the Würzburg School, why was a genuine first-person form of introspection not developed further and in a more systematic manner to allow for it to grow beyond its initial immaturity? It is true: since the Würzburgers, a number of approaches have been developed to study the qualia of experience. These include the micro-phenomenological interviews by Petitmengin and colleagues in which subtle facets of an experience are progressively uncovered through a specific interview technique (e.g., Petitmengin, 2006); Varela's neurophenomenological approach in which measures of neural activity are combined with phenomenological first-person descriptions (e.g., Lutz & Thompson, 2003; Varela, 1996); or the descriptive experience sampling method – a procedure in which participants, whenever prompted, answer questions about their current state, including information about situational, behavioral, and experiential parameters (Hurlburt & Akhter, 2006). But while these methods seek to address the issue of experience, they do so from the perspective of the (outwardly looking) experimenter, qualifying them more as third- or second-person approaches, not as a first-person approach in the traditional sense. The question hence remains: Why have no systematic attempts been made to study the qualia of first-person experience in (experimental) psychology?

Most psychologists would notoriously refer to a number of alleged deficits of the introspective method such as the claim that it is subjective and unreliable; that it is by definition inaccurate due to its post hoc nature; that the observed processes/contents are altered by the act of observing them (problem of reactivity); that introspection demands a split of attention toward the object of experience and the experiencing itself (ego split) or that introspection is based on a privileged and hence non-falsifiable access to one's own experiences (lack of verifiability; for an overview, see Petit-

mengin & Bitbol, 2009; Petitmengin et al., 2013; see also Morf & Koole, 2014; Schwitzgebel, 2014; Witt, 2010).

We generally agree with the skepticism concerning introspection as long as a naïve and immature form of introspection is used; but we disagree with the claim that any type of introspection should inevitably have to remain naïve. To explore its potential, it is meaningful to illuminate the approach of the early introspectionists, consider its strengths but also limitations and then investigate as to whether and how it might be possible to move beyond those limitations. In our paper we seek to explore and illustrate the merits of the Würzburg approach – and explore what they could have achieved additionally, had they developed it further; and we also wish to point to fundamental limitations in their early understanding of introspection and claim that another paradigm shift would have been needed to come beyond these limitations. A review of original writings and historical accounts reveals that the abandonment of introspection was a result of the spirit of that time, of personal interests of the researchers themselves as well as of historical events rather than being an indication of fundamental problems of the method. Introspection became increasingly constrained by the methodological standards of third-person research as it developed from a principal epistemic tool discussed by philosophers to an exact research instrument in psychology. As the Würzburg School conceived introspection in a comparably broad sense and its members were among the last who used it as their primary research method, this article will focus on their particular approach.

A Brief History of Introspection

Traditional British empiricists, especially John Stuart Mill and the Scottish School, saw introspection as a valid and natural method to gain knowledge about the mind – for them, consciousness and the mind was one and the same thing (cf. Danziger, 1980). Hence, there could in principle be no error in introspection. This view was also supported by Locke, a prominent empiricist. According to him, having a conscious experience also means being aware of it (Schwitzgebel, 2014). It should thus be possible to know the world (which is represented in one's mind) by trusting one's conscious experience and accessing it via introspection.

Going beyond the British empiricists, there are two broad streams in psychology which understood psychology and its primary target differently – and hence also conceptualized introspection differently. One branch used a naturalistic approach that was based on psychophysical parallelism advanced by Helmholtz, Müller, and Fechner, adopting experimental procedures from the natural sciences, especially from physiology. It was Wundt who played a major

role in establishing experimental psychology on psychophysical grounds using a narrow kind of introspection, as described below. The phenomenological movement since Brentano (see Spiegelberg, 1971) formed a counter-approach to this naturalistic development and took an experienced-based first-person stance to describe psychological functions, hence the name “descriptive psychology” (Moran, 2000). We will first briefly outline the Wundtian approach before assessing the ideas behind the phenomenological approach. Wundt based his special psychophysical introspection on empiricism. But in Germany he had to justify what for British Empiricists was quite natural (Danziger, 1980). There is a rather important distinction to be made between the assumption that introspection merely provides access to conscious states on the one hand; and the claim, on the other hand, that introspection can be used as a scientifically valid research method to enquire into mental phenomena (i.e., psychological states and processes). According to Herbart and the Hegelians, for instance, mind was not the same as consciousness. According to them, introspection has access only to consciousness – not to the mind – and introspecting on mental phenomena might therefore be inaccurate and unreliable. Wundt accepted the criticism that introspection may not necessarily yield the “truth.” Still, he thought that conscious experience can be a valid basis to gather knowledge. Otherwise, psychology would be solely physiology (see also Traxel, 1985).

For this purpose, Wundt differentiated between *innere Wahrnehmung* [inner perception] and *Selbstbeobachtung* [self-observation, Boring translates this with the prevailing term “introspection”] (Boring, 1953) – which are both instances of consciousness. This distinction was maintained by the members of the Würzburg School, although they interpreted these terms differently (see, e.g., Bühler, 1908; Külpe, 1919). For Wundt, introspection in the form of inner perceptions includes immediate experiences which – due to their immediacy – are “valid” and hence relevant to science (Boring, 1953) since they are not distorted by attention directed toward them (Schwitzgebel, 2014). Self-observation, on the other hand, is seen as unreliable because conscious psychological processes cannot be simultaneously executed and observed. Observation inevitably interrupts the process – at which point remembering already sets in. Remembering, however, can be distorted (Wundt, 1888). Thus, Wundt developed experimental methods to make the introspective data of inner perception reliable by including planned and controlled variation (Schwitzgebel, 2014; Wundt, 1888, 1907). This, however, left a fairly limited form of introspection, one that was applied mainly to conscious sensations and elementary feelings (Hergenhahn & Henley, 2013; Kusch, 1999). In addition, the participant had to be rather passively alert

regarding whether a sensation or feeling is present in consciousness or not. “In most instances saying ‘yes’ or ‘no’ to an event was all that was needed, without any description of inner events.” (Hergenhahn & Henley, 2013, p. 252). Thus, higher order cognitive functions were excluded from experimental investigation. Here lies the basis for Wundt’s elementism and associationism in which he tried to identify so-called elementary units which were thought to be the most basic sensory experiences and were no further dissectible or analyzable. They were considered to be the basis out of which all complex psychic functions and meaningful concepts emerge via simple associations (Mausfeld, 2016).

