

e-Journal Philosophie der Psychologie	THE INFLUENCE OF GOTTFRIED WILHELM LEIBNIZ ON THE PSYCHOLOGY, PHILOSOPHY, AND ETHICS OF WILHELM WUNDT* JOCHEN FAHRENBERG
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Abstract

Gottfried Wilhelm Leibniz (1646 - 1716) is regarded as the most important German philosopher and universal thinker between scholasticism and Immanuel Kant. Wilhelm Wundt (1832 - 1920) was a neurophysiologist, psychologist and philosopher. He is internationally known as the founder of experimental psychology and the first to build a laboratory with an explicit research program.

Leibniz's essential influence on Wundt's thinking, so far, is not thoroughly examined. In the preface to his *Grundzüge der physiologischen Psychologie*, Wundt refers to Immanuel Kant and Johann Friedrich Herbart being the most influential in shaping his philosophical standpoints. Taking this lead, however, it is noticeable that Wundt's attitude is mostly critical, especially regarding Herbart. In comparison, Leibniz's impact is essential and constructive in forming Wundt's psychology, philosophy, epistemology, and ethics. This influence is obvious in Wundt's essay on Leibniz in 1917 and from a number of basic concepts, terms, and epistemological principles in Wundt's work. Furthermore, Leibniz's perspectivism was formative to Wundt's cognitive style.

The present contribution refers to four basic postulates in Leibniz's thinking: the Law of Continuity, the Principle of Harmony, the Principles of Individuality and of Autonomous Activity; and the main part includes 10 issues or sections: (1) Monads and the mind (soul): substance and actuality; (2) Epistemology: psychologically-reflected idealism – as opposed to sensualism (empiricism); (3) Parallelism: psychophysical and harmonically pre-stabilized correspondence; (4) Perception and apperception; (5) Consciousness, self-awareness and individuality (the person); (6) Striving and appetite, volition (the will), intellectualism and voluntarism; (7) Principles of sufficient reason, principles of causality and purpose, unity and plurality, perspectivism; (8) Concepts of development (evolution); (9) Ethics and the idea of humanity; (10) Monism. The sections include citations from Leibniz's work, Wundt's direct commentaries on Leibniz, as well as further citations from Wundt's work referring to epistemology and indicating consequences for research and methodology.

Obviously, Leibniz had a profound impact on psychology and philosophy as conceived by Wundt who transformed philosophical concepts to an innovative research program and an advanced methodology in the formative years of modern psychology. The seminal ideas, however, had little resonance, at least not a permanent impact on theoretical or empirical psychology as understood by Leibniz and by Wundt. In summary, it can be said that in German and English-language historiography of psychology (apart from very few voices) there are astounding and radical breaks in tradition with regard to Leibniz's philosophical psychology and Wundt's philosophically reflected empirical psychology. This essay is a plea for a renewed discourse on philosophical presuppositions in psychology and, thus, complements previous books: *Menschenbilder* (2007), *Wilhelm Wundt – Pionier der Psychologie und Außenseiter?* (2011), *Zur Kategorienlehre der Psychologie* (2013), *Theoretische Psychologie* (2015a).

1 Introduction

Gottfried Wilhelm Leibniz (1646 - 1716) is regarded as the most important German philosopher and universal thinker between scholasticism and Immanuel Kant. Wilhelm Wundt (1832 - 1920) was a neurophysiologist, psychologist and philosopher, all in *one person*. He is internationally known as the founder of experimental psychology and the first to build a laboratory with an explicit research program in psychology. He is also known to be a leading pioneer in the field of cultural psychology since his 10 volume *Völkerpsychologie* (Cultural Psychology) is a milestone project, a monument of cultural psychology, of the early 20th century. We now wish to consider almost two centuries later which of the ideas of Leibniz attracted Wundt. Obviously, there is a deep affinity of

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thought. And some of the ideas today, another century later, may be essential to further develop fundamental questions and controversies within psychology. However, this development of ideas has scarcely been investigated in the history and theory of psychology.

Wundt's distinctive appreciation will be cited as an onset here:

"Leibniz, who was the founder of German idealism and who, at first, gave his dialectical framework to the later idealism gleaned from Fichte to Hegel, to the triad of logic-mathematical axioms: identity, contradiction, and reason, thus submitting his metaphysics to psychological consideration. The name with which he describes the work containing his general outlook on the world is characteristic. He does not call it metaphysics according to transcendence, but monadology, meaning a philosophy of the mind from the point of view of psychological analysis assuming that the spiritual life is the basis of reality. In addition to this, he often assumed ideas on which today's psychology is once again concerned with and seeks to develop them on the basis of widening experience" (Wundt, 1900-1920, vol. 10, p. 212 f).

With the 300th anniversary of his death, Leibniz is still known as a great philosopher, mathematician and universal thinker. However, his influence on psychology is seldom mentioned. Leibniz does not use the term psychology, nor does he write about empirical psychology ("Seelenkunde") as happens in the following century (e.g., Carus, 1808; Luccio, 2013; Vidal, 2011). He does, though, analyse psychological relationships as well as reporting everyday psychological observations and experiences along with conveying principles of knowledge. In the philosophical secondary literature on Leibniz, psychology remains merely a marginal theme as is the case with Leibniz in recent books on the history of psychology. When thoroughly researched, a different picture emerges, if not from the Leibniz literature, but from the work of Wilhelm Wundt. He founded the first psychological laboratory in 1879 and developed psychology as an independent discipline at the University of Leipzig where Leibniz was born in 1646. Especially in Wundt's work it should be investigated, when reference is to be made to Leibniz's ideas in the field of modern psychology.

On the two hundredth anniversary of his death in 1916, Leibniz was recognized by Wundt as the founder of the new philosophy in Germany. Many years earlier, Wundt had conceived "the bold plan of writing a scientific Leibniz biography", inspired by Leibniz's mathematical-physical work, then by his philosophical ideas. In his essay on Leibniz, Wundt (1917) takes 132 pages to portray how Leibniz replaced scholastic thinking with his refined position of idealism: The world and the principles of continuity and dynamic changes are to be understood in terms of mathematics; the changes follow the *law of continuity*, the *principle of causality* and the *principle of purpose*, thus corresponding to the doctrine of *sufficient reason* (*nihil est sine ratione sufficiente*) – philosophical reasoning shows the world's harmony and, despite differences in perspective, its unity within plurality (*unitas in multitudine*).¹

¹ A detailed review of this Leibniz article comes from Schwaiger (1918). He thinks that Wundt "especially takes up the issues which are essentially related to his own convictions. This means that those philosophical ideas which are intrinsically valid: Development and unity, the actuality of intellectual life, activity and aspiration, voluntarism, epistemological idealism, and with a special emphasis on mathematical-scientific research, historical appraisal of tradition." According to Wundt, nature and mind (= soul) are, for Leibniz, in the last analysis, neither different substances, nor different attributes of one substance, but complementary points of view in the conception of the world. The psychologically decisive among them is the inner experience. This is because it embraces the content of reality for us: "it is power, activity and intention" (p. 157). – In contrast

Wundt shows the depth of Leibniz's reflections on subjects such as: proof of the existence of God and theodicy, monadology, the actuality and continuity of the *mental* processes (soul = mind or reason), the principle of sufficient reason, the principle of harmony and the unity of the sciences. One principle in the thinking of Leibniz played a fundamental role: "the principle of equality of separate but corresponding viewpoints." Wundt characterized this style of thought in a way that also applied for him – viewpoints that "supplement one another, while also being able to appear as opposites that only resolve themselves when considered more deeply" (Wundt 1917, p. 117). Wundt does not use the term *perspective* coined by Leibniz, but *perspectivism* is a fundamental characteristic of Wundt's own thinking.

Wilhelm Wundt

If we are concerned with the influence of Leibniz's thoughts on Wundt, at least some biographical notes must be given on his initial standpoint and his significance for psychology. He was initially a physician and a well-known neurophysiologist before turning to sensory physiology and psychophysics. He was also an internationally-renowned neurophysiologist, had supervised laboratory training in experimental physiology in Heidelberg and since 1859 had also lectured on anthropology and medical psychology, before 1874 accepting the *Chair of Inductive Philosophy* (a philosophy which emanates from the empirical sciences), in in Zürich. A year later he was then called to one of the two *Chairs in Philosophy* at the University of Leipzig.

Wundt's understanding of science was originally determined by his study of medicine, by his work in the laboratory of Hermann von Helmholtz, and by his own research on sensory psychology. Wundt's epistemological position – against John Locke and English empiricism (sensualism) – was made clear already in his book *Beiträge zur Theorie der Sinneswahrnehmung (Contributions on the Theory of Sensory Perception)* published in 1862, by his use of a quotation from Leibniz on the title page: "Nihil est in intellectu quod non fuerit in sensu, nisi intellectu ipse." (Leibniz, *Nouveaux essais*, 1765, Livre II, Des Idées, Chapitre 1, § 6). – "Nothing is in the intellect that was not first in the senses, except the intellect itself." (New Essays on Human Understanding. Book 2. p. 36; transl. by Jonathan Bennett, 2009).

Wundt had arrived at this conclusion from his research in perception that *simple physiological* explanations are not sufficient to explain certain phenomena, but, on the contrary, *psychological concepts* are necessary. He was convinced that, for example, the process of spatial perception could not solely be explained on a physiological level, but also involved psychological principles. In the perception and consciousness of man, principles are to be recognized which are not encompassed in sensations (sensory impressions): logical inferences, categories, the principle of causality, the principle of purpose (teleology), the emergence principle and other epistemological principles.

Wundt's best-known book, *Grundzüge der physiologischen Psychologie* (trans. *Principles of physiological Psychology*), concludes with the sentence "Not as a simple being, but as an ordered unity of many elements, the human soul is what LEIBNIZ called: a mirror of the world" (1874, p. 863). – Wundt founded experimental psychology as a discipline and became a pioneer of cultural psychology. He created a wide-ranging research program in experimental, as well as cultural psychology, and developed a comprehensive system of philosophy and ethics from the basic concepts of his psychology – bringing together several disciplines in one individual. A survey,

to Schwaiger, Stieler (1925, 1950), although psychologist, in his representation of Leibniz' philosophy and psychology does not at all refer to modern psychology or to Wundt.

published in *American Psychologist* 1991, ranked Wundt's reputation *in first place* regarding "all-time eminence" based on ratings provided by 29 American historians of psychology; ranked a distant second and third: William James and Sigmund Freud (Korn, Davis and Davis, 1991, pp. 789-792).

There are several reasons for Wundt's outstanding importance: Wundt expanded Gustav Theodor Fechner's psychophysics into an experimental psychology. With his chair in philosophy, from 1875, he organized the first continuously active laboratory and also made psychology as an independent discipline. He had already sketched the ideas of a research program in 1862 and 1863 which he followed for almost 60 years. Wundt's research and his publications reveal a comprehensive, almost universal theoretical horizon, especially in his three-volume *Logik und Wissenschaftslehre der Natur- und Geisteswissenschaften* (*Logic and theory of knowledge in the natural sciences and humanities*). Wundt's experimental psychology is based on the scientific methodology of experimentation, in the broadest sense of Francis Bacon, but is expanded and supplemented, on the one hand, by a knowledge of the physiology and anatomy of the CNS, and on the other hand by comparative cultural psychology and interpretation. The particular issues in epistemology and methodology require a close link between psychology and critical philosophical reflection – instead of deriving empirical psychology from metaphysics as in traditional psychology and teachings about the "soul".

The following Sections 2.1 to 2.11 deal with Leibniz's ideas that were particularly important to Wundt's thinking; he has developed and expanded these ideas further into principles of psychology and research strategies. The *psychology of apperception*, which is central to Wundt's work, proceeds from Leibniz's concept of apperception as opposed to mere perception, differentiates this approach psychologically, and begins by analysing the apperceptive process by experimental methods and by suggesting neuropsychological modelling. From Wundt's point of view, it is important to distinguish between the self-active, voluntarily controlled conscious activity and the merely associative-learned connections (see the detailed description of apperception psychology, Wundt, 1908-1911). Wundt's theory of apperception is an excellent example of how a concept created by a great philosopher could stimulate a psychological research program. The transition to *experimental research* distinguishes Wundt's reception of Leibniz's thoughts from all other traditional lines, especially Christian Wolff, Immanuel Kant, Johann Friedrich Herbart, Hermann Lotze (with the exception of Gustav Theodor Fechner).

Leibniz's work and sources

There is no comprehensive outline of Leibniz's ideas, as a philosophical system, to which Wundt could refer to at the time, or on which the history of psychology can be based today. Two books are most likely to be selected to represent Leibniz's thinking, still of fundamental interest in today's field of psychology:

- Leibniz (1701-1704/ published in 1765). *Nouveaux essais sur l'entendement humain*. (trans. *Neue Abhandlungen über den menschlichen Verstand / New Essays on Human Understanding*).
- Leibniz (1714/ published in 1720). *Principles de la philosophie ou la Monadologie*. (trans. *Die Prinzipien der Philosophie und Monadologie / Principles of Philosophy and Monadology*).

The preface to *New Essays on Human Understanding* opens with the epistemological theory of John Locke's *An Essay Concerning Human Understanding* (1690), and then leads on to consider the minimal or *indiscernible perceptions* and related psychological questions: Attentiveness, reflection,

novelty, importance of intensity and frequency of events for associative learning; memory, habituation to sensory stimuli, distractions and needs, which are not consciously perceived, and the constitution of the individual.

The Principles of Philosophy and Monadology consists of 90 paragraphs. A selection of which are those relating to (forthcoming) psychology and the theory of knowledge (epistemology), while theological postulates and justifications are largely excluded here, as well as the discourse on *Theodicy*, i.e. the question of why a good, benevolent and almighty God permits the manifestation of evil: Leibniz (about 1710) *Essais de Théodicée* (trans. *Theodizee / Theodicy*).²

English translations

The online translations provided by Jonathan Bennett *New Essays on Human Understanding* (2008) and *Monadology* (2006) are referred to here: <http://www.earlymoderntexts.com/authors/leibniz>. A number of Leibniz's essential theses and illustrative instances are compiled in shorter essays:

- *A new system of nature and of the interaction of substances, and also of the union that exists between the soul and the body* (1695)
- *Principles of nature and grace based on reason* (1714).

One obstacle is that Leibniz's ideas on psychology, philosophy, and ethics are widely scattered throughout his extremely extensive work. When Wundt was alive, only a part of this work was available. When Wundt mentions Leibniz, he often states the source although not always as literal quotations with precise references (which were not common at the time). A listing of those works of Leibniz that were available in Wundt's own library shows 33 publications from and about Leibniz.³ Direct references and quotations as well as clear traces of Leibniz's thinking can be found in a number of Wundt's publications. In addition to the outstanding essay on Leibniz (Wundt, 1917), important access is provided by the autobiography published 1920: *Erlebtes und Erkanntes* (trans. *Experienced and Discovered*).

In the University Library of Leipzig, there are 14 collections of hand-written excerpts and lecture scripts in the digitized estate of Wundt which mainly cover Wundt's lectures: *Philosophy; The History of Modern Philosophy; Metaphysics; Ethics; Logic; and Theories of Methodology*. – An interpretation of these texts is made very difficult by Wundt's hardly legible handwriting (see Fahrenberg, 2016c).

Wundt's most important books are:

- *Grundzüge der physiologischen Psychologie (Principles of physiological Psychology)*, (1874; 6th ed. 1908-1911, 3 Vols.).
- *System der Philosophie (System of Philosophy)*, (1889; 4th ed. 1919, 2 Vols.).

² The year given is usually that in which the work was completed, not of its eventual publication. Apart from Karl Gerhardt's (1875-1890) fundamental edition and that of the German Academy of Sciences (1923 ff): *Philosophische Schriften* <http://www.leibnizedition.de/startseite.html>, there are more recently several editions, digitized books, and translations, published by various editors, including a number of English translations and online translations. <http://www.earlymoderntexts.com/authors/leibniz> An easy-to-read compilation of *New Essays* and *Monadology* is provided by Leinkauf (1996, pp. 320-345d, pp. 406-424).

³ Wundt's library was given to the Tohoku University Library in Sendai, Japan (see Fahrenberg, 2016c). A listing is also accessible at the *Max-Planck Institute for the History of Science*, Berlin, http://vlp.mpiwg-berlin.mpg.de/library/libraries.html?op_volumeid=eq&volumeid=lit22218

- *Logik. Eine Untersuchung der Prinzipien der Erkenntnis und der Methoden wissenschaftlicher Forschung (Logic. An investigation into the principles of knowledge and the methods of scientific research)*, (1880-1883; 4th ed. 1919-1921, 3 Vols.).
- *Ethik (Ethics)*, (1886; 3rd ed. 1903, 2 Vols.).
- *Völkerpsychologie. Eine Untersuchung der Entwicklungsgesetze von Sprache, Mythos und Sitte (Cultural Psychology. An investigation into developmental laws of language, myth, and conduct)*, (1900-1920, 10 Vols.).
- *Grundriss der Psychologie (Outline of Psychology)*, (1896; 14th ed. 1920c).

These volumes cover an immense variety of topics. On examination of the complete works, however, a close relationship between Wundt's theoretical psychology, epistemology and methodology can be seen. English translations are only available for two of the best-known works: *Principles of physiological Psychology* (ed. of 1874/1902, Chapters 1 to 6 only, i.e. on brain functions), and *Ethics* (also only 1st ed. of 1886). Wundt's work remains largely inaccessible without advanced knowledge of German. Its reception, therefore, is still greatly hampered by misunderstandings, stereotypes and superficial judgments.

Terminology

Leibniz's texts are partly in Latin, but usually written in French. However, they are now often cited from German or English translations. The contexts of Greek and scholastic philosophy, important for understanding, as well as essential connotations of the central concepts are thus often lost. For Leibniz, the doctrine of the monads and issues of "psychology" were in the field of *philosophy*. He did not use the term *psychologia* (see *Leibniz Lexicon*, 1988), but occasionally *pneumatics* or *pneumatology*. Wundt translates *monadology* as a doctrine of the soul, i.e. *psychology* ("psychologia" was introduced by Freigius, 1574; cf. the conceptual history of *peri psyches, de anima, psychologia*, Scheerer, 1989, Ungerer and Bringmann, 1997, Ungerer, 2016; Luccio, 2013). Significant terms in the following text, such as *mind, soul, consciousness* and *will*, are burdened by their extreme ambiguity. In addition, these terms for Leibniz undoubtedly have theological significance which Wundt "secularizes". Wundt sees in Leibniz a tendency to make concessions to the claims of theology which "go far beyond what is permitted from the philosophical point of view of universal harmony" (1917, p. 118).