Such a narrow approach was opposed by three different schools: Act psychology, Gestalt psychology, and the Würzburg School, all of which also used introspection and brought it to a final state of general – though short-lived – recognition. Act psychology placed an emphasis on mental acts and originated in Franz Brentano’s philosophy. It put inner experience as its fundamental and core research object in order to find a solid, non-naturalistic ground to base psychology on. Hence, in contrast to the psychophysical approach which is only concerned with the contents of sensory perceptions (e.g., intensity of a perception; hence it is called content psychology), act psychology deals with conscious acts, classified into presenting, judging, loving, and hating (Brentano, 1874). It identified intentionality as a core characteristic of psychic processes (Aktpsychologie, 2017). Psychological acts are intentional in the sense that they relate to a respective content; that is, they are about such content (Brentano’s criterion of “aboutness,” e.g., hearing is always hearing something; Brentano, 1874; Brentano & McAllister, 1995). A first-person experience (i.e., immediate experience) of such an act can lead to immediately recognizable or *evident* experience (Meyer, Hackert, & Weger, 2016). According to Brentano, these acts have to be described (descriptive psychology) before they can be explained (genetic psychology). The goal is to find out the characteristics of conscious states and how they are interrelated, in order to show how they constitute the whole of human consciousness and the genuine features of intellectual life itself (Baumgartner, 1989; Feest, 2012). Act psychology influenced the Würzburg School in that Brentano saw inner experience as a necessary and fundamental starting point from which to research thinking processes empirically (Walach, 2013). Likewise, several important writings of the Würzburg School are based on Brentano’s investigations (Baumgartner, 1989).

A century since Brentano’s death, his name and legacy is largely forgotten in mainstream psychology; and yet, his impact was significant, as he informed a number of scholars and approaches including Husserl’s and Merleau-Ponty’s phenomenology as well as the different contemporary (neuro)phenomenological approaches represented by

Varela, Lutz, Petitmengin, and others (Bitbol, 2012; Froese, 2011; Kaiser-El-Safti, 1996). Today's approaches thus are part of a historical lineage which developed in parallel to the Würzburg School with partly shared – although not completely overlapping – influences.

Prior to honing in on the Würzburg approach, we wish to briefly speak to (some of) these other approaches, in particular phenomenology, to illustrate this historical lineage and its relation to the Würzburgers. Phenomenology, “the systematic study of structures, qualities and dynamics of first-person experience” (Froese, 2011, p. 631) was initially described by Husserl as a form of descriptive psychology (Giorgi, 2010; Münch, 1998). After his transcendental turn, he distanced himself from this view and rejected empirical psychology (Bayne & Montague, 2011). Here we will take only his early view about his realistic phenomenology into account, since it was this early view which influenced many phenomenological psychologists and philosophers such as the Munich School but also the Würzburg School (interestingly, most of them did not accord to his later published *Ideas*; Giorgi, 2010; Münch, 1998). Even more so than Brentano, Husserl put the emphasis of his phenomenology on the intentionality of consciousness. As Brentano, Husserl argued against a naturalistic conception of psychology, meaning that psychology should not eliminate genuine psychological features merely to open it up to scientific enquiry (Feest, 2012; Moran, 2000; Spiegelberg, 1971). But he was also opposing psychologism, that is, the “idea that the laws of logic are reducible to laws of psychology” (Gallagher & Zahavi, 2008, p. 2). Husserl intended a phenomenological analysis of consciousness in an effort to describe fundamental axioms regarding its nature and structure. For him, phenomenology is a pre-science to psychology (but also to logic and any other sciences; Bayne & Montague, 2011; Münch, 1998). It is an approach of entering into the “things themselves” which ultimately reveal themselves in their formal or conceptual nature only in our consciousness. We must first describe them properly before researching them in a specified way based on such insights (which, then, can in fact be experimental). No existing knowledge or theories should be taken into account, since this would inevitably result in circular reasoning (Precht, 1996). Thus, descriptive psychology or phenomenology is a basis and the starting point on which any science should be founded. Therefore, phenomenology sees “the fundamental and inextricable role of subjectivity of consciousness in all knowledge” but it “is not a wallowing in the subjective domain purely for its own sake” (Moran, 2000, p. 15). In contrast to psychology which takes consciousness as its object, phenomenological knowledge is a special type of consciousness; it has to remain in consciousness (Schuhmann, 1982).

A school closely related to Husserl is the Munich School. It originated under Alexander Pfänder and was initially

independent from Husserl but later developed in close contact with him – after the publication of Husserl's *logical investigations* (Bayne & Montague, 2011; Geiger, 1911; Husserl, 1900, 1901; Spiegelberg, 1971). Both schools were much more in line with Husserl's realistic phenomenology than with his transcendental phenomenology. Consequently, their intent was to get an unbiased description of the “ideal” of a certain phenomenon, to find out the essential parts, to reach a universal empiricism (Geiger, 1911; Spiegelberg, 1971). As Pfänder notes, psychology researches genuine psychic conditions of humans but phenomenology wants to find universal truths about consciousness. They, too, wanted to get a description of conscious states without explaining them (Schuhmann, 1988). They used the method of inner intuiting, which is conceptually different from introspection. Intuition, according to them, seeks to acquire knowledge about a phenomenon and its underlying laws by understanding a single case (given in consciousness). Inductive reasoning on the basis of similar reports from different subjects (as the Würzburg Scholars have likely done) is no part of it (Geiger, 1974). Further, introspection presumes a distinction (though a correspondence) between the inner (mental) and the outer (physical) world. Phenomenology, by contrast, looks at the “things” from a first-person view but this does not necessarily mean “looking within” (i.e., introspecting) but attending toward things/phenomena and intuiting on their essentials leading to a philosophical (e.g., logical) analysis (presumptuously locating the phenomenal in the mind is a metaphysical fallacy; Gallagher & Zahavi, 2008). “(It) remains an investigation of reality ... not some otherworldly mental realm.” (Gallagher & Zahavi, 2008, p. 23). It does not primarily entail describing inner life in all particulars but discovering the invariant components of the “things” which give them their meaning (Geiger, 1911). Therefore, its focus is on philosophical reflection and techniques such as imaginative variation; the special technique of reduction was later partly applied (Bayne & Montague, 2011; Geiger, 1911; Spiegelberg, 1971). Still, they explicitly used retrospection (introspection past the experience), as indicated in their writings (Pfänder, 1963; Schuhmann, 1988).