According to Leibniz and Wundt, "Geist" (mind, reason) is the essential characteristic of man, but "Geist" cannot be equated with "mental" or "mind" in today's "philosophy of mind" and it hardly corresponds to what the textbook authors at the beginning of the 20th century vaguely considered "soul" (or "mental"), and those of the beginning of the 21st century vaguely call "psyche" and "psychical" or "mental". It is worth noting that in his writings Wundt, besides *consciousness* and *inner experience*, does not completely dispense with the ambiguous term *soul* with its theological-transcendental connotations. Even today, the meaning of soul (= mind = spirit) often appear to be confounded. – In his comprehensive work on the theory of categories, Nicolai Hartmann emphasized that his attempts in *categorical* distinction between the two spheres (mind and soul) remained unsatisfactory (Hartmann, 1940, 1950, see Fahrenberg, 2013). – Here, if quotes are not given, the terms *mental processes* and *consciousness* are generally preferred, and the associated problems of adequate psychological methods are "kept in mind" so to speak.

Today's authors naturally feel tempted to express Leibniz's meaning in more modern terminology, even if they are uncertain as *philosophers* in the concepts and terminology of *psychology*.

Problematic views can then arise if statements are interpreted without presenting literal quotations.

It is then paraphrased, and psychological terms are used, which were not common at the time, or which today have other strong connotations and can therefore lead to serious misunderstandings. Because Leibniz has his theses widely spread, even in many of his letters, and has used an aphoristic and sometimes a dialogical style, his most important concepts and theses have several variants and even may appear inconsistent. In view of the sources as well as the linguistic and conceptual difficulties, it is appropriate to accept the guidance and the expertise of those authors who contributed pertinent articles to the *Historisches Wörterbuch der Philosophie* (trans. *Historical Encyclopedia of Philosophy*) (Ritter et al., 1971-2007). In addition, Eisler's (1904) *Wörterbuch der philosophischen Begriffe* (trans. *Dictionary of Philosophical Terms*). <http://www.textlog.de/1381.html> can be consulted since he has dealt extensively with Wundt's work and has written a biography about him (Eisler, 1902).

Misunderstandings of basic terms and principles

Wundt's terminology also creates difficulties because, from today's point of view, he has expressed some of his most important terms in an unfortunate way, resulting in persistent misunderstandings. Examples include:

- *Apperception* – not just an increase in attention, but a central and multimodal synthesis.
- *Soul* – not as an immortal, transcendent entity (spirit), but as an actual *process* of cognitive, emotional and volitional (motivational) activity.
- *Psychology of Will (Willing, Volition)* – Theory of motivation.
- *Voluntaristic tendency, voluntarism* – not an absolute metaphysical postulate, but an empirically grounded psychological accentuation of motivated action, as opposed to the intellectualism and cognitivism advocated by other psychologists.
- *Self-observation* – not in the sense of naive introspection but based on training and experimental controls.
- *physiological psychology* – specifically not a *physiological* psychology, because by writing the adjective with a small letter Wundt wanted to avoid the reductionistic misunderstanding that still exists today; for him it was the *supplementary* use of physiological methods in experimental psychology that mattered.
- *Element* – not in the sense of the smallest structure, but as the smallest unit of the intended level under consideration, so that, for example, even the central nervous system could be an "element".
- *Völkerpsychologie* – cultural psychology, i.e. a psychological theory of the development of mind – not a descriptive ethnology.

If Wundt's psychology is presented as a "natural science", "elemental psychology" or "dualistic" conception, this also is evidence of enduring misunderstandings. It is therefore necessary to remember Wundt's expressly stated desire for uniformity and lack of contradiction, and for the mutual supplementation of psychological perspectives. Wundt's more demanding, sometimes more complicated and relativizing, then again very precise style can also be difficult – even for today's German readers; a high level of linguistic competence is required. There are English translations but for very few of Wundt's books. In particular, the *Grundzüge der physiologischen Psychologie* expanded into three volumes and the ten volumes of *Völkerpsychologie*, all the books on philosophy and important essays remain untranslated. As Wundt's three-volume *Logik und Wissenschaftslehre*, i.e. his theory of science, is not available in English the close interrelationships between Wundt's empirical psychology and his epistemology are generally overlooked or ignored.

Such shortcomings may explain many of the fundamental deficits and lasting misunderstandings in the Anglo-American reception of Wundt's work. Massive misconceptions about Wundt's work have been demonstrated by William James, Edward Titchener, Granville Stanley Hall, Edward Boring as well as among many later authors. Blumenthal's (1980, p. 435 ff) assessment that "American textbook accounts of Wundt now present highly inaccurate and mythological caricatures of the man and his work" still appears to be true. A highly contradictory picture emerges from systematic research on the reception of his work. On the one hand, the pioneer of experimental psychology and founder of modern psychology as a discipline is praised, on the other hand, his work is insufficiently tapped and appears to have had little influence. Misunderstandings and stereotypical evaluations continue into the present, even in textbooks of the history of psychology. In more recent assessments, at least some of the essential parts of Wundt's work, including his epistemology (theory of science) and his philosophy, are investigated in a more focused manner and, also, a critical account regarding the problematical reception of Wundt is given (Araujo, 2016; Danziger, 2001; Fahrenberg, 2011, 2012, 2015a, 2016b; Jüttemann, 2006; Kim, 2016; von Rappard, 2004).

Aims and outline

What attraction the universal thinker Leibniz had for Wundt can be found in the leitmotifs of Wundt's psychology and philosophy as well as in his theory of science. Rarely is it the direct assumption of a single thought or principle; Wundt attempts to rethink the ideas in his own time, to develop them further, to specify them psychologically, and proceeds methodically to an empirical research program. He also contradicts Leibniz's postulates of monadology, the ultimate theological foundations, the theodicy doctrine, and the theses on the mathematisation of the world by excluding the realm of the mind.

In the following study of Leibniz's influence on Wundt's work particular concepts and themes are selected. This relationship is more easily noticed when Leibniz

- introduced pairs of terms, such as *perception and apperception*.
- specified a term, which becomes a guiding principle of Wundt, e.g., the conception of *parallel (synchronous) change* of mental and physical processes (see Wundt's *psychophysical parallelism*); the distinction between the *effective cause* of the bodily and the *final cause* of the mental changes (see Wundt's *natural causality* and *mental causality*);
- used analogous terms like *appetite and aspiration* corresponding to Wundt's *activity* and *will*, or *perspective* instead of Wundt's *point of view*.

Other correspondences to Leibniz's thoughts can only be recognized when Wundt's complex work is looked at in greater detail.

The topics selected were:

Four basic postulates (guiding principles): the *Law of Continuity*, the *Principle of Harmony*, *Individuality* and *Autonomous Activity*, as well as ten major issues:

- Monads and the mind (soul): substance and actuality.
- Epistemology: psychologically-reflected idealism – as opposed to sensualism (empiricism).
- Parallelism: psychophysical and harmonically pre-stabilized correspondence.
- Perception and apperception.
- Consciousness and self-awareness, the individuality (the person).

- Striving and appetite, volition (the will), intellectualism and voluntarism.
- Principles of sufficient reason, principles of causality and purpose, unity - plurality, perspectivism.
- Concepts of development (evolution).
- Ethics and the idea of humanity.
- Monism.

For each subject, attempts are made to bring together, firstly, Wundt's theory of knowledge (epistemology), in particular, his *theory of science*, and, secondly, to draw attention to the *consequences for methodology and research in empirical psychology*.

In previous books the leitmotifs of Wundt and the impact (reception and criticism) of Wundt's work are already described and commented upon: *Wilhelm Wundt – Pionier der Psychologie und Außenseiter?* (trans. *Wilhelm Wundt - Pioneer of Psychology and Outsider?* (2011)), *Zur Kategorienlehre der Psychologie* (trans. *On Categories in psychology* (2013)), *Theoretische Psychologie* (trans. *Theoretical Psychology*) (2015a) and *Wilhelm Wundts Kulturpsychologie (Völkerpsychologie): Eine Psychologische Entwicklungstheorie des Geistes* (trans. *Wilhelm Wundt's Völkerpsychologie - cultural psychology: A psychological theory on the development of mind* (2016b)).

Quotes from Wundt

Wundt refers to a wide range of philosophical ideas from Greek philosophy right up to modern times, as his themes and books show. English and French philosophers and natural scientists are mentioned occasionally. Darwin stands out here in comparison to the English empiricists and French intellectuals. Wundt (1874), in the *Preface* of his *Principles of physiological Psychology*, had described Kant and Herbart as the most important philosophers in forming his own views. Anyone who accepts this will find that Wundt is critical of both these intellectual traditions. Later on, he distances himself from Herbart's doctrine of the soul and, in particular, from his "mechanistic" understanding psychological relationships and pseudo-mathematical speculations. (1874, Chapter 19). – Kant's critical reasoning and the rejection of a "rational" psychology, deduced from the metaphysics, acknowledges Wundt, but he contradicts him in his essay *Was soll uns Kant nicht sein? (What Kant should we reject?)* (1892a) with regard to the forms of perception and presuppositions, as well as Kant's system of categories of being and his position in the dispute on causal and teleological explanations. – On the other hand, Leibniz has the far greater and more constructive influence on Wundt's psychology, philosophy, and epistemology. (In Wundt's most important books, there are hundreds of references to Leibniz; much more than to Kant and Herbart.)

To quote Wundt is not easy, because some of his basic books exist in revised editions and, thus, differ in their content and wording. There are also differences between some of the central essays (1894, 1896, 1904) and corresponding texts in the books. However, the idea that there are serious divisions in Wundt's work (e.g., Graumann, 1980) cannot be accepted because important aspects and principal positions are already apparent in the books of 1862, 1863, and 1874 at the latest. In the following, quotes sometimes are taken from the first edition of a book to illustrate developments, but often from the last edition of *Grundzüge (Principles, 6th ed. 1908-1911)*, of *System der Philosophie* (trans. *System of Philosophy*) (1919), *Logik (Logic)* (1919-1921) and *Ethik (Ethics)* (1912a), in order to reproduce the most recent version in the most comprehensive edition.

The elaborated version of this essay (Fahrenberg, 2016a) contains additional quotations from Leibniz's work and, also, from Wundt with regard to methodology and empirical psychology. as well as further explanatory notes and comments from the *Historisches Wörterbuch der Philosophie* (Ritter et al., 1971-2007) and secondary references. In addition, four digressions are included: (1) Fechner's view of "identity" of the mental and the physical side in contrast to Wundt's "epistemological parallelism"; (2) Wundt's theory of apperception and empirical apperception research; (3) Wundt's standpoint regarding non-conscious psychic processes, and (4) Wundt's principles of mental causation. Furthermore, the history and reception of the essential thoughts presented are reviewed accounting for the following aspects : (1) Wundt's comprehensive appraisal and criticism of Leibniz's philosophy; (2) the more recent reception of Leibniz's *philosophical psychology* in the fields of psychology and philosophy, (3) Wundt's perception of other philosophers, especially Kant and Herbart, and (4) Wundt's standpoint concerning the close relationship between philosophy and psychology in order to allow for critical reflection of philosophical presuppositions inherent in empirical psychology.

2 Leibniz and Wundt on psychology

2.1 The Law of Continuity, the Principle of Harmony, Individuality and Autonomous Activity

Four fundamental concepts in Leibniz's thinking are highlighted. Leibniz repeatedly calls the *Law of Continuity*, with its concept of infinity as one of his fundamental insights. The *principle of harmony* in the order of natural and spiritual occurrences, as well as *unity within plurality* and its corresponding *perspectivism*, form a second fundamental guiding idea. Two other philosophical standpoints are essentially related to psychology. These are the fundamental differences between single monads constituting their *individuality*, and their *autonomous activity*. This can be seen in the *aspiration* (or *appetite*, *entelechy*) of the *individual* and in the *general development* (evolution) and, thus, indicates a *voluntarist tendency* in Leibniz's philosophy.

The Law of Continuity

Leibniz's general Law of Continuity states that changes, for example a movement caused by an impact, do not occur abruptly, but proceed in a continuous transition from the point of view of the *infinitely minute*:

"Nothing takes place suddenly; one of my great and best confirmed maxims says that nature never makes leaps. I have called this maxim the Law of Continuity. . . . This law is essential in natural science. It implies that any change from small to large or vice versa passes through something in between" (NE, I, p.12).

The law of continuity applies generally. That means not only in physics but also in the continuum of sensory impressions, which are consciously perceived and then only with sufficient intensity. Thus, this law acquires an important significance for psychology when Leibniz describes the transition from the unperceived (indiscernible) or the barely conscious, to an awareness of sensory impressions and to self-consciousness, i.e. the apperceptive process.

The Principle of Harmony and unity within plurality

79. *"Souls act according to the laws of final causes, through appetite, ends and means. Bodies act according to the laws of efficient causes, i.e. the laws of motion. And these two realms, that of efficient causes and that of final causes, harmonize with one another." (MON, p. 11)*

Harmony means unity in plurality (*unitas in multitudine*). The principle of *harmony in the world* states: "The world is not only convenient, but also harmonious as each individual is adapted not only to his own destiny, but also to those of all others" (Wundt, 1917, p. 117).

"The infinitesimal concept, the principle of active power, self-awareness as a spiritual unity, have also formed effective philosophical motives, but it was decisive for Leibniz that no system, like the monadological one, included the shared identity of the whole to a supreme and satisfying unity of the idea of God. Thus, for the fundamental idea of the harmony of the universe, there are two terms which are opposed to one another but have the same reference: *universal harmony* is the philosophical aspect and the *pre-stabilized* is the theological aspect" (p. 118).

Individuality (Person)

1. "My topic here will be the monad, which is just a simple substance. By calling it 'simple' I mean that it has no parts, though it can be a part of something composite." (MON, p. 1).

9. "That shows that some monads must be qualitatively unlike some others; but now I go further. Indeed, every monad must be qualitatively unlike every other. That is because in Nature no two things are perfectly alike; between any two things a difference can be found that is internal – i.e. based on what each is like in its own nature rather than merely on how they relate to other things, e.g., where they are in space.

10. I take it for granted that every created thing can change, and thus that created monads can change. I hold in fact that every monad changes continually." (MON, p. 2).

"These insensible perceptions also indicate the same individual, who is characterized at any given time *T* by the traces of his earlier states that are preserved in his perceptions at *T*, thereby connecting his past states with his present state. Indeed, the insensible perceptions don't merely indicate or mark that this is the same individual as the one who . . . etc., they constitute his individuality – they make him one and the same individual all through. Even when the individual has no sense of the previous states, i.e. no longer has any conscious memory of them, they could be known by a superior mind because traces of them do now really exist. (And those trace-preserving perceptions also provide a means whereby it might become possible to gradually improve ourselves to the point where we can recover our memories at need.)" (NE, I, p. 10).

Autonomous activity (aspiration, entelechy)

11. "From what I said in 7 it follows that natural changes in a monad – ones that don't come from divine intervention – come from an internal force, since no external causes could ever influence its interior." (MON, p. 2).

15. "The action of the internal force that brings about change – brings the monad from one perception to another – can be called *appetition*. Appetite cannot always get the whole way to the perception towards which it is tending, but it always gets some of the way, and reaches new perceptions – that is, new temporary states of the monad." (MON, p. 3).

48. "In God there is

- (i) power, which is the source of everything, then
- (ii) knowledge, which contains every single idea, and then finally
- (iii) will, which produces changes in accordance with the principle of what is best. And these are what correspond, respectively, to what in created monads constitute
 - (i) the subject, or base, or basic nature of the monad itself,
 - (ii) the faculty of perception, and
 - (iii) the appetitive faculty.

But in God these attributes are absolutely infinite or perfect, whereas in created monads ... they are only imitations of the divine attributes, imitations that are more or less close depending on how much perfection they possess." (MON, p. 7).

2. 2 Monads and the mind (soul): substance and actuality

Leibniz's philosophy is undoubtedly centred on the Christian faith in God and the belief in an immortal individuality (soul=spirit). It can be seen that this principle of the soul is traditionally – and right up to the present time of popular psychology – conceived in the philosophical categories of *underlying substance*: each individual soul has different characteristics. Leibniz explained his doctrine of the souls in his *Monadology* (1714), which has since found many interpretations. The epistemological context is important because Leibniz deepened the traditional doctrine of the categories through his philosophical thoughts about substance and accident, the perseverance and the actuality of substance, its origin and change, about causation and sufficient reason. From a different perspective, which is mainly related to the dynamics of physical processes, Leibniz describes the continuous changes whose mathematical formulation leads to the infinitesimal calculus.

"Leibniz developed the concept of the monad, which he used for the first time in 1696, to deal with Descartes' dualism and Spinoza's intrinsic concept of monism. Leibniz postulates an infinite number of ideal, individual and dynamic substances which – although without a window – reflect or represent the whole universe. Monads are active because of their inner motivation; Leibniz thus also uses the term *entelechy*. He speaks of *souls* when these entelechies are accompanied by memories, and of *rational souls* or *spirits* ("ame" "raisonnable", "esprit") when the *perception* of external things leads to *apperception* combined with awareness and reflexive knowledge" (Poser, HWPh, Vol. 6, pp. 117-121).

Wundt shows that Leibniz gives the essence of the soul special attributes: independence, simplicity, and tenacity. Here, Wundt recognizes the beginning of a new doctrine of the soul that is determined by *psychological* concepts: individuality, perceptive and apperceptive processes, memory, motivation and coping with the common fundamental feature of *change*. The soul is characterized by its *actuality* and *development*.

Quotes from Leibniz

Leibniz gives general definitions of the monad: simple, without parts, with neither extent nor form; each monad is different from all other monads, each one has continuous change within it, and indeed has the disposition to change.