Moving on to the core approach under enquiry here, the Würzburg School can be understood as the experimental branch of act psychology (Giorgi, 2010). To the Munich School as well to the Würzburg School, the same elements in the *logical investigations* were relevant (Herzog, 1997). The Würzburg School (like the Munich School) had the intent to conduct primarily descriptive psychology, – especially some of the school's core protagonists, namely August Messer, Karl Bühler, and Oswald Külpe (Bühler, 1907; Külpe, 1910; Messer, 1912; cf. also Baumgartner & Baumgartner, 1997). Messer, in particular, considered phenomenology to be valuable to descriptive psychology, as it

clarifies psychological concepts and their relations to each other (Messer, 1912). Bühler stated that the *logical investigations* stimulated him to do experimental investigations of thinking (Herzog, 1997). Bühler and Messer wanted to do pure psychology and verify Husserl's results of the *logical investigations* (this was, in fact, a counterprogram to Wundt; Bühler, 1907; Herzog, 1997; Münch, 1998; Ziche, 1998). Husserl criticized this harshly (Feest, 2012; Münch, 1998). Pertaining to the topic of thinking, Husserl's investigations could serve as a theoretical framework (Herzog, 1997; Münch, 1998). In his *logical investigations*, he sought to lay out the conceptual groundwork for an empirical investigation of cognitive processes (Münch, 1998). Some critiques, including Moritz Geiger, stated that Bühler interpreted the results of his introspective research on the basis of Husserl's ideas (Ziche, 1998). Naturalistic explanations for the findings of the Würzburg School were not taken into account by its members (Messer, 1908; Ziche, 1998).

Despite this mutual recognition, other Würzburgers, especially Marbe and Watt, were more critical of the Husserlian approach (Giorgi, 2010). Marbe explicitly criticized the approach of Moritz Geiger, a member of the Munich School, as outdated. For Marbe, philosophy was only of avail to the extent that it was instrumental to science, otherwise not useful at all (Ash, 1999; Geiger, 1911). A distinction between the schools can be seen in their intent. For Pfänder, phenomenology is a precursor to theory but no theory itself (the intent is to do a pre-science; Münch, 1998) whereas the Würzburg School certainly did develop theories on the basis of their introspective findings (the intent was to use introspection in an experimental setting; in addition, it was already based on the theory of experimental psychology). Moreover, for Geiger, experimental research should only be done after preliminary phenomenological work (Bayne & Montague, 2011).

Taken together, despite sharing the influence of Brentano and apart from the fact that both took intentional conscious states as the primary research object, phenomenology is different from introspective psychology as done by the Würzburg School. The former seeks to find invariant truths about consciousness to base other sciences on. The latter seeks to describe psychological acts first in order to explain them afterwards (e.g., with experimental or physiological psychology). Such a difference – which does not always imply sharp contrasts in the actual practice of looking within – is in line with the notion by Varela (Varela

& Shear, 1999) that the difference between introspection and phenomenology is more one of intent than of method. Also, as Moran (2000) notes, most philosophers today consider phenomenology as a trained form of introspection. Another point is that the experimental approach of the Würzburg School would imply already an a priori correlation between physical stimuli and inner experience (Kamleiter, 2001). Theoretical preconceptions were not taken into account for the Munich School – at least they tried to avoid them to the extent possible.

The Würzburg School and Their Protagonists

The Würzburg School was a group of psychologists based at the University of Würzburg during the beginning of the 20th century (later some of them worked also in Bonn and Munich). What made them a coherent group was their research topic and methods. The members were interested in higher-order-cognitive functions,¹ especially in how thinking works, that is, its preconditions, contents, and underlying mechanisms. Their primary research method was a systematically controlled introspection in that participants were asked to solve a problem or fulfill a task, observe their own thinking and report on it subsequently (Mack, 2005). The Würzburg approach was informed by the Brentanian-Husserlian legacy by way of the objects under investigations (i.e., psychological acts) and the methodological views (i.e., descriptive psychology); but it was also influenced by the Wundtian legacy in that the Würzburgers sought to pursue an experimental approach.

The motivation to investigate higher order cognitive functions grew out of a desire to come to terms with opposing views about these complex phenomena (Marbe, 1945). The need for investigating those functions became especially apparent when the early work of the Würzburg School (Mayer & Orth, 1901) led to a criticism of the dominant associationism of that time (a common criticism especially among those who later represented the Würzburg School, Külpe, 1912a). Until then, the predominant doctrine was that higher-cognitive-processes were impossible to investigate experimentally (Lück, 2002). For instance, Wundt stated in his *Völkerpsychologie* (1904) that the experimental method can investigate psychological processes only under

¹ The Würzburgers sought to investigate processes pertaining to thinking rather than contents of thinking, that is, thoughts proper. Külpe himself made such a statement: "I differentiate 'thought' from 'thinking'; thoughts are 'contents,' thinking in its various forms of meaning, judging, concluding, etc., is a matter of act: or function. The acts are not, for me, 'relations obtaining between contents,' but are actual expressions of the ego, which can be observed and known only after the event. . ." (personal communication between Külpe and Ogden, 1912, as cited in Ogden, 1951, p. 16). One of the more important points of the current article is that the Würzburgers investigated only contents of thinking – at least, their results were descriptions of contents rather than of processes. Hence, throughout the article we will speak of contents or more generally of functions rather than of processes. To anticipate, Külpe rates Ach's *Bewusstheiten* as "contents of thinking" (Ogden, 1951, p. 17).

simple circumstances which implicates that the experimental method is only valid for basic processes of consciousness – and thus, according to Wundt – not for studying thinking (Wundt, 1913; see also Kusch, 1999). Oswald Külpe argued against such a claim and sought to establish a method to investigate higher cognitive functions in an experimental manner, together with other members of the Würzburg School. In this sense, the Würzburg School pioneered today's cognitive psychology (Hoffmann, Stock, & Deutsch, 1996). In the following, some (not all) of the main protagonists of the Würzburg School will briefly be introduced in order to demonstrate their similarities relating to method and content.