1. *"My topic here will be the monad, which is just a simple substance. By calling it 'simple' I mean that it has no parts, though it can be a part of something composite.*
2. *There must be simple substances, because there are composites. A composite thing is just a collection of simple ones that happen to have come together.*
3. *Something that has no parts can't be extended, can't have a shape, and can't be split up. So, monads are the true atoms of Nature – the elements out of which everything is made. ...*
10. *I take it for granted that every created thing can change, and thus that created monads can change. I hold in fact that every monad changes continually.*
12. *But in addition to this general force for change that is the same in all monads, there must be the detailed nature of the individual changing simple substance, this being what makes it belong to one species rather than another." (MON, pp. 1-2).*

28. *In human beings, the perceptions often follow from other perceptions under the influence of memory; as with empiric physicians, who have elementary technique without theory. [An 'empiric' is someone who cares about which generalizations hold up in practice, but not about why, J. B.] We are all mere empirics in three quarters of what we do. For example, we are empirics in our expectation that the sun will rise tomorrow because it has always done so up to now. Only the astronomer believes it on the basis of reason. In this empiric aspect of their lives, humans operate in the same way as the lower animals do.*

29. *What distinguishes us from the lower animals is our knowledge of necessary and eternal truths and, associated with that, our having a kind of 'following from' that involves necessity and depends on reason, rather than merely the 'following from' of the animals, which is wholly contingent and depends on memory. This is what gives us reason and science, raising us to the knowledge of ourselves and of God. And it's what is called 'rational soul' or 'mind' in us. (MON, p. 5)*

48. *In God there is*

(i) power, which is the source of everything, then

(ii) knowledge, which contains every single idea, and then finally

(iii) will, which produces changes in accordance with the principle of what is best.

And these are what correspond, respectively, to what in created monads constitute

(i) the subject, or base, or basic nature of the monad itself,

(ii) the faculty of perception, and

(iii) the appetitive faculty.

But in God these attributes are absolutely infinite or perfect, whereas in created monads. ... they are only imitations of the divine attributes, imitations that are more or less close depending on how much perfection they possess. (MON, p. 7)

83. *I have noted some differences between ordinary souls and minds. Here is another. Souls in general are living mirrors or images [here = 'likenesses'] of the universe of created things, but minds are also images of the Divinity himself, i.e. of God, the author of Nature. They are capable of knowing the system of the universe, and of imitating aspects of it through sketchy constructions of their own, each mind being like a little divinity within its own sphere." (MON, p. 12).*

Wundt on Leibniz

Wundt interprets the concept of the monad: they are quite uniformly conceived as spiritual beings whose concept is the external world, and which form a continuous sequence of development in which each is different from the other, and yet each is similar to the other (1917, p. 86). What is essential is the "imagining and striving" of these smallest of things, i.e. these indivisible and independent spiritual units. "Here lies the great progress of the German philosopher in contrast to his predecessors: it is the transition to developmental thought, not yet in the form of becoming, but similar to a century later in German natural philosophy, in the form of having-become." (p. 85 ff). The Leibniz Monad "is given to us directly in our own consciousness. Even in this infinite number of strivings and ideas and though infinitely dark, our self-awareness clearly gives us the very essence of the soul. This essence is a continuous activity, an incessant flow of mental processes, and never, ever substantiality" (p. 88).

For Leibniz "the world is a system according to the purpose of ordered movements without a substrate other than that of the active forces themselves" (p. 108).

Wundt's point of view

Wundt assumes and expands the *principle of actuality*. However, he rejects a metaphysical derivation of empirical psychology based on the principle of the soul. "For empirical psychology, the soul can never be anything other than psychic experiences with their actual connections and nothing that is added to them from external and internal sources." (1900, I, p. 9). "The spiritual individual or soul is nothing but the connection of mental processes ..." (1894, p. 102). "Our soul is nothing other than the sum of our inner experiences, our imaginings, feelings, and will, as it is consciously combined into a unity, and finally, in a succession of developments, to elevate itself to a self-consciousness of thought and free moral will." (1897b, p. 516). According to Wundt's conviction, the mental (spiritual) is not to be determined structurally or even in substance, but only to be recorded in actuality. This means "the immediate reality of the occurrence in the psychological experience." (1920b, p. 393). The "soul" is an expression of the inner experience that is in constant and steady flowing movement. Life is a unified, psychological and physical process that can be viewed in different ways in order to recognize general laws, in particular the laws governing psychological-historical development.

Wundt follows neither the theologically – oriented-monadology – nor the more general postulate of an "essence of the soul" For him, also, "rational soul or mind" are the attributes of man. However, Wundt goes a radical step further in the definition of "soul": in principle, he dissociates himself from traditional ontological postulates defining the "soul" (the "soul's essence" or "monad") as a substance. He calls for recognizing and empirically examining mental events in the "pure actuality". This postulate has fundamental consequences for the understanding of psychology and for empirical-psychological research and it marks a fundamental break with tradition.

Consequences for epistemology and methodology

Wundt's postulate of actuality has far-reaching theoretical significance for the definition of psychology and important epistemological and methodological consequences. The *principle of actuality* calls for the development of an empirically founded *process theory* of mental (psychic) events, instead of a theologically reasoned spirit and essence (of the immortal soul). From the doctrine of the soul (spirit), a psychology of mind and consciousness emerges which is based on the whole, that is, both the *internal* and the *external experience*. The empirical psychology has to clarify how the elementary psychical changes develop, and to investigate the way the elements are connected. – According to which particular *categories* the continuous stream of consciousness is to be recorded, with which *relational terms* is the correlation of the psychological changes to be described? From the law of continuity and the principle of pure actuality, the central task of empirical psychology is to investigate the "psychic connections" of sensations, thoughts, feelings and willing. Does the *causal principle* apply generally or is the *principle of purpose*, the teleological aspect, required when the *principle of sufficient reason* is valid? In his theory of *apperception*, Wundt has thus worked out a complex psychological frame of reference.

Wundt's (1913) warning of the consequences of a separation of psychology from philosophy (see, Section 3.2) can be seen against this background. Because of the heterogeneous traditions of thought and the controversial metaphysical presupposition of a "soul principle" and "soul science", the critical consideration of such absolute presuppositions remains necessary so that it is not the individual metaphysical convictions determining the development of psychology without discussion.

Reception and criticism

Wundt's replacement of the metaphysical concept of souls with the principle of *pure actuality* found immediate rejection on *two* sides. Philosophers, especially Eduard von Hartmann (1900, 1901), considered it impossible to conceive of an actuality as independent of substance. If "soul" is only an expression of the inner experience which is present in a continuous change, then this view is completely contradictory to fundamental Christian convictions. At that time, Wundt provoked highly polemical reactions from Christian-oriented philosophers and psychologists against this "psychology without a soul" or the "denial of the soul" (see Fahrenberg, 2011, 2015a; Scheerer, HWPh, Vol. 9, pp. 52-89). However, Wundt does not follow the emerging positivist and materialist positions of his time, as consciousness and mind remain fundamental concepts of his psychology. He did not adopt the formulation of the "psychology without soul," from Lange's critique of materialism (1866, p. 474). The following statements on the definition of man are essential (1921, pp. 15): "At first, the individual human being is understood as a thinking and a willing subject actively engaged in experience. ... There are three general characteristics which are intimately interrelated: the determination of value, purpose, and the exercise of will." – These categories are alien to the natural sciences.

2.3 Epistemology: Psychological-reflected idealism as opposed to sensualism (empiricism)

"Nihil est in intellectu, quod non fuerit in sensu, excipe: nisi intellectus ipse." (trans. "Nothing is in the mind, which was not before in the senses, except the intellect itself.") Leibniz dissociates himself in an ironically effective manner from John Locke and other supporters of sensualism and empiricism. Thought and knowledge are not based solely on perception of the senses. The inner conditions include the pure ideas and the first principles and axioms of thought as well as the basic characteristics, dispositions and inner experience. The mind is not to be compared with a tablet wiped-clean (*tabula rasa*). Thus, the logic is not contained in sensory stimuli. Perception and apperception are not passive forms of reception, but active processes which are influenced by individual aspirations and feelings. Leibniz asserts that sensory impressions are not simply perceived; they are selected and modified when they are integrated into the consciousness. The laws according to which this process takes place are, beyond their epistemological theorem, the guiding principles of empirical *psychology* – even if Leibniz does not use this term.

Wundt quotes Leibniz on the title page of his first book and his *Contributions to the theory of sensory perception* in 1862 but is by no means totally unreserved in the text itself. He must deal with Kant's incisive critique of knowledge, and he can ask more psychologically differentiated questions about the connection between internal and external experience on the basis of Fechner's psychophysics and on his own research at Helmholtz's laboratory in Heidelberg. Wundt later described his epistemological position as *critical realism*.

Quotes from Leibniz

"Our disagreements concern points of some importance. There is the question whether, as Aristotle and Locke maintain, the soul in itself is completely blank like a page on which nothing has yet been written; everything inscribed on it comes solely from the senses and experience; [In this work 'soul' = 'mind', with no religious implications. J. B.] or whether, as Plato and even the Schoolmen hold, the soul inherently contains the sources of various notions and doctrines; none of these

comes from external objects, whose only role is to rouse up the notions and doctrines on suitable occasions" (NE, I, p. 3).

"But to reflect is simply to attend to what is within us, and something that we carry with us already is not something that came from the senses! So, it can't be denied that there is a great deal that is innate in our minds and didn't come through the senses, because we are innate to ourselves, so to speak. Our intellectual ideas that we don't get through the senses include the idea of being, which we have because we are beings, of unity, which we have because each of us is one, of substance, which we have because we are substances, of duration, which we have because we last through time, of change, which we have because we change, of action, which we have because we act, of perception, which we have because we perceive, and of pleasure, which we have because we have pleasure; and the same holds for hosts of other intellectual ideas that we have. Our distractions and needs prevent our being always aware of our status as beings, as unified, as substances, as lasting through time etc., but these facts about us are always present to our understanding; so it's no wonder that we say that these ideas of being, of unity, etc. – are innate in us. I have also used the analogy of a veined block of marble as opposed to an entirely homogeneous one or to an empty page." (NE, I, pp. 6-7).

"The realm of the 'intellectus ipse' includes all that the mind cannot acquire through the senses but can only find within itself: the clear and intellectual ideas, the first principles and axioms, as well as the necessary truths, to which the idea of God is a part as well as the "verité immediate" (trans. 'immediate truth'): 'J'existe ... Je suis.' (trans. 'I exist ... I am')." (Metz, HWPh, Vol. 11, pp. 809-820).

Quotes from Wundt

"In Leibniz, the phenomenon is based on the same need for thought as being"; here we can only express the eternal truth "the thinking subject knows itself differently from the surrounding world, but that this world is just as necessary to him as belonging to it." The "raw sensory perception" is, at first, only a facade; to appear first when it becomes "a task which can never be completed" until it is then recognized in the causal connection of the individual and in the logical order of the whole" which also includes the acceptance of errors. "Leibniz has called this 'the principle of the relativity of knowledge' or 'the barrier'. It is bound to the essence of man and to the pursuit of overcoming and to the impossibility of attaining this goal" (1917, p. 97).

Wundt's point of view

Initially, Wundt stated that "The object of the psychological inquiry is the internal experience, the feeling, the imagining and the thinking" (1863, I, p. 1). "Physiology reveals those phenomena of life which can be perceived by our external senses. In psychology, man looks at himself as it were from the inside and seeks to explain the connection between the processes which this inner observation offers him (1874, p. 1). – This definition of psychology, as a science of inner experience, Wundt later emphasized as inadequate. The "original unity of experience" as the external and the internal experience do not differ according to the object, but merely from which angle (perspective) it is viewed. "Natural science seeks to determine the properties and reciprocal relationship of objects; it therefore generally abstracts ... from the subject": its mode of knowledge is therefore indirect, abstract and conceptual. Psychology challenges this abstraction; it considers

the subjective and objective factors of immediate experience in their interrelationships; their mode of knowledge is, therefore, a direct, concrete intuition (1920b, pp. 1-6). Elsewhere, he argues that "psychology is a science coordinated to the natural sciences, and that the modes of observation complement each other in the sense that they together exhaust the experience which is possible for us" (1896, p. 12; see, 1920b, 17-19).

In a series of essays, Wundt (1896-1898) explains his concept of *critical realism* and distances himself from transcendental philosophy, immanence philosophy, philosophical idealism, spiritualism, logicism, neo-thomism, materialism, empiriocriticism, the beginnings of positivist conceptions (Avenarius, Carstanjen, Mach) and of philosophical phenomenology:

"In the sense of my 'realistic' epistemology, I postulate objects, that is to say they are spatial-temporal, independently existing contents of experience as originally given. I also endeavoured to show that all efforts of idealistic or dualistic epistemic theories, which regarded objects as originally subjective representations, and which were then thought of as objects only afterwards as a result of some secondary criteria had failed and had to fail" (1904, p 341).

"All experience is at first internal experience and what we call external experience is governed by our forms of representation and concepts. From this position, however, it does not necessarily follow that the unified worldview sought by the sciences must necessarily be an idealistic one. We do not construct the world through our thinking (as speculative idealism asserts), but rather form the objects by purposeful processing of the content of experience" ... as objective certainty of those facts cannot be removed by progressive corrections of the perceptions" (*Logic*, 1919-1921, I, p. 414).

"Objects or things are independent of our will and complexes of sensations to which spatial independency and temporal consistency belong" (p. 451)

"The philosophical theory of knowledge, therefore, is to set the boundaries between what is given to our thinking and what it itself brings to the point where the logical influences within the experience are justified. This means from where they begin to claim a right, and which does not belong to them. Here lies an area before us, where philosophy can be complementary, corrective and fruitful to the empirical sciences" (1876, p. 21).

"From experience comes the special form of the connection of the phenomena according to cause and effect, but the desire to comprehend this connection as universal and necessary comes from the nature of our mind" (1876, p. 18).

Wundt's tendency to dualism of internal and external experience (not of soul and body) in the *Grundzüge* (1874, see, also 1863, p. 1) has developed into a monistic concept and a perspectivism which can be misunderstood as dualism. Wundt gave his epistemology in its last systematic form in *Logik* (1919-1921). – Wundt is convinced that every single science contains general presuppositions of a philosophical nature. He calls them *metaphysical* because they lie beyond immediate experience. The theory of knowledge is intended to help the sciences to find, clarify and, if possible, free them from their metaphysical aspects. Psychology and the other sciences are always dependent on the help of philosophy, and especially on logic and epistemology.

Consequences for epistemology and methodology

The relationship between internal and external experience and the distinction between the *psychic (mental) causation* and the *natural causality* form the most important epistemological postulates as they lead to Wundt's system of principles and allow for the development of an adequate methodology. Empirical psychology, on the one hand, is to be inductive, and to develop and

combine new methods as well as to follow certain guiding principles. On the other hand, psychology must have an empirical basis within the general experience of man. Psychology is not to be derived deductively from a metaphysical position, nor from scholastic conceptual definitions or from naive introspection and personal life experience. To interpret the relationship between these different levels in Wundt's thinking and to understand his perspectivism remains a major challenge.

Reception and criticism

An account of the controversies of the time was given by Sichler (1914) *Zur Verteidigung der Wundtschen Psychologie (In Defense of Wundt's Psychology)*. In a letter to the philosopher Hans Vaihinger, Wundt (1918) describes unusually briefly his philosophical position against positivism and empiriocriticism.

Wundt – like Leibniz – assumes an intrinsic self-activity of apperceptive psychic syntheses. This activity already comes out in the deliberate control of attention. In the tradition of Leibniz, Wundt rejects the *tabula rasa* assertion of Locke's sensualism, and he also opposes elementary (reductionist-mechanistic) association psychology. The controversy between assumptions about an intrinsically active mind and passive reception remained highly complex in terms of philosophy and terminology. Ernst Mach (1886) later formulated the empiricist (positivist) position. This controversy is still present today in the mentalistic and voluntaristic as opposed to physicalistic and reductionistic philosophies on the subject of *free will* or, more specific, in neuroscience research, e.g., on the active or passive control mechanisms of attentional processes, located in the frontal cortex.

2. 4 Parallelism: psychophysical and harmonically pre-stabilized correspondence

Leibniz introduced the concept of *parallelism* in regard to the relationship of soul and "material events" (body): for the "double nature of man" and thus contradicts traditional dualism (interactionism). The conceptions of Descartes and Spinoza are important as well as the law of continuity, the principle of harmony, and the interpretation of causality and purpose. Leibniz is not confined to asserting, in consciousness and physical processes, *two continuous and synchronous* series of changes without interaction. "The soul and body resemble two clocks which are so arranged that their running times agree with each other for all time." ⁴

He proceeds from the ontological postulate to epistemology – the two domains differ not only in terms of phenomena but also in terms of categories, as they require different relational concepts: namely *purpose* of aspirations and causes of effect (or movements) in the physical sense, with both domains being in harmony.

"As a philosophical term, G. W. LEIBNIZ first uses the word 'parallelism';⁵ he thus identifies one of his philosophical theses, which states that between the processes of the soul and the material events there is a perfect parallelism, ... that the soul, along with its activities, is something different from matter, but is always nevertheless together with the organs of matter'. This thesis is

⁴ G. W. Leibniz: Philosophische Schriften, ed. C. I. Gerhardt 4 (1880), p. 498. Leibniz - Die philosophischen Schriften, hg. Gerhardt Band 4. djvu p. 498.

⁵ G. W. Leibniz: Consid. sur la doct. d'un esprit universel unique (1702). Philosophische Schriften, ed. C. I. Gerhardt 6 (1885/ND 1965) p. 533.

based on the idea of fully recognizing – what was once the mechanistic-scientific research method, but at the same time bringing it into full effect" (Muck HWPh, Vol. 7, pp. 98-99). –

"The hypothesis of psychophysical parallelism raises a number of scientific and philosophical problems, the solutions of which have a direct impact on the scientific status and methodology of psychology." (Hildebrandt, HWPh, Vol. 7, pp. 100-107).

Wundt coined the term *psychophysical parallelism* for his particular methodologically refined version of parallelism following Spinoza, Leibniz, and Fechner. In terms of *categories*, psychology and (neuro)physiology require distinct conceptions, while in *methodological* terms a coordinated view of the mental and the physical parallel process is necessary. But Wundt regards the position of psychophysical parallelism as merely heuristic and rejects an ontological definition. A critical comparison with Fechner's postulate regarding *identity* of the mental and the physical side can facilitate the understanding of Wundt's position.

Quotes from Leibniz

77. *"So it can be said that not only is the soul – the mirror of an indestructible universe – indestructible, but so too is the animal; though its mechanism may often come to an end in part, and throw off or take on organic coating.*

78. *These principles gave me a natural way of explaining the union of the soul with the organic body, or rather their conformity with one another. Soul and body each follow their own laws; and are in agreement in virtue of the fact that, since they all represent the same universe. There is a pre-established harmony among all substances.*

79. *Souls act according to the laws of final causes, through appetition, ends and means. Bodies act according to the laws of efficient causes, i.e. the laws of motion. And these two realms, that of efficient causes and that of final causes, harmonize with one another.*

80. *Descartes recognized that souls can't impart force to bodies, because there is always the same amount of force in matter. He believed, though, that the soul could change the directions of bodies. But that was because in his day the law of Nature which maintains the conservation of the same total direction in matter was unknown. If he had been aware of it, he would have ended up with my system of pre-established harmony.*

81. *This system maintains that bodies act as if there were no souls (though there couldn't be no souls); and souls act as if there were no bodies. And both act as if one of them influenced the other" (MON, p. 11).*

Quotes from Wundt

"With sufficient certainty the proposition can well be regarded as justified, that nothing is happening in our consciousness which would not find its physical basis in certain physiological processes. The simple sensation, the synthesis of sensation into representations, the association and retrieval of ideas, and finally the processes of apperception and the voluntary action, are accompanied by physiological processes of the nerves. Other physical processes, such as, in particular, simple and complex reflexes do not in themselves enter consciousness, but form essential preconditions of the conscious or, in the narrow sense, psychological facts" (1874, pp. 858f). Wundt (1894) gave a detailed account of this concept in his essay on *Psychic Causality and the Principle of Psychophysical Parallelism*, only incidentally mentioning Spinoza and Fechner.

Influenced by Leibniz, Wundt introduced the term psychophysical parallelism as follows: "... wherever there are regular relationships between mental and physical phenomena the two are neither identical nor convertible into one another because they are per se incomparable; but they

are associated with one another in the way that certain mental processes regularly correspond to certain physical processes or, figuratively expressed, run 'parallel to one another'." (1908-1911, III, p. 746). Although the inner experience is based on the brain function there are no physical causes for mental changes. He emphasized that "the two groups of phenomena that are correlated here" are absolutely incomparable "because of the underlying abstractions", i.e. the substantiality of objective natural phenomena, and the immaterial quality of psychical (mental) processes. In contrast to Spinoza and others, Wundt does not want psychophysical parallelism to be understood simply as a metaphysical process but as a *heuristic principle* of empirical psychology (p. 773). "For it is merely a mode of observation which allows for two complementary scientific standpoints, the purely objective ones of natural science and the subjective ones of psychology, and which can be linked without contradiction. But since none of these points of view contains the full reality, the heuristic principle of psychophysical parallelism cannot claim to be more than a maxim which is so long indispensable as to deal with the results of the empirical natural research on the one hand and that of empirical psychology on the other." (p. 750). He regards metaphysical parallelism as just as untenable and arbitrary as Cartesian dualism or Berkeley's idealism. Wundt's view of psychophysical parallelism is not ontologically meant, but rather as heuristic in epistemological and methodological terms. The tools of physiology were not only preliminary, but fundamentally inadequate for the task of psychology itself. Such a commencement is pointless, "because it would itself be incomprehensible to the connections of the psychical processes, even if the assembly of the brain functions were as clear to us as the mechanism of a pocket watch." (p. 754).

"Man is certainly not a union of two different substances, but a uniform whole whose qualities lead to a differentiation of physical and psychical phenomena. But as these do not appear separately in reality, they cannot thus be separated" (1919-1921, III, p. 35). The integrated life process is divided into two parallel, non-reducible chains only for methodological-heuristic reasons in scientific investigations.

Consequences for epistemology and methodology

From the postulate of psychophysical parallelism follow the consequences for definition, along with the methodology of empirical psychology. There is no "substantial" action or interaction of the two aspects, and the *categorical* autonomy of both areas of this "duality" as well as the principles of this parallel process must be determined more precisely. Fundamental is the distinction between the *natural causality* of brain physiology and the *psychic (mental) causation* in consciousness. Both causal series are mutually separated but in parallel. Psychological and physical causation, however, are not opposed to each other in the dualistic-metaphysical sense, but depend on the point of view (Wundt, 1894, 1908-1911, 1919, 1920b). He takes up Leibniz's *principle of sufficient reason*, interprets the principle of causality and the principle of purpose as related aspects, and insists that the principle of purpose, i.e. the teleological view, is fundamental to psychology (see Section 2. 8). Psychophysical parallelism is not a "metaphysical" concept of the "mind-body problem", but this position has major consequences for empirical psychology. There are two fundamentally different ways of viewing the postulated psychophysical unity, not merely the two views in the sense of Fechner's identity postulate. The psychological and the physiological statements are in two categorically different reference systems. In principle, Wundt requires, wherever possible, a twofold examination, so that the underlying physiological processes are taken into account, even if this psychophysical and psychophysiological approach was still in its beginnings at that time. Physiological methods are auxiliary methods, e.g., the measurement of reaction times and the

recording of pulse and respiratory curves in research on emotions; they correspond to the physical auxiliary methods of psychophysics. – "The attribute 'physiological' does not mean that it [physiological psychology] wants to trace psychology back to physiology – which I consider to be a point of impossibility – but that it is associated with physiological, that is, experimental devices and moreover as regards the relationships of the psychical to the physical processes, more than is customary in general psychology." (1896, p. 21).

Wundt's position differed from contemporary authors who also favoured parallelism. Instead of being content with the postulate of parallelism, he developed his principles of *mental causality* in contrast to the natural causality of neurophysiology, and a corresponding methodology. There are two fundamentally different approaches of the postulated psychophysical unit, not just two points-of-view in the sense of Gustav Theodor Fechner's identity hypothesis. Psychological and physiological statements exist in two categorically different reference systems; the important categories are to be emphasized in order to prevent category mistakes as discussed by Nicolai Hartmann.

Wundt's assumption of psychophysical parallelism and the process theory (principle of actuality) constitute the basis of his system. The parallelistic view leads consistently to the distinction of psychic causality from natural causality, to the new epistemic principles of mental causation. The epistemological postulates have methodological consequences appropriate to psychology: two supplementary reference systems, coordinated application of the principle of causality and the principle of purpose and further heuristics as well as the multimethod approach. In this respect, Wundt created the first genuine epistemology and methodology of empirical psychology.

Reception and criticism

Wundt's *categorically founded psychophysical parallelism* corresponds to Leibniz's concept and differs from Fechner's position (1851, II, p. 348; 1861, p. 221). The main problem of identity theories is the ambiguous expression "identity". How can an epiphenomenalism be avoided for which the "internal view" is only a marginal phenomenon and a shadow of brain physics? What are the logical and methodological implications of assuming a *cross-modal identity*? (Hoche, 1990, 2008)

Wundt's formulations differ between his early and later publications with critics pointing out these uncertainties, e. g., Külpe, Meumann (see, Fahrenberg, 2011, pp. 396-403).⁶ Wundt, it seems, initially found it difficult to accommodate all the mental processes, even the most creative of these, in his general framework. He finally came to terms with this consequence and his later statements are more concise in the sense of a seamless correspondence of both views. The designation as an "epistemological dualism" is inadequate, since Wundt is concerned with the distinction *and* the union of modes of observation. – In today's terminology, attempts can be made to describe the categorically distinct but indispensable and mutually corresponding modes of observation as *complementary* with reference to Bohr's complementarity principle in physics. However, due to a logical and methodological evaluation of these concepts, it seems appropriate to state two mutually complementary *perspectives* or two *categorically distinct frames of reference* (Fahrenberg, 2013).

⁶ In his final years, Wundt again dealt with the interpretation of psychophysical parallelism and attempted to elucidate his concept (letters to the Swedish philosopher Allen Vannerus (16 March 1919) and to his Swiss correspondent Albert Sichler (22 June 1961) 1920) <http://kalliope-verbund.info/DE-611-HS-2220666> <http://kalliope-verbund.info/DE-611-HS-2220811>).

2. 5 Perception and apperception

Leibniz's distinction between *perception* and *apperception* is one of his most famous contributions to psychology. Apperception has two meanings: firstly, a *clear awareness* of a previously rather weak sensory impression, and, secondly, the inclusion of a sense-impression into *consciousness* and *self-awareness* as perception and reflection. The subsequent discussions about the individual and the person can therefore also be referred back to Leibniz. There is a philosophical tradition from Leibniz's conceptions of perception and apperception right through to Wolff, Kant and Herbart. Here, however, the influence on Fechner's psychophysics and above all on Wundt's *apperception theory* with an experimental psychological underpinning is more important.

"With the term 'perceptions petites' (or perceptions insensibles, indistinguables, imperceptibles) a basic concept of monadology, LEIBNIZ indicates ideas that the soul possesses without being aware of them, because they are too weak, too numerous or too uniform and must be able to be perceived and retained separately. Frequently used popular analogies are the roar of the sea, the sound of a waterfall, the murmuring of a crowd. ... The p.p. motivate the will to its 'instinctive actions' ('actions indélibérées')" (Janke HWPh, Vol. 7, pp. 236-238). "As a philosophical term, the 'apperception' of Leibniz has developed into perception. ... The distinction between perception ('qui est l'état intérieur de la monad, représentant les choses externes' trans: 'which is the internal state of the monad, representing external things') and A. ('qui est la conscience ou la connaissance réflexive de cet état intérieur' trans. 'which is the consciousness or the reflexive knowledge of this internal state') makes it possible for the modernist to be present in all areas of being. Here, perception is graded according to the degree of clarity in the representation of the world; it can already be mentioned in the field of animals' 'apperception': as an awareness with the degree of clarity allowing for a sense of self. 'Apperception' in the sense of self-awareness (perception accompagnée de conscience, trans: conscious perception), on the other hand, it means the way in which man is a sentient being and of one substance, namely, in the unity of the distinction between object and subject (the 'Ego'). ... Apperception also constitutes the numerical identity of the person. It separates an 'identité personnelle ou morale' (trans: 'personal or moral identity') from the 'identité réelle' (trans; 'actual identity'), which is based on the continuity of simple perception. Thus, Leibniz introduced the word 'apperception' in the ambiguous sense of self-awareness, and the ego and the person into philosophy." (Janke HWPh, Vol. 1, pp. 448-450).

Wundt's theory of apperception initially refers only to awareness and active attention which is then extended to the psychical (apperceptive) connections of sensations, feelings, and the activity of the will, thus giving rise to (self-) awareness as the highest form of synthesis. Already in the first edition of the *Grundzüge* (1874) there is a section on language and apperception, and Friedrich's (1883) dissertation, the first dissertation supervised by Wundt in Leipzig, is devoted to apperception research. The principles of mental causation are to be found mainly in the multimodal process of apperception. The psychology of apperception is not limited to its experimental foundation but forms the central part of Wundt's psychology: experimentally oriented general psychology and cultural psychology. – It is therefore of great interest to investigate the influence of Leibniz on Wundt's central theories. Wundt transforms Leibniz's philosophical, concept into a research program in experimental psychology; he even designed the neuropsychological modelling of a hypothetical apperception centre in the frontal cortex.

Quotes from Leibniz

"Besides, there are hundreds of pointers to the conclusion that at every moment there is in us an infinity of perceptions – alterations in the soul itself – that we aren't aware of and don't reflect on. We aren't aware of them because these impressions are too tiny and too numerous, or too unvarying. In either case, the perceptions in question when taken singly don't stand out enough to be noticed. But when combined with others they do have their effect and make themselves felt, at least confusedly, within the whole. That's how we become so used to the motion of a mill or a waterfall, after living beside it for a while, that we don't attend to it. Its motion does still affect our sense-organs, and something corresponding to that occurs in the soul because of the harmony between the soul and the body; but these impressions in the soul and the body, lacking the appeal of novelty, aren't forceful enough to attract our attention and our memory. ... Attending to something involves memory. Many of our own present perceptions slip by unconsidered and even unnoticed, but if someone alerts us to them right after they have occurred, e.g., making us take note of some noise that we've just heard, then we remember it and are aware of having had some sense of it." (NE, I, pp. 8-9).

"These insensible perceptions also indicate the same individual, who is characterized at any given time T by the traces of his earlier states that are preserved in his perceptions at T, thereby connecting his past states with his present state. Indeed, the insensible perceptions don't merely indicate or mark that this is the same individual as the one who . . . etc., they constitute his individuality – they make him one and the same individual all through. Even when the individual has no sense of the previous states, i.e. no longer has any conscious memory of them, they could be known by a superior mind because traces of them do now really exist. (And those trace-preserving perceptions also provide a means whereby it might become possible to gradually improve ourselves to the point where we can recover our memories at need.)" (NE, I, p. 8-10).

In short, insensible perceptions are as important to psychology [to be precise: Pneumatik, J.F.] as insensible corpuscles are to natural science, and in each case it is unreasonable to reject them on the excuse that they are beyond the reach of our senses. Nothing takes place suddenly; one of my great and best confirmed maxims says that nature never makes leaps. I have called this maxim the Law of Continuity. . . . This law does a lot of work in natural science. It implies that any change from small to large or vice versa passes through something in between. ... All of which supports the judgment that noticeable perceptions arise by degrees from ones that are too tiny to be noticed." (NE, I, p. 12)

14. The passing state that incorporates and represents a multitude within a unity – i.e. within the simple substance – is nothing but what we call perception. This must be carefully distinguished from awareness or consciousness, as will become clear in what follows. ['Awareness' here translates apperception. French had no noun for that job (nor did English), so Leibniz coined the apperception on the basis of the verb phrase s'apercevoir de, which meant and still means 'to be aware of'. J.B.] In that the Cartesians failed badly, entirely discounting perceptions whose owners were not aware of them. This made them think that the only monads are minds, which led them to deny that animals have souls because those would be simple substances below the level of minds.

...

15. The action of the internal force that brings about change – brings the monad from one perception to another – can be called appetition. Appetite cannot always get the whole way to the perception towards which it is tending, but it always gets some of the way, and reaches new perceptions – that is, new temporary states of the monad." (MON, p. 3).

Quotes from Wundt

"We want to call the entry of a stimulus into the inner field of vision a perception and the entry into the point of view as apperception." This definition of *apperception* is in Wundt's *Principles of Physiological Psychology* (1874, p. 717f). "After all this, attention and apperception are expressions of the same psychological condition. We prefer the first of these expressions to designate the subjective side of this concerning the accompanying feelings and sensations; with the second, we chiefly point out the objective results and the changes in the nature of the contents of consciousness (1908-1911, III, p. 315; 1920b, 252f, 307ff).

In the psychophysics of reactivity and intensity of sensation, the absolute thresholds and the difference thresholds are involved, that is, the transitions from the unnoticed perception to the apperception of a sensory stimulus, as well as the differences in levels. The conception of thresholds can already be found with Herbart (1824) and as a measurable sensory threshold, particularly with Fechner (1860). While Herbart (1825, pp. 209-257) writes only abstractly about categories of *apperception* or *inner events* and about fusing a series of images or thoughts, Wundt develops a program of empirical investigation. He aims firstly at "a purely empirical-psychological determination" of apperception and wants to totally eliminate the relationship to self-awareness and to only adopt the first characteristic, the relative clarity of the content, from Leibniz and make it the sole determining feature (1908-1911, III, p. 322 ff). Later on, however, Wundt (p. 354) adopts the second meaning by referring to apperception as the "main carrier of self-awareness" and this self-awareness itself "as the ego and as the individual personality" (in a psychological and not in a philosophical-idealistic sense).

The analysis of active attention is the central paradigm as Wundt sees here a self-active (voluntary) process in which sensory impressions, ideas, motives and feelings all combine together. In his apperception psychology, Wundt developed a differentiated theoretical concept. Apperception is, firstly, a concrete psychical process "by which any psychical content is brought to a clear conception" (1920b, p. 252), for example in the visual field, and secondly, a general psychological explanatory principle of the complex process of consciousness.

Consequences for epistemology and methodology

There are two main determinants of apperception: the clarity of apperception and the levels (thresholds) of consciousness (1908-1911, I, p. 381). Awareness is, first of all, increasing consciousness, a characteristic feeling of increasing clarity and tension, which, eventually, is related to other feelings and voluntary actions. Psychological investigations are capable of describing the range of awareness, external and internal interruptions in attention, variations in awareness levels, expectation and fatigue, over- adjustment and under-adjustment (1908-1911, I, p. 579 ff). For apperception research, new experimental psychological methods (multiple reaction time tasks) are developed or carried out in Leipzig, such as the *mental chronometry of complex reaction times* introduced by Donders (Wontorra, 2009).

Using the example of language, Wundt explains his distinction between associative and apperceptive processes (1894, P. 86). While in the process of simple *association*, elementary contents are combined (the written letter and the sound), higher integrative processes take place in *apperception*. There are essential differences in complexity, for the apperceptive processes also involve feelings and willing (motivation), and eventually a "creative synthesis", i.e. the emergence of new attributes. Associative laws describe simpler connections, but without supposing an *active choice*, e.g., selection and focus, or processing which is directed by purpose, and emergent

psychological attributes. Apperception is a process of a higher level compared to "passive" association and builds on them, but not in a simple additive sense.

Wundt criticizes the view of John Locke, David Hume, Thomas Brown, et al. The frequency of repetition is thus not generally responsible for the connection of uniform consciousness elements; he maintains that the "four old association principles" [i.e. similarity, contrast, contiguity, repetition] is for many much too simple and inadequate, and indeed mechanistic. On the other hand, with the experimental research in Leipzig, he distinguishes the agglutination of ideas, fusions, in particular of speech forms, e.g., the *consolidation* and the *displacement* of ideas (thoughts) as the main forms of the complex apperceptive connections (1908-1911, III, pp. 500-545). – Wundt sees the principle of emergence in terms of the process of psychological synthesis even more clearly on the higher levels of intellectual activity right up to the totality of cultural developments. In *cultural psychology* he refers to his apperception theory. On this basis, the cultural change of meanings and values and the transformation of motives are examined along many developmental lines (Wundt, 1900-1920).