Oswald Külpe (1862–1915) is considered to be the father of experimental thought psychology (Bitter, 2011) and was the founder and head of the Würzburg School (Ash, 1985; Humphrey, 1951; Lindenfeld, 1978; Mack, 1994). In contrast to Wundt (e.g., 1920), he sought to investigate complex psychological phenomena (higher psychic life, as he called it) in an experimental way, placing a particular focus on thinking (Külpe, 1912a). Until that time, such was left to the non-experimental ethno-psychology endorsed by Wundt (Hammer, 2005). In order to achieve an experimental investigation of thinking, an appropriate method had to be developed. Here, Külpe's work laid the grounds for an experimental introspective investigation of thinking. He is considered the head of the Würzburg School since he was the director of the Würzburg Institute during the School's more prolific years and because he was admired by most of the Würzburgers due to his encouraging ideas (e.g., Ach, 1905; Messer, 1922; Watt, 1904). Later ideas and insights emerging from the Würzburg School were often already anticipated by Külpe in his earlier writings (Mack, 1994; Lindenfeld, 1978).

Another core representative of the school, Karl Marbe (1869–1953), developed a form of controlled self-observation, independent of Külpe (Marbe, 1930). Considering that the first published work from the Würzburg School was one by pupils of Marbe (Mandler, 2007; Mayer & Orth, 1901), it is probably safe to say that he was the first to investigate thinking in the field of psychology. Initially, he planned to continue with his psychological experiments on thinking but he was disappointed in how this was conducted by others (Marbe, 1930). Two pupils of Marbe, Mayer and Orth, were the first to publish a study in 1901 which made use of introspection as a means of qualitative research (Hoffmann et al., 1996). In particular, they used controlled self-observation to investigate mental associations experimentally – thinking, according to the dominant associationism of that time, was seen as a “course of association(s)” (Boring, 1950). They found that some experiences of their participants did not fit into the current classification scheme (sensation, presentation, feeling, and volition) and were

devoid of sensory components (Mack, 1994). Marbe himself did introspective research on judgments (Marbe, 1901) which corroborated the findings concerning sensory-free experiences while thinking. The results showed that logical judgments cannot be reduced to psychological judgments (Mack, 2005). Marbe, like Mayer and Orth, used the expression *Bewusstseinslage* (cf. “situation of consciousness,” Kusch, 1999) for specific experienced qualia aspects which cannot be analyzed or dissected further and which are free of sensory and image components. Thus, they demonstrated imageless (non-depictive, as Kusch, 1999, translates it) thought and proved that thinking is not reducible to image presentations (Mack, 1994).

It was only since Karl Bühler's (1879–1963) publication of *Tatsachen und Probleme einer Psychologie des Denkens* (Facts and problems of a psychology of thinking) in 1907 that the works of the different members of the Würzburg School were seen as a uniform approach, also leading to the famous Bühler-Wundt-controversy (Hoffmann et al., 1996). Pertaining to his contributions to thought psychology, Bühler described thoughts as independent of words and presentations and as those units of thinking which cannot be analyzed further. Instead of being shaped by associations, thinking is characterized by an awareness of rules and relations and by intention, according to Bühler.

Other Würzburgers were Narziß Kaspar Ach (1871–1946) who was the first who speaks of applying the method of systematic-experimental self-observation (Ach, 1905; Külpe, 1914; Mack, 1994) and Otto Selz (1881–1943) whose theory about thinking is seen by some as one of the most important precursors to cognitive science (Métraux, 2005).

The uniting feature of the Würzburgers was the use of introspection in researching thinking. At the same time, they all pursued this goal with a slightly different approach and theoretical emphasis. It was only since Bühler's publications that the different members were perceived as a consistent and unified school (by outsiders more so than by themselves), as Hammer concludes from her analysis of the publications of that time (1994). We will now turn to describing this common element in their approach to introspection.

The Method of Introspection

Systematic Experimental Self-Observation

The specific method of the Würzburg School, that is, self-observation, was meant to be developed as an experimental method in accordance with the paradigm of natural sciences (Ziche, 1998). This was meant to make the results scientific despite their rejection of naturalistic presumptions

(Ziche, 1998). In this way, they combined experimental methods with a qualitative analysis (something Carl Stumpf had also done before, although not with higher order cognitions; Giorgi, 2010; Kaiser-El-Safti, 1996; Kamleiter, 2001). In their approach, the experimenter applied tasks to the participant who had to observe her inner mental states accompanying the solving of the task. After a requested response, the participants had to give as complete an account as possible of all that was going on in their mind during the task (cf. Kusch, 1999). The different members of the Würzburg School used a variety of tasks, some of them simple, others were more complex. What all experiments had in common was the way subjects had to introspect, that is, how they used the new research method of systematic self-observation (Bühler, 1907; Külpe, 1912a; Lück, 2002). It must be clarified that they used self-observation instead of Wundt's inner perception, the difference being that self-observation focuses attentively on an internal experience and therefore observes it like an external object. Inner perception, in contrast, happens without focused attention. Unlike Wundt, the Würzburgers did not judge this self-observation as unreliable but as a valid method because reporting on an experience in close temporal proximity should not yield memory distortions. Hence, concerning self-observation, the type of introspection the Würzburgers applied can be described as retrospection (e.g., Ach, 1905; Bühler, 1907, 1908; Külpe, 1912a). Inner states were observed directly after they had occurred, that is, when they were still perseverating or could easily be remembered (Ach, 1905; Bühler, 1908). The concept of perseveration additionally supports the validity and minimizes the influence of possible memory distortions: in a way similar to how afterimages persists on the retina, a mental experience perseveres some moments after it has occurred, making it accessible to observation like any other observable object. A theoretical argument in favor of self-observation came from Bühler (1907) stating that retrospection is just like any other observation because both need interpretation (cf. Mack, 2005). Retrospection was at the same time a remedy against the split of the ego supposedly necessary for online introspection. Such theoretical justification made it possible to research complex psychological functions to begin with.