Reception and criticism

The psychological concept of apperception is already introduced by the philosophical ideas of Leibniz, Kant, and Herbart. Wundt's original achievement is its transformation into an empirical research program. Above all, the analysis of the apperceptive processes prompted Wundt to inquire into the inherent laws of the processes of consciousness and the special *principles of psychic (mental) causality*. The most important principle is the *creative synthesis*, i.e. the emergence principle. All in all, here is an example of how the theses of an outstanding philosopher could stimulate theory development in psychology, experimental psychology and also including an initial attempt at neuropsychological modelling (see the detailed presentation, Fahrenberg, 2015b).

In contemporary reviews of Wundt's books, his apperception psychology is partly acknowledged positively (Eisler, 1904, Sichler, 1914) and partly criticized (Lüdtke, 1911). Critics like Ziehen (1890, 1896) consider that the psychology of apperception is superfluous since the theory of association developed by English authors is totally sufficient. With few exceptions, the textbooks of that time do not go further into Wundt's theory and his methodological suggestions are neglected. The term *apperception*, which was widespread at the turn of the century in 1900, is unusual in today's psychology and hardly appears in textbooks of psychology. Wundt is regarded as the founding father of experimental psychology, but his central theoretical conception is ignored. – For what reasons do so many psychologists prefer theoretically less demanding concepts, selective, and reductionist approaches of *Behaviorism* and *Cognitive Psychology*?

2. 6 Consciousness, self-awareness and individuality (the person)

Leibniz gives the ambiguous concept of "consciousness" profound psychological attention beyond the conceptions of Descartes and Locke. Leibniz explains the transition from *petite perceptions* to mindful apperception, and thus to *self-awareness*. This apperception is a unifying process carried out by the thinking and willing "self". This notion of self and self-awareness is linked to the concepts of individuality (the monads) and identity, person, and (moral) personality. However, simple statements that Leibniz first introduced the idea of "the unconscious" and that he is "the discoverer of the unconscious" are inadequate.

Leibniz's point of view

"According to G. W. LEIBNIZ, identity and difference are not essentially established by time and place, but by an internal distinction ('principe interne de distincton'), which is also followed by the principle of individuation ('principe d'individuation'). Therefore, according to Leibniz, it is not sufficient to say, as Locke did, that the unity (identity) of plant and animal lies in a particular organization or design of the parts in a single body; it is rather based on a 'principe de vie subsistant, que j'appelle monade.' ... regarding the self ('soy'). Leibniz distinguishes between the appearance of self ('l'apparence du soy') and self-awareness ('conscienciosité') and declares that only the self ('le soy') brings about 'l'identité physique et réelle', while the appearance of the self (as it is given as awareness and for others) adds personal identity. According to the order of things, the person who feels the same presupposes a real identity. ... The actual and personal identity expresses itself through a present and immediate reflection ('reflexion presente et immediate'), and since the human soul preserves 'identité morale et apparente à nous mêmes', it is distinguished by its immortality ('immortalité') of the mere incessantness or ceaselessness ('incessabilité') of the soul of an animal." (Schrader HWPh, Vol. 9, pp. 293-395). (See also Jaeschke HW Ph Vol. 9, pp. 352-371).

The definitions of the individual substance are summarized in monadology. "It is their essence to express a multiplicity in unity, and nothing but an individual representation of the whole universe. According to the universe that it represents, but due to its original self-activity, it is in continuous change (appetition) and follows an individual tendency which cannot be influenced by external tendencies. It is thus an intrinsic law and is a 'windowless' entelechy. The respective degree of discernment of the perceptions and the power of the appetites makes up the individual point of view by which a certain monad differs from another." (Borsche HWPh, Vol. 4, pp. 310-323). "Man elevates himself over the animal through the apperception as self-awareness. In it he knows that he perceives. ... reflective memory creates that self-awareness and the identity that exists which for psychology in a moral sense are constitutive. ... Nothing can better illustrate this multiplicity in unity than what we experience in ourselves; for our spirit is aware of itself." (Scheerer HWPh, Vol. 7, pp. 1599-1653).

According to Wundt, the task of psychology is to analyse the elementary psychophysical relationships (Fechners's psychophysics), to investigate the higher processes of consciousness, and to clarify the laws of those relationships. For this purpose, various perspectives are investigated as to how higher functions are built up from these elementary functions and how the relationship of consciousness is produced. Wundt's theory of the apperception process, and much of the Leipzig research program, serve this goal. The individual is aware of the coherence of his experiences and beyond this stream of consciousness no independent "self" is postulated.

With regard to this wide-ranging topic, direct lines of tradition from Leibniz to Wundt are less striking than is the case for parallelism, apperception, and epistemic principles. If Wundt's conception is sketched out here, it can be seen how empirical psychology differs from the philosophical discourse.

Quotes from Leibniz

"It is obvious to everyone, and Locke would presumably not deny it, that we aren't always aware of dispositions that we do nevertheless have. And we aren't always aware of the contents of our memory. They don't even come to our aid whenever we need them! So, on other occasions he limits his thesis to the statement that there is nothing that we haven't been aware of at some past

time. But no-one can establish by reason alone how far our past (and now perhaps forgotten) awareness may have extended. . . . Anyway, why must we acquire everything through awareness of outer things? Why can't we unearth things from within ourselves? Is our soul in itself so empty that unless it borrows images from outside it is nothing?" (NE p. 7; see also, Section 2.3 on epistemology).

Quotes from Wundt

"For Leibniz, self-awareness is the characteristic of the mind. He is the first to point out the *principle of identity* as the supreme axiom of thought. But as it is in the flow of development, it presupposes the lower stages of the consciousness from which it develops and leads to the higher ones to which it is directed. Metaphysically, therefore, the infinite darkness and the infinitely clear consciousness form the two frontiers of the harmonic world." (Wundt, 1917, pp. 87). For Wundt, "self" means "our awareness of the relationship of our experiences" (1894, p. 105). "This connection of the psychical structures is called consciousness. The concept of consciousness, therefore, does not signify anything that would exist alongside the psychical processes but it does not refer merely to the sum of them without any regard for how they relate to one another ..." (1920b, p. 246).

The extent to which Wundt is linked to Leibniz's thoughts on self-awareness and the individuality of the monads can principally be seen in his apperception psychology. For Wundt's view of individuality, the concept of *personality* is important in the context of his ethics. Personality is the unity of feeling, thinking, and the willing, in which *will* again appears as the carrier of all other elements. Personality means a sentient being, acting with a unified and elective will, and in the ethical sense, includes the freedom and responsibility of the will (1919, II, p. 201; 1912a, III, p. 23). From Wundt's point of view, the character of man, shaped by personal experiences, determines willing and motivated action. Our empirical will is the personal individual will as a unit of self-aware imagination, willing and action.

Consequences for epistemology and methodology

The *Grundzüge* (1874, 1908-1911) contains highly differentiated descriptions of psychic functions as components of a uniform process of consciousness. In active apperception, sensory impression, imagination and feeling are combined in the act of will. Wundt's primary goal was to gain insights into the individual processes of consciousness and the cultural development of the community, using both experimental and comparative methods. Opposing a psychology of "the unconscious", his fundamental objection is that it is impossible, by definition, to directly observe and examine such processes. They also cannot be directly investigated by Wundt's method of controlled self-observation; there is ultimately no reliable methodological approach.⁷

Reception and criticism

Leibniz's remarks about *unnoticed* and *perceived* sensory impressions contributed significantly to the discussion of consciousness phenomena, and to later controversies about "the unconscious". In

⁷ Wundt revised his initial assumptions about "unconscious inferences" as early as 1874 (Araujo, 2012, 2016). Here, his scepticism of Fechner's doctrine about the unconscious, as well as the contemporary trend towards hypnotism and spiritualism, is obvious (Wundt, 1879, 1892b). While Freud often quoted from Wundt's work, Wundt remained sceptical about all hypotheses that involved "the" unconscious (see Fahrenberg, 2011, 2015a).

the world of ideas at the turn of the century in 1900, much attention was given to dark and mysterious imaginations, i.e. processes beyond those of consciousness.⁸

2.7 Striving and appetite, volition (the will). intellectualism and voluntarism

As Leibniz puts it: the activity of the monads is essentially determined by internal conditions. On the one hand, this refers to the principles of rational knowledge, and on the other, to volition, which he calls striving or appetite. So, the transition from a perception to the apperception of a sensation can be characterized as "willful striving (aspiration)". Leibniz also mentions desires, passions, and also, as diffuse and rather negative states, feelings. This view, which is open to the whole spectrum of psychic phenomena, distinguishes Leibniz from other philosophers and psychologists who, like Johann Friedrich Herbart or Franz Brentano, show a marked intellectualistic (cognitivist) tendency.

Leibniz's point of view

"LEIBNIZ develops the concept of appetite (lat. appetitio, appetitus sive agendi conatus ad novam perceptionem tendens) in order to explain the structure of the monad. He elucidates it in analogy to the human will, deduces it as a condition of the possibility of true unity, and thus expounds it as a fundamental meaning of true being. Appetition, like perception, has a general meaning which embraces all true beings as ens percipiens et appetens. ... And since the conditions of the True One are at the same time conditions of the True Being, metaphysics can, since Leibniz, as a matter of urgency be understood as a willingness to strive." (Janke HWPh, Vol. 1, p. 456-457). – Another essential element of the monads is their *dynamism*: 'La Substance est un Etre capable d'Action'. Since monads differ in their inner states or *perceptions*, it is based on an inner *striving* (appetite), which allows the monad to proceed from perception to perception according to some internal principle: this is why when Leibniz speaks of monads, he also speaks of 'entelechia'. He calls monads, whose perceptions are 'accompanied by memory', *souls* ('ame') – in contrast to the Cartesian concept, animals also have a soul. Perceptions which 'represent external things' are to be distinguished from *apperceptions*, which signify 'self-awareness or reflexive knowledge'. Monads competent of apperception are called rational souls or spirits ('ame raisonnable', 'esprit')." (Poser, HWPh, Vol. 6, pp 117-121).

Wundt's theory of volition (will, intention) – better described today as *general motivation theory* – includes the biological, evolutionary perspective and the perspective of cultural development as the creative intention and achievement of many motivated individuals. As a final point, he extends this psychology of the will into a philosophical-ontological conception. However, he emphasizes the necessary independence of psychology's empirical constituents. Both modes of human development, the intellectual and the voluntary, emerge in Wundt's work: the theory of the

⁸ The German word "unconscious" was coined by Ernst Platner (1776, cf. Kaiser-el-Safti, HWPh, Vol. 11, 124-133); Only a year later Goethe, who was revered by Fechner, favored the word "unconscious" in his poem *An den Mond* (1st version, 1777). Fechner coined the word *Unbewusstsein* (*unconsciousness*) and gave these ideas about levels of consciousness a new interpretation with his analogy to the thresholds of sensory perception (Fechner, 1851, Vol. 2, p. 377; 1860, Vol. 2, 438f; Wegener, 2005). Arthur Schopenhauer, Eduard von Hartmann, Friedrich Nietzsche, and other philosophers developed the idea of the unconscious, and Sigmund Freud established the concept of conflicting unconscious psychodynamics and – hypostatizing – "the unconscious".

development of the mind and the interpretation of dynamics of development, also as a result of a volitional, biologically based evolution.

Quotes from Leibniz

48. "In God there is (1) power, which is the source of everything, then (2) knowledge, which contains every single idea, and then finally (3) will, which produces changes in accordance with the principle of what is best.

And these are what correspond, respectively, to what in created monads constitute (1) the subject, or base, or basic nature of the monad itself, (2) the faculty of perception, and (3) the appetitive faculty." (MON, p. 7 see above)

49. "A created thing is said to act on something else in so far as it has perfection, and to be acted on by something else in so far as it is imperfect. Thus, activity is attributed to a monad in so far as it has distinct perceptions, and passivity is attributed to the monad in so far as it has confused perceptions. Why do I say 'Thus, . . .', implying that the second of the above two sentences follows from the first? It is because of a link between being perfect and having distinct perceptions – a link I now explain." (MON, p. 7-8)

Quotes from Wundt

For Wundt, the carrier of the continuous psychical process cannot be the "soul", nor ego or any other structure. He sees it as *general active will*. The will is an independent and original fact of immediate experience. The will is not a function which enters into expectations, concepts, feelings, and instincts and needs rooted in these, but is already contained within them; in particular, feelings are preparatory and accompanying phenomena of the will, in which the direction of the act of will (intention) prefigures itself. The immediate preparatory action and emotional links are designated as motifs.

Wundt's psychology of the *will* is central to his work. He means the totality of units of activity from the stimulus-dependent reactions and impulses to the purposeful will and intentions of the human being. His motivation theory encompasses elementary biological reactions, purposeful and directed action, and thus includes biological evolution and the development of culture as the creative achievement of many intentions and activities of the will. Wundt interpreted intellectual-cultural progress and biological evolution as a general process of development whereby, however, he did not want to follow the abstract ideas of entelechy, vitalism, and animism and by no means Schopenhauer's volitional metaphysics of the will (1919, I, pp. 188-205, 382-427; 1908-1911, III, pp. 702-720). He believed that the source of dynamic development was to be found in the most elementary expressions of life, in reflexive and instinctive behaviour, and he constructed a continuum of attentive and apperceptive processes, volitional and selective acts up to social activities and ethical decisions. Wundt's theory of motivation is determined by a central developmental idea. Comprehensive expositions of his motivation theory are to be found in the revised editions of the *Grundzüge der physiologischen Psychologie* (6th ed., 1908-1911), in *Ethik* (4th ed., 1912a, vol. 3, pp. 1-74), and in *Völkerpsychologie* (Kulturpsychologie) (1900-1920, Vol. IX, pp. 219-367).

By combining his empirically oriented motivation theory with a philosophical-voluntaristic tendency, he transcends the boundaries of empirical science into *metaphysics* and *ontological ideas*. For metaphysical voluntarism, reality means an "infinite totality of individual units of will" whose interaction is the developmental principle of the will itself. The world is not a will, but a succession

of units of will which are not monads (or separate "substances"), but actuality, purposeful, interacting entities of activity (1919, I, 397-436).

Consequences for epistemology and methodology

In his *Grundzüge* Wundt takes many pages to describe the activity of the will in its various forms, and its connection with thoughts and feelings. The choice of a particular *point of view* in a *field of attention* (see Section 2.5) is the basic example here and an experimental psychology paradigm, which strategically combines measurement and self-observation while taking into account the subjective feeling of tension of voluntary activity. Wundt welcomed the first steps of experimental psychology of the will, in particular by Narziss Ach, but – before Kurt Lewin's psychology of the will and field research – adequate research methods for empirically-based motivation research were still scarce. But there is another approach to it in the field of cultural psychology: the emergence of the human community, language, myth, and customs. These can be analysed psychologically to determine the developmental motifs and shared intentions in the community.

In several sub-chapters of *Völkerpsychologie* (1900-1920, Vol. IX, pp. 244-301), Wundt psychologically describes the variety of motivated action, as well as its accompanying affect and the recordings of physiological correlations. He discusses the *will* in detail, both as a purpose and as a goal; the will is "in this respect also logical reflection ('Denkhandlung')." This is also why Wundt contradicts Schopenhauer's and Hartmann's concept of an *unconscious* will (p. 277). Here, Wundt once again establishes the fundamental importance of the *principle of purpose* in psychology and ethics. It is about "the birth of the purpose coming from the will" (p. 285). – He demands, however, that empirical-psychological and derived metaphysical voluntarism are distinguished from one another, and firmly maintained that his empirical psychology was created independently of the various teachings of metaphysics (1919, I, Preface, pp. IX-XI).

Reception and criticism

Wundt's psychological *and* metaphysical voluntarism – in conjunction with his actuality theory – can be regarded as a fundamental idea of life. In other words, the highest synthesis of consciousness and cultural development. Wundt's conception was therefore sometimes described as *universal evolutionism* (Jodl, 1894, p. 206, see also Nef, 1923).

Wundt uses the concept of *intellectualism-voluntarism*, and this general pattern of philosophical attitudes was adopted by others (Borsche HWPh, Vol. 4, pp. 439-444). The biographies by König (1901), Eisler (1902), Nef (1923), and Petersen (1925) contribute to the general impression that Wundt also tried to – sometimes critically – interpret his empirical-psychological and metaphysical *voluntarism* and distanced himself from the widespread *intellectualism* (rationalism). From Wundt's commentaries on his unifying (monistic) views and on the philosophical presuppositions of empirical psychology, it can be concluded that he was very well aware of the risk of mixing *empirical voluntary psychology* with a derived *metaphysical* voluntarism.

The elementary phenomena of attention (awareness) are still a theoretically controversial field of research in science, exposing the philosophical-epistemological views of individual researchers. An adequate neuropsychological examination, i.e. with a valid psychological assessment, is not completely isolated from assumptions about "reactive" behaviour versus "active" control. For example, there are research programs that tend to be physicalistic (reductionistic), and others that are seen as voluntaristic or mentalistic when they assert voluntary self-activity (Wundt's neuropsychology, Fahrenberg, 2015b).

2. 8 The principle of sufficient reason, principles of causality and purpose, unity – plurality, perspectivism

The axioms of Leibniz concerning logic, identity and contradiction, as well as categories and relations, principles and heuristics, can be summarized as a *canon of principles (Prinzipienlehre)*. The *Law of Continuity*, the principle of harmony, the principle of *individuality*, and the emphasis on *self-activity* (striving) have already been discussed (Section 2. 1). Leibniz went further into the traditional schemes of categories of being and created a new interpretation of mutually complementary principles of *cause* and *reason* (causality and teleology) with the often-quoted principle of *sufficient reason* (*nihil est sine ratione sufficiente* – trans. nothing is without sufficient reason). Ideas about *unity and multiplicity*, *perspectivity*, *horizon*, and *limitations* of knowledge expand the theory of knowledge in a way that is important for the theory and methodology of the empirical sciences, particularly psychology.

Leibniz's point of view

"G. W. LEIBNIZ renews Aristotle's doctrine of principles – in the concept of the principle (*ἀρχή*), in the distinction of the theorem of contradiction, with the combination of wisdom (*sagesse*) and knowledge of principle – no other author of the seventeenth century formulated such principles: being hierarchically ordered while emphasizing their philosophical significance as Leibniz did: "the general principles enter into our thoughts and form their soul and cohesion. They are as necessary for this as the muscles and tendons are for walking, even if one does not think about it. The mind rests upon these principles at any moment; J. ORTEGA y GASSET, therefore, has apostrophized him as the 'man of principles' par excellence, but at the same time he also drew attention to Leibniz's carelessness in dealing with such principles." "... in the systematic structure of Leibniz's thinking, two 'great' principles stand out: the principle of contradiction and the principle of sufficient reason (*principium rationis sufficientis*). Both are based on human reasoning (*raisonnement*) ..." (Holzey HWPh, Vol. 7, pp. 1326-1363).

"According to HEIDEGGER, it lasted for two thousand three hundred years, until Western-European thought came through Leibniz to find and set up this simple sentence. And in fact the *principium rationis sufficientis* is explicitly declared for the first time by Leibniz as the basic principle of philosophy in the phrase 'nothing is without sufficient reason' ('*nihil est sine ratione sufficiente*'); It states that 'no fact is true or existent and no statement can be proved true without there being a sufficient reason why it is so and not otherwise.'" ... "The causal interpretation of the p.r.s, which is the pre-eminent concept before and after Leibniz, adheres to Leibniz only in terms of the space-time-determined physical world." It is only in this "realm of nature," which is not a true realm of being for Leibniz, but a mere, if well-founded phenomenon, that all changes are to be derived from movement and from mechanically acting causes. The p.r.s. through Leibniz, can be regarded as a large-scale attempt to conceive the variety of traditional and justified approaches as different applications of a great principle. It shows logical, ontological, causal, and teleological justifications are merely different aspects of the same thing. Aspects of this principle are then to be differentiated according to distinctions which are sometimes traditional and sometimes new. ... "The p.r.s. is, for Wundt, 'the most general law of reasoning,' but as such 'merely the postulate that the content of our thought may be arranged for reasons and consequences'; 'the law of causality and the principle of purpose' then appear as the only possible empirical constructions of the p.r.s." (Holzey HWPh, Vol. 7, pp. 1326-1363).

"Leibniz introduced the term perspective and the associated term standpoint into philosophy. This is rendered in French as 'Il est vray que la même chose peut être représentée différemment; mais il doit toujours y avoir un rapport exact entre la représentation et la chose, et par conséquent entre les différentes représentations d'une même chose. Les projections de perspective, qui reviennent dans le cercle aux sections coniques, font voir qu'un même cercle peut être représenté par une ellipse, par une parabole, et par une hyperbole, et même par un autre cercle et par une ligne droite, et par un point.' ... In Section 57 of his monadological perspective, the basic structure of the world is given to the individual monads with their necessarily different standpoints: 'Et comme une même ville regardée de différents côtés paroist toute autre et est comme multipliée *perspectivement*, il arrive de même, que par la multitude infinie des substances simples, il y a comme autant de différents univers, qui ne sont pourtant que les perspectives d'un seul selon les différents *points de vue* de chaque Monade" (König HWPh, Vol. 7, pp. 363-375).

Fundamental to Wundt's epistemology and psychology is the understanding of Leibniz's idea of psychophysical *parallelism*, which holds the distinction of the *principle of causality* and the *principle of purpose* as two forms of the *principle of sufficient reason*. Wundt follows Leibniz in differentiating between a *physical* causality (natural causality of neurophysiology) and a *mental (psychic)* causality of the consciousness process. Both causalities, however, are not opposites in a dualistic metaphysical sense, but depend on the standpoint. Causal explanations in psychology, however, must be content to seek the effects of the antecedent causes without being able to derive exact predictions. Using the example of volitional acts, Wundt describes possible inversion in considering cause and effect, ends and means, and explains how causal and teleological explanations can complement one another to establish a coordinated consideration. From this point of view Wundt advances his system of the principles of psychic causality, which are, in turn, fundamental to his methodology.

Quotes from Leibniz

31. "Our reasonings are based on two great principles: the principle of contradiction, on the strength of which we judge to be false anything that involves contradiction, and as true whatever is opposed or contradictory to what is false.

32. And the principle of sufficient reason, on the strength of which we hold that no fact can ever be true or existent, no statement correct, unless there is a sufficient reason why things are as they are and not otherwise – even if in most cases we can't know what the reason is." (MON, p. 5).

79. "Souls act according to the laws of final causes, through aspirations, ends and means. Bodies act according to the laws of efficient causes, i.e. the laws of motion. And these two realms, that of efficient causes and that of final causes, harmonize with one another." (MON, p. 11).

57. "And just as the same town when seen from different sides will seem quite different – as though it were multiplied in perspectives – the same thing happens here: because of the infinite multitude of simple substances it's as though there were that many different universes; but they are all perspectives on the same one, differing according to the different points of view of the monads." (MON, p. 8). (comp. *Discourse on Metaphysics*, Leibniz 1686, 15).

Quotes from Wundt

The "drive towards knowledge rooted in our logical thinking" extends to all contents of consciousness, and thus also to facts. ... The word 'sufficient' is deliberately chosen. It means that this is a maxim (basic rule) for relating facts which is not essential, and which is therefore always

open to correction". (Wundt, 1917, p.102). This way of thinking has the invaluable advantage that it is "not outside the positive sciences but is supported by these." (p.108).

Wundt emphasizes the axiomatic position of the superordinate *theorem for sufficient reason* and discusses in detail the logical and the empirical meaning of the two main forms: the principle of causality and the principle of purpose. In the stream of consciousness, especially in motivation, we experience the connection of reason and consequence, means and ends, clearly and directly. The general relationship between reason and consequence is the superordinate principle which human reason follows in its quest for the unity of knowledge. Wundt thinks of the principle of causality as a natural causality for the physical or material world. The physiology of the brain is understood according to its natural causality (with regard to matter, equivalence of cause and effect and conservation of energy). But the processes of consciousness follow a categorically independent, psychological act of causality.

From the basic assumption of psychophysical parallelism, it follows that mental processes are not causally (interactively) derived from physical processes. Wundt therefore postulates a psychic causality connecting the content of consciousness. Psychological and physical causation are not opposed to each other in the dualistic-metaphysical sense, but are one and the same causation, which, according to the point of view and the kind of thinking process, is presented as psychical (mental) or physical causality (1894, 1908-1911, III, pp. 702-720, 721-733; 1919-1921, III, pp. 40-45, 240-294).

Consequences for epistemology and methodology

The psychology of consciousness and physiology of the brain require two categorically different modes of observation. Empirical psychology must therefore follow independent epistemic principles whereby causal and teleological explanations are to be supplemented in a "united view". Wundt breaks down the question of whether purpose can be regarded as a true principle of knowledge, into two: "... what significance does purpose possess as a subjective principle of judging appearances" and "whether and with what right can objective purposes of the event be assumed" (1919-1921, I, p. 628). *Subjectively*, setting and the attainment of purposes are directly experienced in the process of willing. Obviously, the assumption of *objectively acting* purposes is more difficult in theory but is justified wherever there is motivated action. "Intentions (of the will) are directed to an objective process which was previously set out as a subjective intention of purpose. In those sciences which deal with human acts of will and their results, purpose is in this case the ruling principle of research. This applies to the whole field of so-called *Geisteswissenschaften* (humanities), whose methodological distinctiveness from natural sciences is partly based on this principle." (p. 634).

Wundt describes in detail the possible reversal of considering cause and effect, along with means and purpose, and explains how causal and teleological explanations can supplement a "coordinated view". This change of perspective concerning the causal-final axis of scientific analysis is a sophisticated strategic concept. The actual principle of purpose is only a regressive causal principle and is a reversal of the causal explanation (1919-1921, I, p. 631). It is, however, only *one* causal process which is, so to speak, viewed backwards and forwards on a causal-final axis. This understanding of psychological causality is fundamental to the psychological analysis of motivation and of cultural development. "This is because causality and purpose are the two concepts into which the general concept of the world-order divides itself." (1919-1921, I, p. 636).

Principles of mental causality

The strategies and heuristics are compiled in Wundt's *system of principles*. Principles are "simple, not-to-be-derived prerequisites for the connection of mental events" (1908-1911, III, p. 767). Wundt primarily differentiated between four principles and illustrated them with examples that originate from the psychology of perception; from apperception research, emotion and motivation theory; from language research; and from cultural psychology and ethics. The system of principles has several repeatedly reworked versions, with corresponding *principles of development* for cultural psychology.

(1) *The Principle of creative synthesis or creative results* (emergence principle). Wundt formulated this creative synthesis, which today would also be described as the principle of emergence in system theory, as an essential epistemological principle of empirical psychology – long before the phrase *the whole is more than the sum of its parts* or supra-summation was used in Gestalt psychology.

(2) *The Principle of relational analysis* (context principle). This principle says that "every individual mental content receives its meaning through the relationships in which it stands to other mental content."

(3) *The Principle of mental contrasts or reinforcement of opposites or development in dichotomies*.

(4) *The Principle of the heterogony of purpose (ends)*. The consequences of an action extend beyond the original intended purpose and give rise to new motives with new effects. The intended purpose always induces side-effects that themselves become purposes, i.e. an ever-growing organization through self-creation.

In addition to these four principles, Wundt explained the term of intellectual community and other categories and principles that have an important relational and heuristic function. (*Logik*, 1919-1921, III, pp. 240-294; see Fahrenberg, 2013, pp. 103-125, pp. 249-288). Wundt demands coordinated analysis of causal and teleological aspects; he called for a methodologically versatile psychology and did not request that any decision be made between experimental-statistical methods and interpretative methods (qualitative methods). Whenever appropriate, he referred to findings from interpretation and experimental research within a multimethod approach. Thus, for example, the Chapters on the development of language and of fantasy in cultural psychology also contain experimental, statistical and psychophysiological findings. He was very familiar with these methods and used them in extended research projects. This was without precedent and has, since then, rarely been achieved by another individual researcher.

Reception and criticism

Wundt's concept of *mental causation* has been widely criticised and even rejected outright. Criticism of Wundt's concept was put forward from various philosophical standpoints by Eduard von Hartmann, Mach, Scheler, and Carnap, among others. Since "causality" is an ambiguous expression, the variants of the causal principle and the heuristics of teleological thought should be explained precisely, and their validity directly assessed for empirical psychology.

Even the textbooks written by Wundt's assistants and co-workers at the Leipzig Institute show that the concept of mental causality is scarcely accepted. Neither Wundt's epistemology and methodology nor his system of principles are cited or explained in detail. Few reviewers of Wundt's works mention the typical cognitive style of Wundt, his perspectivism, which he brings out with Leibniz, and his multimethod strategy.

Wundt has often pointed out the importance of different modes of observation and viewpoints, and he has expressed his conviction that human reason, in the sciences and philosophy, does not strive primarily to attain a *simple* and *parsimonious* conception but to accomplish a *consistent* and *non-contradictory* world view.

2.9 Concepts of development (evolution)

"Change" is a frequently recurring term in Leibniz's writings. Characteristic of the monads is that in every monad continuous change occurs due to an internal principle. If Leibniz regards the *Law of Continuity* as fundamental, then it should not only consider the individual changes of the monads, but also the developing forms of life and their origin (recalling Aristotelian teaching about vegetative and sensitive souls and the human mind. A *theory of descent* had not yet been conceived, but Leibniz repeatedly emphasizes transitions between species of the animal world and refers to similarities with man.

Leibniz's point of view

"For LEIBNIZ, who needs 'evolutio' and 'involutio' in addition to 'développement' and 'enveloppement' as his "favourite words", development belongs to the context in which ideas and truths of the soul are innate as inclinations, dispositions and habits so that they are set off with certain events or triggers. 'Develop' (développer) means that these unconscious ideas become clearer: "If the soul always has thoughts which are weak and unclear, it is natural that they develop"; and they will develop more clearly." (Weyand HWPh, Vol. 2, pp. 550-557). "The notion already suggested by ANAXIMANDER and by Genesis of the Bible, that living creatures were successively formed at increasingly higher levels, was developed in a more detailed form in the 17th and 18th century by W. HARVEY, G. W. LEIBNIZ, CH. BONNET, R. ROBINET, J. G. HERDER, and other naturalists and philosophers. The fact that such gradations could possibly be interpreted as a development and a history of descent was first described by LEIBNIZ, BUFFON, KANT, and G. ST. HILAIRE." (Rensch HWPh, Vol. 2, pp. 836-838).

For Wundt, with the adoption of the principle of continuity and actuality, the mental *connections* and *changes* became the principal issues in empirical psychology: in the psychology of apperception, in the psychology of motivation (will), and in the *development of the mind* from the point of view of his *cultural psychology*.

Quotes from Leibniz

13. *"This detailed nature must bring a multiplicity within the unity of the simple substance. The latter's detailed nature is a 'multiplicity' in the sense that it has many components that don't stand or fall together. That is because every natural change happens by degrees, gradually, meaning that something changes while something else stays the same. So, although there are no parts in a simple substance, there must be a plurality of states and of relationships."* (MON, p 3).

15. *"The action of the internal force that brings about change – brings the monad from one perception to another – can be called appetite. Appetite cannot always get the whole way to the perception towards which it is tending, but it always gets some of the way, and reaches new perceptions – that is, new temporary states of the monad."* (MON, p. 3).

26. *"Memory provides souls with a kind of following from which mimics reason but must be distinguished from it. It is what we see in an animal that has a perception of something striking of which it has previously had a similar perception; the representations in its memory lead it to expect this time the same thing that happened on the previous occasion, and to have the same*

feelings now as it had then. For example, when you show a stick to a dog, it remembers how the stick hurt it on a previous occasion, and it whines or runs away."

27. "The animal in this case is impressed and stirred up by a powerful imagining; and its power comes either from the size [here = 'strength' or 'intensity'] of the preceding perceptions or from there being many of them. Either would do the job; for the effect of a long habituation, the repetition of many mild perceptions, is often achieved in a moment by one powerful impression."

28. "In human beings, the perceptions often follow from other perceptions under the influence of memory; as with empiric physicians, who have elementary technique without theory. ... In this empiric aspect of their lives, humans operate in the same way as the lower animals do."

29. "What distinguishes us from the lower animals is our knowledge of necessary and eternal truths and, associated with that, our having a kind of 'following from' that involves necessity and depends on reason, rather than merely the 'following from' of the animals, which is wholly contingent and depends on memory. This is what gives us reason and science, raising us to the knowledge of ourselves and of God. And it's what is called 'rational soul' or 'mind' in us." (MON, p. 5).

74. "Philosophers [here = 'philosophers and scientists'] have been at a loss regarding the origin of forms, entelechies, or souls, but not any longer. Careful investigations into plants, insects and animals have shown that Nature's organic bodies are never produced from chaos or from putrefaction, but always from seeds, in which there is without doubt already some preformation. ... What conception does is to launch that animal into a great transformation that will turn it into an animal of a different kind. We even have examples of something like this great transformation apart from generation, as when maggots turn into flies and caterpillars into butterflies." (MON, p. 11).

82. "As for minds, or rational souls [see 29]: I stand by my view, just expressed, that basically there is the same thing in all living things and animals, so that both the soul and the animal begin only when the world begins, and never come to an end, any more than the world does; but I maintain that there is something special to be said about rational animals, as follows. Their little spermatic animals, to the extent that they are no more than that, have only ordinary souls, ones that can feel; but when the select few come, through an act of conception, to have the nature of a human being, their feeling souls are raised to the level of reason, and to the privileges of minds." (MON, p. 11).

Quotes from Wundt

Leibniz would see a "gradual order of being, which proceeds upwards according to the principle of continuity in transitions from the most primordial world order itself. Empirical support for this just as for the simplicity of beings, he finds in the indivisibility of beings, thus for the stages in development of organic nature ... a transition towards the concept of development ..." (1917, p. 85). "A second epoch-making thought is the idea of the unity and harmony of the universe," which was underpinned even more so by the law of continuity. "One fruitful outcome of this connection was the idea of development in its application to organic nature which he endeavours to trace back to the universal laws of nature and which, in the last analysis, are at the same time to be regarded as mechanical laws as well as laws of purpose. He developed this idea as a theory in a form which was not accepted due to the lack of biological knowledge of the century, but nonetheless followed the principle of natural evolution theory" (1917, p. 121).

Psychological developmental laws and the developmental theory of the human mind constitute the most comprehensive goal of psychology. The psychological examination of the cultural fields "can be a causal aspect in a double sense: first, in a historical sense, inasmuch as the individual fields are connected in a sequence linked by historical conditions; on the other hand, in a psychological sense, inasmuch as the decisive conditions of cultural development always go back to psychological motives even where they are brought about by external influences. Insofar cultural psychology summarizes both of these, it is comprehensively regarded as a developmental history of the mind, and especially the psychology of culture. In particular, its task is to establish the origin of values from which culture in its various forms is gradually built." (1910-1920, Vol. 10, pp. 217). Cultural psychology deals with "the human being in all relationships that go beyond the limits of individual being and which indicate interactions as their general condition ..." (*Völkerpsychologie*, 1900-1920, Vol. I, p. 2). In the interaction of the individual with the community, "new mental contents arise with a unique value." (1919-1921, III, p. 289).

In contrast to the philosophy of history, Wundt wants to put psychological developmental laws on an empirical footing. This also includes his clear interest in animal psychology, which shows the preliminary stages of mental development. In contrast to other thinkers of his time, Wundt has no difficulty in connecting the idea of development based on the traditional understanding of *Geisteswissenschaften* in Germany and Darwin's evolutionary theory to human evolution, on the descent of man.