Their "systematic" self-observation was systematic in that the observation of inner states accorded a well-planned analysis in that all conscious states of the whole experience were to be reported – instead of reporting singular aspects that were of more subjective importance to the introspecting person (Ach, 1905, Bühler, 1907). To achieve this, several Würzburgers – Ach, Mayer, Orth, and Watt (another Würzburg scholar) – used a method of fractionation, that is, dividing the experiment into several parts. In addition, the experimenter sometimes asked questions or placed an

emphasis on specific parts of the thinking process to get a more complete picture of the inner experience (Bühler, 1907). In this way, they could get insights about the course of thinking processes.

Other safeguards were taken as well to ensure the validity of the reports. Külpe promoted four ways to do so (Kusch, 1999; Külpe, 1914, 1920; see also Külpe, 1893b, for more general claims, and also Bühler, 1908, for a justification of introspection with regard to thinking): First, it had to be checked if the report is plausible in light of the respective setting (task and stimuli); to do so, the experimenter sought to relive the experience by doing the task himself. Second, the self-observations should be compared with external results (e.g., reports of emotional states would be compared to physiological measures which indicate such a state such as breathing rate or heart beat); and with already established facts about psychological functioning. Third, different reports on different occasions by the same participant should be compared. Fourth, by comparing protocols interindividually, every instance of a participant reporting extraordinary or astonishing things had to be treated with suspicion. In this regard, participants had to be reminded to be as objective, honest, and sincere as possible. In addition, Külpe proposed that subjects should be blinded with regard to the purpose of the study (Kusch, 1999). To prevent memory distortions, the reporting should not take longer than a few minutes and the experience that had to be reported should only last a few seconds (Külpe, 1914). Furthermore, to minimize the possible influence of a surprising experience induced by the stimulus, the participant received a signal which announced the stimulus in order that the participant could prepare for it (Bühler, 1908). Taken together, there was an undeniable awareness of the pitfalls of self-observation and efforts were made to minimize errors of subjective observation. The ideal was to become as exact as the natural sciences. The method was experimental because the to-be-observed experiences were elicited experimentally, that is, they did not happen by chance but were elicited by the stimuli used in the task. With this, equal experiences could be induced repeatedly, assuring reliability. To ensure experimental control, Bühler noted that there was no hindrance to vary the experimental factors in a specified manner (Bühler, 1908). With these safeguards, the Würzburgers tried to circumvent the specific problems of introspection.

The goal of the Würzburg School was to investigate thinking; that is, finding underlying laws, understanding its processes, and developing a complete picture of what is happening while one is thinking. Thus, quite naturally, subjects had to think (Bühler), form associations (Mayer, Orth; Messer), judge (Marbe), abstract (Külpe), exercise their will (Ach and Watt), or solve problems (Selz). But the different members of the Würzburg School used

different experimental setups to achieve this. This had an influence on which particular kind of mental phenomena were observed – and in which way they were observed. In the following we will describe the three main approaches, following the division proposed by Kusch (1999).

One method, the one used by Marbe, investigated judgments and the qualifying attributes that distinguish a judgment from a simple state of consciousness (Marbe, 1901; see also Mack, 1994). In particular, Marbe was interested in the experimental investigation of the experiential side of judgments (Hammer, 1994). To achieve this, he induced conscious states in his participants which could be classified by them as right or wrong (Marbe, 1901). For inducing these states, he used different tasks: comparing weights, answering (often trivial) questions, imitating a tone, and judging the veracity of aphorisms (Hoffmann et al., 1996). Shortly after the judgment was made, the participant had to report on all conscious states, including those that preceded and succeeded the judgment process, which was written down by the experimenter Marbe (Marbe, 1901). A translated example of a task and a report (which were summarized by Marbe) is given by Kusch (1999):

Experimental conditions: The experimental subject was asked to lift two cylindrical weights one after the other. The subject was supposed to judge which one was heavier, and then to turn the heavier one upside down. The two weights were of different weight (25 and 110 grams), but they looked the same.

Statement by observer Külpe: Before turning over the weight, the acoustic word-picture ‘turning over’ appeared in consciousness. – The experimental subject did not observe any sensations, except sensations of pressure and kinesthetic sensations. (p. 14)

Concerning this type of introspection, Marbe trusted unattentive inner perception like Brentano but disregarded simultaneous observation of an inner experience because it might get distorted due to the attentive focus on it. Thus, he combined inner perception with outer observation. By way of his experimental setup, he sought his subjects to experience the thinking process with non-attentive inner perceptions several times. Because of the repeated experiences it became possible to tell more about the thinking process afterwards (Marbe, 1901). Although Marbe is not explicit on this matter, a plausible interpretation is to call this, in fact, retrospection (see Kusch, 1999).

To prevent bias in the retrospections due to influence of theoretical assumptions about the objects under investigation, the experimenter was not meant to (solely) do the observations himself but to differentiate between experimenter and subject (Marbe, 1901). In contrast to other Würzburgers, Marbe did not inquire into the subjects’

reports by posing further questions. A point that could be criticized is that he presumably let his subjects answer the questions according to a specific taxonomy to categorize the experienced states into “sensations, feelings, images, and ‘situations of consciousness’ (*Bewußtseinslagen*)” (Kusch, 1999, p. 14). Probably this confined the report by not going into detail of *Bewußtseinslagen* or wrongfully categorizing experiential states (cf. Bühler, 1907).

Another method, the one used by Ach, split the experiment in three periods. The warm-up period starts with a start signal and ends with the presentation of the stimulus. The main period includes the thinking experience which is to be investigated and lasts from the occurrence of the stimulus until the requested reaction. The follow-up period begins directly after the reaction. Two instructions were given to the experimental subject beforehand: the first regarded the reaction that was required; the second regarded the request to subsequently report the experiences during the first two periods (Kusch, 1999). The second instruction which put the focus on the relevant timeframe for the experience was meant to increase the time of the perseveration of the experience (Ach, 1905; Kusch, 1999). The reports were not based on memory in the classical sense but on perseveration, which, as stated above, can be seen as a kind of afterimage of the experience that is present only immediately after the actual experience (Ach, 1905; cf. Müller & Pilzecker, 1900). This provides an analysis of the full experience in high clarity without attention interfering with the actual experience, since the former is already over (Ach, 1905). In addition, if the reliance on memory would still leave the possibility of a memory distortion in the reports made directly after the experience, this should not be a problem in this case because, according to Ach, a perseveration is observable like an external object (Ach, 1905). Moreover, the experimenter is to ask further detailed and carefully chosen questions in order to get a complete account; this results in a higher importance of the experimenter compared to earlier forms of psychological experimentation. Still, the process of obtaining results is formed by the close exchange of ideas between experimenter and experimental subject since the protocols are to be checked and approved by the experimental subject after the experiment (Kusch, 1999). In this exchange, the experimenter should be empathic with the subject, avoid suggestion, and not bias the report himself (Ach, 1905). In principle, the subjects should be trained psychologists, although this objective was not always followed by Ach himself (Kusch, 1999). Further, Ach made great efforts to increase the objectivity of his results by using complex technical devices, often designed by him, such as a card changer. This may very well have created an artificial situation. Also, the tasks for the subjects were mostly mechanical (reacting to simple stimuli in a specified