Consequences for epistemology and methodology

The fundamental task is to work out a comprehensive theory of development of the human mind up to the highest cultural achievements in language, religion and ethics. According to Wundt psychology – with its analysis of the central processes of consciousness – can attempt to determine which mental functions are responsible for the connection of consciousness and, moreover, the most common link between culture and the mental development of mankind. The apperceptive connections of consciousness not only provide an analogy to the complex processes of cognition but they individually represent those mental processes which are also effective in the cultural development of society. Apperception psychology contributes to the process of knowledge by empirically elaborating the universally valid principles of this creative process. The psychology of language is a principal issue here in the developmental theory of man.

Wundt's *Völkerpsychologie. Eine Untersuchung der Entwicklungsgesetze von Sprache, Mythos und Sitte* (Cultural Psychology. An investigation into developmental laws of language, myth, and conduct) (1900-1920) is a milestone project, a monument of cultural psychology, of the early 20th century. The ten volumes also contain the evolution of *Arts, Law, Society, Culture* and *History*. The dynamics of cultural development were investigated according to psychological and epistemological principles. Psychological principles were derived from Wundt's psychology of apperception (theory of higher integrative processes, including association, assimilation, semantic change) and motivation (will), as presented in his *Grundzüge* (1908-1911). In contrast to individual psychology, cultural psychology aims to illustrate general mental development laws governing higher intellectual processes: the development of thought, language, artistic imagination, myths, religion, customs, the relationship of individuals to society, the intellectual environment and the creation of intellectual works in a society. "Where deliberate experimentation ends history has experimented on the behalf of psychologists." (1963, p. IX). Those mental processes that "underpin the general development of human societies and the creation of joint intellectual results that are of generally

recognised value" are to be examined (1900-1920. Vol. 1, 3rd ed. p. 1). Apperception theory applied equally for general psychology and cultural psychology. Changes in meanings and motives were examined in many lines of development, and there are detailed interpretations based on the emergence principle (creative synthesis), the principle of unintended side-effects (heterogony of ends) and the principle of contrast. Wundt worked on, psychologically linked, and structured an immense amount of material. The topics range from agriculture and trade, crafts and property, through gods, myths and Christianity, marriage and family, peoples and nations, to (self-)education and self-awareness, science, the world and humanity. Wundt recognized about 20 *fundamental dynamic motives in cultural development*.⁹

2. 10 Ethics and the idea of humanity

Leibniz's views on ethics (moral philosophy) can be seen in his central concepts: the freedom to act from reason, the *common good* of humanity, and *justice* as the foundation of the world order. As he did not write coherent ethics, a more detailed account should refer to several sources, including correspondence, and describe the close relationship with theology and the concept of *moral evil*, and *theodicy*. Even Leibniz's view of determinism and freedom, and the unpredictability of action (despite the irreconcilable fixedness of the event) would require this larger context which extends far into jurisprudence and politics (Spaemann HWPh, Vol. 2, p. 1088-1098; Herzog HWPh, Vol. 3, p. 251-258; Kohlenberger HWPh, Vol. 3, p. 334f).

Quotes from Wundt

Wundt's writing on Leibniz and some passages of his autobiography *Erlebtes und Erkanntes* show how extensively he has dealt with Leibniz's Moral Philosophy and why he is convinced that Leibniz established a reform of ethics. In his *Ethics* Chapter on the Enlightenment with the subtitle *Optimism and Perfectionism*, Wundt writes in detail and comprehensively about Leibniz, who "expressed the essence of German enlightenment" (1912a, II, p. 128 ff.), about the determinism of Leibniz, and the distinction between metaphysical and moral necessity: for Leibniz, morality and reason are treated identically. As for intellectualism, Wundt calls it a view by which the moral necessity and the metaphysic necessity to act ethically and reasonably are identical. "For all virtue is based on clear cognition, and this is, in the first place, an individual characteristic which, with its consequences, also serves to benefit others. That is why virtue and perfection are the same for Leibniz. Moral education is the spiritual perfection of mankind and which requires external means, thus law and morality do not form separate schools of thought but are combined in a coherent whole. These ethical subjects are no longer selfish, but altruistic. Virtue and happiness are not merely individual goods, but they are only attainable in man's harmonious coexistence. ... Since every perfection of man requires external means, law and morality are thus not separate fields, but a coherent whole." (p. 130 f).

"It is the idea of development from which monadology is achieved. The whole world is a succession of developments which, from the lowest to the highest beings, pass through all possible degrees of clarity. The individual soul is no less subjected to the law of perfection. The initially dark perceptions become ever clearer with the help of experience. ... Leibniz refers here to the natural feeling of humanity, the disposition for socializing and the feeling of dignity and propriety, which

⁹ The contents, methodology, reception, and criticism of Wundt's *cultural psychology* have been discussed in detail in a separate essay entitled *Wundt's psychological developmental theory of mind* (Fahrenberg, 2016b).

mankind already possesses without learning but which would be strengthened by instruction and experience. Thus, the recognition of morality, like all knowledge, consists in the fact that originally dark ideas are given greater clarity. Leibniz thus brings to light a moment which had hitherto been lacking in the ethics of the time, although it is clearly represented in the natural conditions of moral life, especially in its religious forms: the pursuit of the ideal. ... These are not the relationships to the universe which are reminiscent of Spinoza's, 'amor intellectualis Dei', but the ideas of perfection and development, which stand out here as decisive." (pp. 133 f).

Leibniz himself had called morality and metaphysics "a priori" sciences, and meant that, according to him, "only the ultimate principles of moral action cannot be deduced from experience. They lie within us, although they can only come into action when working together with impressions coming from the outside world. Here, then, are those virtues of justice, love, and piety which form an inner unity and which he describes as absolute moral laws." (1917, pp. 98f).

Consequences for epistemology and methodology

Wundt considered the questions of ethics to be closely linked with the empirical psychology of motivated acts. "Psychology has been such an important 'entrance hall' for me, and such an indispensable aid for the investigation of ethics, that I do not understand how one could do without it." Wundt sees two paths: the anthropological examination of the facts of a moral life (in the sense of cultural psychology) and the scientific reflection on the concepts of morals. The derived principles are to be examined in a variety of areas: the family, society, the state, education, etc. In his discussion on free will – as an attempt to mediate between determinism and indeterminism – he categorically distinguishes between two perspectives: there is indeed a natural causality of brain processes, though conscious processes are not determined by an *intelligible*, but by the *empirical* character of humans – volitional acts are subject to the principles of mental causality. "When a man only follows inner causality, he acts freely in an ethical sense, which is partly determined by his original disposition and partly by the development of his character." (1912a, III, pp. 52-53).

On the one hand, Ethics is a normative discipline while, on the other hand, these 'rules' change, as can be seen from the empirical examination of culture-related morality. Wundt's ethics can, put simply, be interpreted as an attempt to mediate between Kant's apriorism and empiricism. Moral rules are the legislative results of a universal intellectual development but are neither rigidly defined nor do they simply follow changing life conditions. Individualism and utilitarianism are strictly rejected. In his view, only the universal intellectual life can be considered an end in itself. Wundt also lectured on the idea of humanity in ethics, on human rights and human duties in his speech as Rector of Leipzig University in 1889 on the centenary of the French Revolution.¹⁰

Reception and criticism

Wundt's *Ethik* (1886, 4th. ed., in 3 vols. 1912a) has received more reviews than almost any other of his books, with the exception of *Grundzüge*. The main objections are directed against his denial of a final transcendental founding of ethics (God, the Absolute), and against evolutionism. This means that ethical norms would change culturally in the course of the mental development of mankind. Since Wundt had not discussed concrete ethical conflicts by means of examples, and had not commented on existing social ethics, these ethics appear to be rather abstract and less suited for providing everyday guidelines (see Fahrenberg, 2011). Guski-Leinwand (2013) investigated the

¹⁰ Explanations on the social and human purposes of ethics and the *development of humanity* are also found elsewhere (*Ethics*, 1912a, III, pp. 81-91; *Elements of Cultural Psychology*, 1912b, pp. 465-516).

humanitarian ideas in psychology at the beginning of the 20th century describing Wundt's view of humanity in comparison to the lack of orientation for humanity in the psychology of his successor, Felix Krueger. "The ethical orientation in psychology, or principally in the humanities (Geisteswissenschaften), was included in many scientific publications right up to the beginning of the First World War (e.g., Jodl, 1908, Wundt, 1912a, 1912b)." Poser (2005), in his introduction to Leibniz, devotes a chapter to wisdom and justice based on the themes of morality, reason, justice, mercy, and duty towards perfection, and sees a threefold basis for moral principles. The three principles of Leibniz's theory of law are: *to live honourably, do no harm, and to each his own (honeste vivere; neminem laedere, suum cuique tribuere)*" (p. 194).¹¹ Poser, however, does not discuss the interesting point made by Wundt that Leibniz marks the transition from individualistic to universalist ethics.

2. 11 Monism

Leibniz opposed Cartesian dualism with an innovative monism. With his monadology he differs markedly from atomism and from monism as Spinoza understood it. The principles of continuity and harmony, as well as principles such as *unity in plurality* (perspectivism), are characteristic for his conception of monism.

Wundt, in his book *Grundzüge der physiologischen Psychologie* (1874), in his Essay (1917), and in his autobiography (1920b), reaffirmed the striving for a unified, consistent and non-contradictory worldview as the essential demand of reason and the ultimate task of philosophy (1919, I, p. 1).

Quotes from Wundt

"But just as inevitably from this side, the developmental concept of the psychological condition leads to the view of human consciousness as an evolving product in the normal course of things and on the other hand the psychological investigation certainly adds to the conviction that the self-conception of man is the foundation upon which all knowledge rests. The next result of this self-conception, which stands more firmly than the certainty of the external world which we see only through the medium of our consciousness, is that we feel ourselves as a unitary being." (1874, p. 863).

Metaphysics represents the content of our knowledge "in general concepts and principles about being." He assigns to philosophy as a *general* science the task of uniting general knowledge, findings mediated by various sciences, into a consistent, non-contradictory system" (*Logic*, 1919b, I, p. 9). According to Wundt, every term is *metaphysical* which is understood as coming from motives arising directly from the structure of the world itself. Wundt has three perspectives on metaphysics. He distanced himself from the metaphysical concept of soul = spirit and from postulates on the structure and faculties (essence) of the soul. He is convinced that every individual science contains general presuppositions of a philosophical nature. He develops a theory of motivation (psychology of the will) based on his empirical psychology and expands it into a metaphysical voluntarism.

"Man himself, is not as he appears from without, but as he himself is from within – that is the real problem for psychology. Whatever else may be drawn into the realm of observations, there is a congruent and mental capacity that arises with universal human insight and action and the intellectual development of the individual as well of communities, which inevitably draws us back towards this principle challenge of man" (1906, p. 1).

¹¹ Leibniz. Codex juris gentium diplomaticus, Praefatio, A IV.5 61f. (see, Poser, 2016, p. 527)

3. The reception of Leibniz's philosophical psychology and Wundt's philosophically reflected psychology

3.1 Insufficient reception of the thoughts of Leibniz on psychology

Leibniz was undoubtedly very interested in topics which are now regarded as fields of psychology: attention and awareness, consciousness, memory, learning (association), motivation (the act of "striving" and the general dynamics of development), and individuality. His discussions in the *New Essays* and *Monadology* often rely on everyday observations such as the behaviour of a dog or the noise of the sea, and he develops intuitive analogies (the synchronous running of clocks, the functions of a machine in mills, or the balance spring of a clock). He also devises postulates and principles that apply to psychology: the continuum of the unnoticed to the self-aware sensory impressions, developmental dynamics, parallelism from the point of view of causality and of purpose, perspectivism, and many more creative thoughts.

Originally, Wundt seems to have been particularly interested in Leibniz's epistemology – as opposed to Locke's simplistic sensualism. Wundt subsequently developed his most important field of research: apperception psychology, which also became the theoretical basis of his cultural psychology. Since 1862, he dealt exhaustively with Leibniz's thoughts, as his Leibniz Essay (1917) show, and he received many suggestions for his empirical research program. From this experience, he emphatically established the importance of philosophical and, in particular, epistemological reflection on empirical psychology.

What is astonishing is the insufficient reception of Leibniz's thoughts on central themes of psychology and, no less importantly, his epistemological theories within this discipline. An "underappreciated pioneer of psychology" is a phrase used by Fanher and Schmidt (2003), but this is too restrained for this situation. Christian Wolff (1738/1972) and Carl Gustav Carus (1808) had already recognized Leibniz's outstanding importance. Thus, Carus writes in his often-quoted history of psychology that Leibniz is "*the creator of a new psychology*, although he did not elaborate on it further." (p. 532).

Although Carus is acquainted with some of the essential thoughts of Leibniz, he gives less space for them than for Locke or for Wolff. While Tetens (1777) or Beneke (1820) completely dismiss Leibniz, Dessoir (1894) at least mentions him briefly. In the more recent research on Leibniz, there is a distinction between the tradition in *philosophy* and that in *psychology*, and also between the reception within *German* and *Anglo-American* psychology. Thus, Überweg's (1896/1924, pp. 299-340) *Encyclopedia Grundriss der Geschichte der Philosophie der Neuzeit bis zum Ende des 18. Jahrhunderts (Outline of The Philosophy of the Modern Age)*, contains a compact introduction to Leibniz's thinking: epistemological principles, the principles of monadology and the body-soul problem, as well as the issues of perception and apperception. Among the overall representations of Leibniz's philosophy, Wundt's Leibniz Essay from 1917 is also listed here. In the *Historical Encyclopedia of Philosophy* (Ritter et al., 1971-2007), Leibniz's thoughts are reviewed and commented on in numerous articles.

More recent Leibniz representations in German-speaking philosophy reveal only minor interest in topics of relevance to psychology (Beiderbeck and Waldhoff, 2011, Holz, 2013, 2015, Leinkauf, 1996, Liske, 2000, Poser, 2005, 2016). The great principles, i.e. the Law of Continuity, Harmony, Individuality, and principles of knowledge, including morality and law, are usually referred to and commented upon from the current point of view. Perception, apperception, and other psychological concepts such as self-awareness, learning and striving, or parallelism and perspectivity, are either missing or submerged in other ideas – along with mathematical and natural sciences, philosophical,

theological and political thought – and then only as side issues. The contributions of Leibniz to the foundation of empirical psychology and their principles are generally not taken up, and direct references to Wundt's empirical psychology are lacking throughout.

There is an exception to philosophers who obviously overlook Leibniz's psychology. In an essay *Leibniz's Theory of Perceptions Today*, Poser (2009) attempts to bring to life a fundamental subject on the fringes of philosophy and psychology. He underscores the stimulating potential of Leibniz's "perception theory" as the central metaphysical foundation of the doctrine of the monad. The totality of all their perceptions guarantees the *individuality* of each monad in that the appetitus-driven perception sequence includes their individual history as an *individual law* – and at the same time as a complete, albeit mostly dark, reflection of the universe (p. 1). Perception theory leads on to the question of the ego, as Leibniz "is today seen as the founder of the modern question of the ego, because the ego of the Cartesian cogito, just like the transcendental self of Kant, lacks all individuality. On the other hand, Leibniz stresses that "ego is seen as one of the absolutely simple and indefinite basic concepts: the unity of the perceptive [i.e. the uniqueness of the ego] effects the linking of the perceptions." (p.10). It may be questioned whether Leibniz's "perception theory" in the present time can be reconstructed solely from the perspective of philosophy without discussing Wundt's highly differentiated apperception theory. Without basic concepts from cognitive psychology and neuropsychology? While, at that time, the interdisciplinary thinking of *one person* could grasp this horizon, an interdisciplinary, cooperative approach would be necessary today.

In recent German representations of the history of psychology, few of Leibniz's ideas are brought up and briefly commented on – mostly those regarding perception-apperception and consciousness (Pongratz, 1967; Eckardt, 2010; Schönplflug, 2013, Walach 2013). There is, however, no coherent presentation of the essential principles. In textbooks of general psychology, too, there are seldom references to Leibniz. Often only his name is mentioned in lists of interesting philosophers, or individual concepts such as monadology or perception and apperception (incorrectly also "the unconscious") are quoted but there is no insight into his psychology and theory of knowledge. In the *Dorsch-Lexikon der Psychologie* (Wirtz et al., 2013) only his name is mentioned in 13 entries, but there is no article about Leibniz. The general impression of minimal interest in Leibniz's psychology is underlined when PubPsych and PsycInfo are researched for more recent work on Leibniz, or when the books written by philosophers on Leibniz are screened. The two databases, limited to Leibniz for title and from 1956 for publication year, provide almost no direct evidence of the presence of Leibniz's ideas in today's psychology. There are merely some short essays (e.g., Engfer, 1988), on secondary subjects, or brief contributions to encyclopaedias.

The Anglo-American reception of Leibniz

In the three English-language encyclopaedias (*Britannica*, *Stanford Encyclopedia*, *Internet Encyclopedia of Philosophy*) the term psychology and any reference to Wilhelm Wundt are missing in the articles on Leibniz. Only Kulstadt and Carlin (2013) briefly discuss selected issues such as *Denial of Mind-Body Interaction*, *Assertion of Pre-established Harmony*, *Language and Mind*, *Perception and Appetition*, *Apperception*, *Desire and the Unconscious*. Leibniz is mentioned in textbooks on the history of psychology, and some of his concepts (such as apperception, pre-established harmony, or monadology) are cited, but in no way given a systematic relation to Leibniz's philosophical psychology. William James (1901) obviously had no access to Leibniz's seminal ideas – he did not mention Leibniz at all. In view of the Anglo-American literature on the history of psychology, and specifically the counterproposal of a *Leibnizean* (Continental) and

Lockean (Anglo-American) psychology popularized by Allport (1955; see, Verhave, 1967, p. 111 f), there is a permanent misunderstanding. Leibniz by no means rejects the psychological principle of *association*. After all, Leibniz's *New Essays* contain, as Verhave underlined, a Chapter on "The Association of Ideas" (Book 2, Ch. 33).