manner like doing mathematical operations or making a choice). This suited the highly technical setup but may have limited the breadth of observable experiences; probably more natural thinking processes do not persevere in such a way.

A third method, the one devised by Bühler, worked with more difficult tasks to induce a somewhat longer thinking process, thereby extending this process and making it better observable. Bühler thought that simpler tasks such as those from Marbe or Messer are not suitable for tapping into thinking because they do not provide a basis for a rigorous analysis: since they encouraged thinking that occurs more or less automatically or that will become automatic with more routine, the experiences accompanying the cognitive processes of thinking do not become conscious and clear enough to observe them retrospectively, resulting in negative findings like those prevailing in the early research of the Würzburg School (Bühler, 1907). For instance, conscious states during the introspective task could not be identified (Külpe, 1904; Mayer & Orth, 1901; Marbe, 1901); or the psychological state of what was called a *Bewusstseinslage* could only be felt but not described properly (Külpe, 1912a) or at least not observed in more detail (Marbe, 1901). Orth stated early in 1903: “The [Bewusstseinslagen] observed by us and Marbe. . . are of very varying character, and have only this in common, that they represent psychological facts which were not exactly capable of further analysis.” (as cited in Humphrey, 1951, p. 34). In line with this is Marbe’s conclusion that there is no psychological distinguishing characteristic of judgments (1901).

Bühler presented difficult aphorisms to his participants which they had to understand and then determine or guess their accuracy, replying by simply stating “yes” or “no” (Bühler, 1907). For the purpose of simplification, no instruments were used which had the additional advantage to “free the experimental subject from the feeling of being one,” that is from the feeling of being a participant in a psychological experiment (Bühler, 1907, as translated in Kusch, 1999, p. 17). The researched thinking processes of comprehending, commenting, and recalling should not only have been more difficult but also more natural (cf. Kusch, 1999). To avoid distraction, participants were interviewed while having their eyes closed. In contrast to Ach, Bühler did not try to gain a complete account of the whole subjective experience because he thought it to be unreasonable (Bühler, 1907). He encouraged participants to provide reports in their own words so as to achieve a natural way of experiencing. Interestingly, Bühler sought the experimenter to empathize with his participant, that is to choose aphorisms appropriate to the individual subject’s level of understanding; to speak with them in a language they used themselves; and to immerse into the experiences of the subject while interpreting their report (Bühler, 1907; Kusch,

1999). To obtain valid results of introspection, Bühler (1907) conducted his experiments only with skilled subjects which were familiar with this kind of introspection (this is also true for most other Würzburgers, cf. Mack, 2005; in fact, Ach, and likewise Külpe in his more theoretical works demanded this explicitly, Ach, 1905; Külpe, 1920). Following this, the introspective report had to be controlled for internal consistency. Also, Bühler double-checked the reports with later memories of the same experience (Kusch, 1999). We quote an example from a report by Külpe who was one of the subjects being quoted:

(Do you understand?) “When you think of purpose you must also think of chance and folly?” . . . “Yes.” (11.5 secs.) “It was difficult and strange . . . for me to bring purpose into contrast with the two others. That is to say, the thought darkly emerged that the two others must be presupposed by purpose, in the same way as not-A is by A. Folly I succeeded, without more ado, in bringing into this scheme; with chance I did not succeed. Then I had the thought, how, with Darwin, chance is considered as an explanation of purpose. (There were no images, not a trace of the word Darwin, this is the first time I have spoken the word. It was an immediate, quite clear Knowledge (knowing).) Then I said with a measure of uncertainty for the second part: Yes. The task has a strong echo, it has not left me yet, because I am not yet finished with it. (Bühler, 1907, as translated in Humphrey, 1951, p. 58)

After having pointed to variances in method within the Protagonists of the Würzburg School, some similarities and differences regarding the other consciousness-oriented approaches of that time will also be pointed out. Having thinking as an object of investigation puts the research clearly in the tradition of act psychology where the intentionality of the object is easily recognized. The topic is a genuine psychological one, since it cannot be seen as a proper part of physiology. Ziche (1998), for example, states that the Würzburg School described itself explicitly as representing pure psychology. The introspections of the Würzburg School had a focus on the lived experience – as is the case in phenomenology. But the Würzburgers concentrated on an experience as it was given instead of using imaginative variation, which is a kind of (phenomenological) thought experiment: to change the phenomenon actively in mind till its essences can be detected (Herzog, 1993). Their goal of introspection was the report per se; while conducting it, introspection was not meant to find something like cognitive essences. That is, they reported on it without the (philosophical) reflection which is so prominent in the phenomenological approaches (e.g., to find invariants).

The experiences were described in total (Marbe) or with a focus on relevant information (Bühler) and could be steered by the experimenter. The Würzburger approach to introspection is a form of looking within, as indicated by the many references to oneself in the reports. The philosophical demand of phenomenological reduction was thus no part of it, although they tried to achieve an unbiased report (see control conditions above). The lengthy reports showed that they did indeed conduct self-observation, as they could view their thinking experiences again and again from different angles. Hence, the Würzburgers did not conduct intuition or inner perception. This is notably the most ambitious and significant difference because before them no one has conducted introspection in this way. Brentano and Wundt accepted only inner perception, albeit they defined it differently. The phenomenological approaches constituted their own kind of inner intuiting – namely intuiting of the essences – which is, as mentioned, different from introspection. Thus, the Würzburg School managed to give accurate and complete accounts of something genuinely psychological, namely thinking experiences, by focusing on the consciousness while thinking and thereby controlling the experience experimentally. That is, the experiences were repeatable and in principal open to scrutiny by others. By not following the implied reduction in the experimental domain on sensations and at the same time using experimental procedures for higher-order-cognitive functions, the Würzburg School took a genuine psychological stance whose approach and results cannot be substituted by physiology or philosophy. In this sense, the Würzburg School integrated phenomenology and experimental psychology and takes a medial position between the Wundtian and Brentanian stance (Baumgartner & Baumgartner, 1997; Herzog, 1993; Messer, 1922).

First- or Third-Person Research?

The approach (or in view of the preceding paragraph: the approaches) of the Würzburgers were important and applaudable because they reminded the psychological community of the reality of mental experiences (such as thinking) and the need to study them. At the same time, from today's perspective, they did not go far enough in establishing an independent approach to the study of mental experiences and processes which could have complemented third-person methods. In particular, there were three core points that in our view disqualify this early set of approaches as a genuine form of introspection in the more narrow sense:

- The Würzburgers still applied the experimenter-participant split (or one could also say: they upheld the subject-object distinction; e.g., Külpe, 1920, p. 61) which is standard in third-person-research. The experimenter

collects data from (or about) the participant and analyzes them. In case of the Würzburg School, these data were oral reports transcribed into a written format. The emerging behaviorists, perhaps the most radical third-person-researchers, ultimately also accepted verbal reports as valid data (Ericsson & Simon, 1980; Wilson, 1994; see also Walach, 2013, p. 238). As a matter of fact, the think-aloud-technique (Ericsson & Simon, 1993) is an offspring of this early approach in which experimenters seek to access the manner of subjective experiencing of their participants. In both the Würzburg approach and the think-aloud technique, participants say out loud all thoughts while – or shortly after – solving logical (e.g., mathematical or syllogistic or other sensory or knowledge-related) problems. These reports are analyzed in a systematic and detailed way; note, however, that while these reports may carefully track the logical steps of these mathematical problems (e.g., the first subgoal was to express the narrative description in a number format), they do not primarily provide a phenomenological description of inner (lived) experience (e.g., how is it like to be dealing with verbal descriptions vs. with numbers) – a constellation which may also explain why this approach was so important to computational theory. The verbal reports of both the Würzburgers and the Behaviorists are distinct from what can be classified as genuine first-person introspection in that these verbal reports – relative to the lived experiences – are already abstractions of thought sequences (words are symbols). Hence, the primary character or experience is lost and instead encoded in a series of symbolic representations. In this sense, the empirical material of the introspective researchers was thus not primary data but secondary reports. The Würzburgers thus had to apply a double standard: the standard of the participant in reporting her experiences – thus allowing him to attend to the qualia of the phenomenon; but then also the standard of the experimenter in aggregating and compiling these reports, moving away from the qualia of the phenomenon. This was in principle more or less the same to what the Behaviorists did – the main difference perhaps being that the Behaviorists limited their scope of enquiry to aspects that were even more easily reportable to begin with.

- Second, the Würzburgers focused on contents, not on processes of thinking. They were well experienced with philosophical aphorisms and the kind of observations pertaining to one's own sensory experiences. A good example is Külpe's investigation about abstraction (1904) in which he asked his subjects directly about sensory contents and their intensity. Here, subjects reported things such as skimming through the visual

stimulus material with their eyes. With such an experience, they could detect the contents of their experiences in detail. They also acknowledged the existence of different thought processes – but they considered these processes to be not further analyzable. The written reports contained nearly always detailed descriptions of thinking contents, which were descriptions of sensory aspects or steps of logical reasoning which is remarkable given the fact that they otherwise put such an emphasis on their discovery of imageless thought including Bewusstseinslagen like doubting or knowing and that they even criticized a popular conception of thought courses (Külpe, 1912b) for being applied only to sense-related thinking experiences. But this was presumably supported by the types of phenomena used for an investigation of thinking, as they either contained sensory aspects or demanded logical reasoning. The core value of a genuine introspection that goes above and beyond third-person observation would have been to research the thought processes in *statu nascendi*; or at least in advancing approximate temporal coincidence to their origin; this the Würzburgers did not do – and mostly everything else about thinking research – in particular the contents of thinking in response to particular prompts or experimental triggers – can in fact better be accomplished by third-person experimentation.

- Third, there was no training or cultivation of introspective skills in a genuine sense. As already mentioned, the Würzburgers certainly used participants who were experts in their fields and who were taking part in these studies repeatedly. But this was a training in observing the contents, not a training in observing the processes of thinking or in training a concentrated form of thinking to begin with, which yields different types of results from non-concentrated (mindwandering or associative-style) thinking that the Würzburgers conducted (for an illustration, see Weger, Wagemann, & Meyer, in press). Without training in observing the processes, the awareness that these processes can be observed and studied in addition to the contents may elude the experimenter to begin with. A thorough training in practicing such process observation is thus needed.

According to our interpretation, the way the Würzburgers understood and conducted introspection is thus not a type of introspection that could have been a counterweight to the more outwardly oriented form of research of the behaviorists. Contrary to the common sense in mainstream psychology today, the Würzburg approach was, in our view, too close to the Behaviorist method. Not surprisingly, the results they produced did not go significantly beyond what third-person research can produce. Reasons for this become

evident when considering the history of introspection in relation to the history of psychology in more general terms. Early in the 20th century, psychology was a young discipline still in the need of academic approval as a legitimate and independent branch of science. Hence, the Würzburgers had to produce results that were valid according to the prevailing research standards outside psychology – and those were third-person standards. As the behaviorist methods were not technically mature either at that time, the Würzburg School naturally sought to use introspection which was then the prevalent research method within psychology, but they did so in a third-person fashion. Thus, some core phenomena of psychology remained outside their focus (e.g., the qualia of consciousness or the self).

A further refinement of introspection was possibly hampered by the fact that the Würzburgers and other introspective schools came to different conclusions concerning some of their core results. Relating to the imageless-thought-debate, Lyons (1986) points out: “The breakdown [of introspection] occurred [because] the claimed data from introspection are so conflicting as to be useless as data in psychology.” (p. 16) Interestingly, those may have been differences in interpretation more so than differences in actual results (Petitmengin et al., 2009) – and would have likely not been more fundamental than the differences between various replication attempts at any given behavioral or neuroimaging experiment that is conducted outside a first-person context. The concern about discrepancies in the data, brought up by scholars both at that time and ever since, may well have to be understood as a pretext for more apodictic reservations against first-person research, rather than as an indication of a fundamental problem with this introspective methodology *per se*.

In our understanding – and we wish to point out that here we are informed by other approaches that focus on an in-depth and sustained training of mental activity, such as is inherent in the approaches of R. Ziegler, H. Witzmann, and R. Steiner (Steiner, 1894/1968; Witzmann, 1983; Ziegler & Weger, 2018) – a more adequate and explicitly first-person form of introspection develops a research method that is advanced along the three dimensions alluded to above: The experimenter researches his/her own thinking directly. She researches not only the contents of mental phenomena (e.g., how many syllables do I remember after a certain delay period; what contents are part of my self-schema; etc.), but also studies *processes* of mental phenomena, such as different types of recall activity (e.g., Weger, Wagemann, & Meyer, 2018); or different modes of experiencing the self (e.g., Weger et al., 2016); or the thinking process proper (Ziegler & Weger, 2018).

To illustrate: in a given study (Ziegler & Weger, 2018), we would start out by setting us a specific theme (e.g., researching how we recall a specific event – for instance:

what did we do a year ago/a month ago today; etc.). We would then find an experience that would be difficult enough such that memory contents would not come up immediately, stretching the recall process as much as possible, and thereby opening it up for a more close-up investigation; we would explore aspects of the recall process that we observed repeatedly and identify core dimensions that we established/observed over multiple trials of observation; and then exchange our findings with others, going through cycles of replication and validation that would allow us to extract core findings or dimensions that are mutually agreed. Such a process would require extended practice over multiple weeks and would also typically require multiple exchanges and refinements with colleagues. In this sense, it is different from other qualitative approaches (think-aloud-protocols etc.): In the introspective approach described here, it is the participants of the research process who study their own thinking process and do not delegate this to others (as is the case with think-aloud protocols where the participants experiences are analyzed by researchers); as participants and researchers at the same time, we create conditions that allow us to study processes, in addition to contents; and because this is challenging and not immediately obvious, it requires repeated practice that scrutinizes the experiences that we observe while consolidating a fuzzy memory into consciousness.

We see an enquiry into the processual character in this manner as crucial in understanding the nature and origin of psychological processes. Thinking, for instance, does not only consist in propositional representations (images) that feature prominently in consciousness; but also in a more elusive activity that links up these images; without attending to this processual component, the origin and emergence of the contents remains elusive and open to speculation (e.g., “they emerge out of brain activity”). The contribution of a first-person science to experimental psychology is, among others, an enquiry into those layers that are a priori first-person in nature and that can only be insufficiently (symbolically) addressed through third-person approaches, thereby aiming to reduce the type of speculation alluded to. The manner of dealing with this processual character in the current form of a first-person science may still be partial or insufficient; but this does not mean that this should have to remain such, as any science in evolution; also, it is no legitimate alternative to leave them completely unattended.

The End of the Würzburg Approach

Without doubt, in addition to the methodological limitations, there were historical and individual/biographical constraints that inhibited a further blossoming of the introspective approach. On the general historical front,

the outbreak of World War I soon began to take its toll. There was an increasing demand of (psycho-)technical investigations and applied science became increasingly important (Gundlach, 1996); the more subtle and theoretically/methodologically informed research receded increasingly from the public agenda. During the war itself, some of the Würzburgers like Selz and Bühler (Benetka & Friedrich, 2015) were recruited for military service. After the war, at a time of economic crisis (Gundlach & Stöwer, 2004), their work was not unified anymore.

The Würzburgers never understood themselves as a coherent group to begin with (in fact, often enough they sought to distinguish themselves from one another), hence there were also no strategic efforts to bring thought psychology into more general prominence. Marbe, in particular, did not agree with the work of the other Würzburgers (Marbe, 1945). Moreover, there was a significant debate between Selz and Ach – in many ways understandably enough considering the more technical versus holistic approach of Ach and Selz, respectively (ter Hark, 2010). Such controversies may have arisen because some members had different philosophical backgrounds and psychological training.

Taken together, the Würzburgers were effectively challenged on two fronts. On the one hand, they had to defend their ideas and method against the broader scientific public (cf. Bühler-Wundt controversy); on the other hand, they were at times arguing against each other. This situation was possibly a continuing and mounting issue since they moved to different places after only a few years in Würzburg. Thus, soon after Külpes Death in 1915, the “school” as a whole became extinct.

Conclusion

In retrospect, the attempt of the Würzburg School seems applaudable because, as noted earlier, it acknowledged the reality of mental life and the need to study it systematically. And yet, the Würzburgers still largely considered behavioral dimensions, even though results such as those of different Bewusstseinslagen point to the need of a qualitatively different research mode. As they only undertook preliminary steps in researching thinking, such endeavors are perhaps too much to expect from this early period. But with today’s background and in light of our understanding of thinking processes, we consider the qualitative aspect to still await a more thorough appreciation. Hence, illuminating those qualitative dimensions in a more genuine form of inward enquiry is important. From today’s point of view, the decline of introspection can be interpreted, among other things to be due to the spirit of the time rather than to methodological problems (cf. also Brock, 2013; Danziger,

1980). Together with the fact that a genuine first-person introspection has never been established, a general disregard of the introspective method solely on the basis of behavioristic reasoning is not an appropriate conclusion. An approach to introspection that considers the three elements that we identified as missing in the Würzburg approach (viz. merging the subject-object divide; considering processes in addition to contents; and introducing a systematic training to move beyond a more spontaneous type of observation) would be in place. In two other contributions in this volume we tried to consider these aspects and apply them to both thinking (Ziegler & Weger, 2018) and to memory research (Weger et al., 2018) in an effort to explore whether such a revised form of introspection can uncover aspects of psychological phenomena that go beyond a behavior-focused mode of enquiry. But we also hasten to add that this is work in progress and that other approaches to an in-depth appreciation of first-person experience are equally legitimate.

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