"One could – heaven forbid – easily be left with the erroneous impression that Leibniz was strangely against all forms of associationism. ... The facts are, however, not only that Leibniz did use the principle of association, he was also very likely the first continental author to adopt John Locke's (1632-1704) now famous phrase [Of the association of ideas, in *An Essay concerning human understanding*, inserted in the 4th ed., 1700] for a twin chapter in his own *New Essays*. In this context he discussed observations on memory and learning phenomena in humans and animals and offered explanations about the association of ideas (and motor activities) – "and one may have reason to speak of a German associationist tradition." (Verhave, 1967, p. 113). "It will be observed that Leibniz discusses frequency, intensity, recency, and emotional effect as factors in habituation many years (1667) before Locke's famous chapter on association (first published in 1700, although probably written some years before). ... As Leibniz's own text indicates, the law of exercise was already proverbial and part of (German) 'common sense' during the latter half of the 17th century! As far as frequency, recency, and emotional factors are concerned, Thomas Brown (1857) is once more robbed of priority ..." (p. 115).

Verhave refers to Loemker (1956, p. 65), who translated and edited selected writings by Leibniz and "asserts that psychology was a central interest of Leibniz and goes on to prove it quite convincingly" (Verhave, FN p. 114). "Strangely enough, none of these interesting matters are either mentioned, let alone discussed, by the textbook writers. They all, whether by choice or due to lack of first-hand acquaintance with Leibniz's own writings" concentrate on his monadology (p. 114).

Loemker's (1956/1969) Introduction actually emerges from the usual Leibniz reception as it explains in several sections: *Leibniz's Psychology, Theory of Knowledge, Structure and Purpose, Ethics and Social Thought* (pp. 37-49). "It is psychology rather than biology which provides Leibniz with his most concrete metaphysical analogies, as mathematics provided him with the analogies to the universal harmony. The human situation is such that we ourselves are metaphysical individuals of high order and possessed of a unique ability to observe ourselves and thus to know one monad, at least, intimately and directly without the intervention of symbols, and therefore not as a mere appearance.

Psychology had been a central interest of Leibniz since his student days, when he outlined a functional account of mind, of Aristotelian pattern and without an analysis of subjective content, in a long note amplifying the ethics of Thomasiaus." ... "His general method was to find application here as well as in physics; mind was to be approached both *a priori* and *a posteriori*, both from general principles and from direct observation. In the latter method Leibniz showed great skill, particularly in studying dream processes (No. 5, III [referring to Leibniz Essays contained in this book]), memory, states of extreme fatigue and introversion (No. 13), and the like. His empirical psychology had as its object the mind, not the body, though he sometimes made skilful use of Hobbes's theory of physiological traces and found important analogies in animal behaviour and animal drives to the organization of the human mind on levels below that of reason (No. 2). His analysis of mental growth, of the motives and processes of human learning and even of the law of association are thoroughly functional. Even his theory on the unconscious, though demanded by

the structure of his thinking, was given support by the empirical facts of human responses." (pp 37 f).

"Only through reflection can perception become apperception, and appetite will, so that a clearly and distinctly perceived unity of purpose may emerge. From 1670 on Leibniz thinks of reflection as the source of the felt unity of consciousness. But such growing experience of self, still intermittent and confused, is not yet self-knowledge. To know one's self is to perceive clearly the real unity from which the manifoldly changing states emerge, and this is possible only when critical thought has discovered the permanent law of the individual series. Personal identity resides not merely in self-consciousness but in the law according to which the series of one's experience develops. ... Personality is for Leibniz essentially a moral concept. It implies apperception, for our person is 'the memory and knowledge of what we are.' But Leibniz is moved by the legal conception of person to find its essence in moral responsibility, thus providing the psychological unit upon which his social philosophy is built." (p. 39)

"In contrast to the metaphysical constructions which create these difficulties in Leibniz's psychology, however, his perceptive insights into the depths of the mind and its complex activities have proved to be suggestive to the psychologists who followed him, and the development of mentalistic psychology from Herbart's and Wundt's theories of apperception to later theories of the unconscious may be interpreted as an increasingly anti-intellectualistic and voluntaristic version of some of his views. Even today, his notions of an individual law, of an only infrequently and imperfectly organizing and guiding agent, and of the sharp difference between conditioned response and thought are guiding principles which theories of mind must take seriously" (p. 41). "Leibniz's realistic theory of knowledge is completed by his practical conception of man and his idealistic metaphysics." ... "With the union of the internal analogy from consciousness and the external analogy from the mathematical-logical structure of existence, Leibniz's metaphysics assumes its final form, in terms of which his principles are unified and the various realms of existence and essence harmonized" (pp. 44 f).

In his introduction to early writings and important letters by Leibniz, Woolhouse (1998) does not deal with psychology but briefly examines the *Metaphysics of Causation* and *The Union of Body and Mind* as well as *Humans, Animals and their Minds*. He points to the systematization of Leibniz's philosophy by Christian Wolff and its impact on Kant and German philosophy in the eighteenth century, as well as recent writers in France and England, referring to Leibniz (Bertrand Russell, Gilles Deleuze, and others). There is no reference whatsoever to Wundt, nor to any relation to psychology, nor to any understanding of the double-view, which is essential for psychophysical parallelism, according to the principles of causation and purpose. Leibniz describes the "representational nature of the soul which must express what happens, and indeed what will happen, in its body ..." (Leibniz, 1698, Letter relating to Bayle's comment on the *New System of the Union of the Soul and Body*, § 13, see Woolhouse, 1998, p. 207). "And the body is so constructed that the soul never makes decisions to which bodily movements don't correspond, even the most abstract reasonings having their place there, through the symbols which represent them to the imagination" (Leibniz, Reply to the Comments of M. Bayle's, 1702, § 7; see Woolhouse, 1998, p. 246). "Leibniz's name is never absent from discussions of the principle of identity of indiscernibles according to which two things with all their properties in common are in reality one and the same thing; and this principle's converse, often appealed to in the philosophy of mind to show that states of mind cannot be identical with brain states because they have different properties, is often called 'Leibniz's law'" (Woolhouse, 1998, p. 48). "The 'representational

concomitance' between the body and the mind is complete. Leibniz maintains complete 'agreement' between them. In his view, everything that happens in the mind has a correspondence with something in the body (p. 35).

Fancher and Schmidt (2003, p. 1) state: "The German philosopher Gottfried Wilhelm Leibniz (1646-1716) was not popular in England in his lifetime, and a certain tendency to deprecate him in the English-speaking world has continued ever since. Bertrand Russell, for example, conceded that Leibniz was "one of the greatest intellects of all time" but gratuitously added: "As a human being he was not admirable ... He was wholly destitute of those higher philosophic virtues that are so notable in Spinoza" (Russell, 1945, p. 581). Edward G. Boring's classic history of psychology baldly described Leibniz as "less important for experimental psychology than Descartes or Locke" (Boring, 1950, p. 166) and accordingly devoted less than half the space to him than the two others. Gordon Allport (1955) attempted to counter this attitude by proposing that a "Leibnizean" emphasis on an active and purposive mind ought to be given equal weight to the "Lockean" conception of the mind as a tabula rasa passively awaiting and recording the impressions of sensory experience. But Allport's has remained a minority view within anglophone psychology. Most history textbooks follow Boring's example and give more emphasis to Locke."

Fancher and Schmidt devote 10 pages to *biographical* notes and only 9 pages to Leibniz's *Psychological Contributions*, with only Leibniz's *New Essays* being quoted. The first topic is *Artificial Intelligence*, then *Cross Cultural Psychology* because of Leibniz's interest in the highly developed Chinese culture and way of thinking. *Mental Philosophy* contains some references to monadology, prestabilized harmony, *unconscious petites perceptions*, and the rejection of Locke's sensualism.

"In sum, Leibniz offered a strong argument that the human mind cannot be understood simply as a passive reflector or recorder of the things it experiences, but rather is itself an important contributor to its experience. The mind has its own tendencies and predispositions to experience the world in certain ways, as well as certain limitations in the extent and acuity of its awareness. With the assistance of its own apperceptive abilities, however, the mind has at least the potential ability to understand its own predispositions, and in some cases to overcome its limitations. Here, in a nutshell, was a rationale for the establishment of a discipline devoted to the systematic study of the mind. Accordingly, it was no historical accident that the generally acknowledged founders of psychology as an independent discipline were not the British successors of Locke and the associationistic tradition, but German-speaking followers of Leibniz. Kant, Helmholtz, and Wundt, among others, who advanced the idea that human experience is determined by the interaction between an external world of sensory stimulation and an active mind or perceptual apparatus that processes that stimulation. And Herbart and Fechner both emphasized the phenomena of unconscious and subliminal ideation, before those concepts were raised to supreme importance in the psychoanalytic theories of Freud. Each of these individuals attempted its own way to specify the rules and laws by which the human mind participates in the creation of its own experience, and thus helped to fulfil a program previously envisaged by Leibniz." (2003, pp. 16 f).

Ehrenstein (2008) highlights "modern" concepts in *system theory*. "With respect to life sciences, Leibniz provided a remarkable framework for investigating complex, organic, and particularly mental phenomena by conceiving the surface organization of phenomena as dependent on a deeper order of underlying micro-processes so as to account for the emerging organization (Duchesneau, 2003). In particular, Leibniz postulated genuine units (monads) as autonomous and predisposed tendencies of living activity resulting in a multitude of original worldviews. Unity and activity where the concepts on which Leibniz's original metatheory of being, his dynamic holism,

essentially relied" (p. 1). "Leibniz's monadology can be understood as a theory of units: "They vary in strength and extent of their perceptive capacities and are organized within a multi-level hierarchy from simple, sentient, and rational monads to a unique supreme monad" (p. 6). "Modern psychophysics and brain research strikingly echo to Leibniz's phenomenalism in resembling holonomic organization, yet without reference to Leibniz" (p. 9). Leibniz, nowadays, is seen as a "universal genius" ... As eminent a mathematician, logician, engineer, philosopher, and physicist as he was, he is hardly recognised as a psychologist, ... who particularly anticipates key issues of Gestalt psychology and *Ganzheitspsychologie*. ... In fact, Leibniz is rarely mentioned in current textbooks of psychology" (Ehrenstein, 2008, p. 3).

Vidal (2011) refers to a large number of French and English-language authors, such as Bonnet, Condillac, Descartes, École, and, of course, especially Locke. Among the German authors, Leibniz is mentioned in short along with Carus, Herder, Kant, Wolff, however, without referring to any publication by Leibniz. Thus, the question arises as to the extent to which the book title is valid: *The Sciences of the Soul. The Early Modern Origins of Psychology*.

Verhave concluded his critical investigation by pointing out the misrepresentation of eminent authors by quoting Thorne Shipley: "... much of the knowledge, even of the scholars, comes from secondary sources. Most of us, surely, know this, and are willing to accept it because we believe ourselves to be surrounded, somewhere, by colleagues who have studied the originals. Upon closer questioning, however, more often than not, we find that our colleagues are at best relying on different secondary sources, or, mirror-like, are relying on us!" (1961, pp. 20-21).

3. 2 The connection between philosophy and psychology

Wundt claims that philosophy as a general science has the task of "uniting to become a consistent system through the general knowledge acquired via the individual sciences." Human rationality strives for a uniform, i.e. non-contradictory, explanatory principle for being and consciousness, for an ultimate reasoning for ethics, and for a philosophical world basis. Metaphysics is the same attempt to gain a binding world view, as a component of individual knowledge, on the basis of the entire scientific awareness of an age or particularly prominent content." (1919-1921, I, p. 17). Wundt was convinced that empirical psychology also contributed fundamental knowledge on the understanding of humans – for anthropology and ethics – beyond its narrow scientific field. Starting from the active and creative-synthetic apperception processes of consciousness, Wundt considered that the unifying function was to be found in volitional processes and the conscious setting of objectives and subsequent activities. "There is simply nothing more to a man that he can entirely call his own – except for his will." (1919, I, p. 375). Wundt believed that the source of dynamic development was to be found in the most elementary expressions of life, in reflexive and instinctive behaviour, and constructed a continuum of attentive and apperceptive processes, volitional or selective acts, up to social activities and ethical decisions. At the end of this rational idea he recognised a practical ideal: the idea of humanity as the highest yardstick of our actions and that the overall course of human history can be understood with regard to the ideal of humanity (1912b, III, pp.329-344; 1912a, pp. 573-577).

One can detect a "voluntaristic tendency" in Wundt's theory of motivation, in contrast to the currently widespread cognitivism (intellectualism). Wundt extrapolated this empirically founded theory of motivation to a metaphysical voluntarism. He demands, however, that the empirical-psychological and derived metaphysical voluntarism are kept apart from one another, and firmly maintained that his empirical psychology was created independently of the various teachings of

metaphysics. (1919, I, pp. IX f.). Wundt distanced himself from the metaphysical term *soul* and from theories about its structure and properties, as posited by Wolff, Herbart, Lotze and Fechner. Wundt followed Kant and warned against a primarily metaphysically founded, philosophically inferred psychology: "where one notices the author's metaphysical point-of-view in the treatment of every problem then an unconditional empirical science is no longer involved – but a metaphysical theory intended to serve as an exemplification of experience." (1896, p. 22).

"Philosophy has in common its content with the totality of the sciences, but it takes a different standpoint for contemplation by considering the linking of facts and concepts; it thus divides itself into two main parts: the theory of knowledge and the theory of principles (or metaphysics). The doctrine of principles has both a negative and a positive function: the critique of the metaphysical presuppositions in every science, and the correction and supplementation of metaphysical hypotheses." The indisputability of metaphysics is established by Wundt: "If it were possible to ban them from philosophy, it would probably not disappear from the individual sciences." (1897, p. 33). Wundt is convinced that every single science contains general prerequisites of a philosophical nature. "All psychological investigation extrapolates from metaphysical presuppositions" (1919, I, pp. IX f.) Epistemology should assist sciences to find out about, clarify or supplement their metaphysical aspects and, as far as possible, free themselves of them. Psychology and the other sciences always rely on the help of philosophy here, and particularly on logic and epistemology, otherwise only an immanent philosophy, i.e. metaphysical assumptions of an unsystematic nature, would form in the individual sciences (1897, p. 33.) Wundt is decidedly against the segregation of psychology from philosophy. He is concerned about psychologists bringing their own personal metaphysical convictions into psychology and that these presumptions would no longer be exposed to epistemological criticism. "Therefore, nobody would suffer more from such a segregation than the psychologists themselves and, through them, psychology." (*Psychology's Struggle for Existence*, 1913, p. 24.) "Nothing would promote the degeneration [of psychology] to a mere craftsmanship more than its segregation from philosophy." (p. 37.)

Wundt is thoroughly convinced that empirical psychology is dependent on the philosophical and epistemological reflection of its theoretical and methodological presuppositions. This very idea of the intrinsic connection between psychology (and the other sciences) with philosophy was the theme of his inaugural lecture in Zurich in 1874. The German Historical Museum in Berlin has a 1918 shellac disk on which Wundt repeats the closing words of his inaugural lecture (re-read in 1918 for documentation purposes): "On the task of philosophy in the present". It was only in 2016 that a digital audio file (mp3) was made available (Fahrenberg, 2016c).

Psychology, on the one hand, is to be inductive, to develop and combine new methods and to follow certain guiding principles. On the other hand, psychology must have an empirical basis in the general experience of man. Psychology is neither to be deduced from a metaphysical position, nor from scholastic conceptual definitions, nor from naive introspection and personal life experience.

Wundt's thinking and work are an outstanding instance of how psychological research and theories are linked to philosophical and epistemological theories and principles. He further developed philosophical ideas from Leibniz into the guiding principles of his empirical psychology: the actively aspiring apperception and self-awareness, the psychophysical parallelism and the perspectives of the causal and the principles of purpose and knowledge of mental causality. These concepts are not a simple adaptation of Leibniz's ideas. As regards the scientific guiding principles and strategies of psychology, they are first brought about by the methodological transformation into strategies of

research and by their "secularization", because Wundt disentangled these ideas from their theological foundation in the belief of God and the Soul. He did not, however, express this secularization with any particular force, perhaps because of the deep split that this step might result in for the majority of his readers. Wundt constructed the foundations of his empirical psychology without the metaphysics of the Christian religion. On the other hand, Wundt thought it impossible to exclude metaphysics (ontology), because he was convinced that human reason is based on a unity of knowledge, on a unified view of the experience of nature and mind. For Wundt as well as for Kant, however, metaphysics is not a philosophical system from which the theories of empirical psychology are *derived*, but the philosophical reflection of the presuppositions beyond the world of experience which is indispensable.

Every science must build on presuppositions, i.e. on logic, on the laws of thought and fundamental categories, but also on epistemological assumptions. These essential decisions include, inter alia, the idea of inner and outer experience, the subject-object problem, and the relationship between consciousness and brain, the mind (soul)-body problem. In general, Wundt describes such assumptions as *metaphysical*, for they extend far beyond the limits of experience. It is the challenge of the philosophical theory of knowledge to recognize such controversies, to discuss certain views, and possibly to contribute to their "correction" in the empirical sciences.

Wundt's psychology, his theory of apperception and motivation, the heuristics of a complementary, causal and teleological analysis within the general reference frame of psychophysical parallelism, accompanied by the multimethod approach, can be regarded as fundamental and distinctive. To this extent, the essential correspondences to Leibniz's conception must be emphasized. Another issue is the fact that Leibniz's, as well as Wundt's, entire psychology and epistemology are ignored in today's textbooks, with very few – hesitant – exceptions.

3.3 The break with tradition

The apparently very minor after-effect of Leibniz's thinking within the discipline of psychology is also astonishing for another reason. He found his most important interpreter in Wilhelm Wundt, and it would be of great interest to explore these fundamental intellectual influences on the most important *founder of psychology as a discipline*. Wundt quoted Leibniz very often and published a detailed and aspiring monograph. The varied and constructive influence of Leibniz's principles on Wundt is therefore well documented. These relationships, however, seem to have never been systematically investigated. But Wundt also became an outsider in our time who is hardly ever read in the original, so that many of today's textbooks contain only very brief references to Wundt and then often only include stereotypes or fundamental misunderstandings (for an investigation regarding reception and impact, see Fahrenberg, 2011).

In summary, it can be said that in German- and English-language historiography of psychology (with very few exceptions) there are astounding and radical breaks with tradition regarding Leibniz's philosophical psychology and Wundt's philosophically reflected empirical psychology.

This view was further expanded and discussed in the author's 2018 book on Wilhelm Wundt (1832-1920). Gesamtwerk: Einführung, Zitate, Kommentare, Rezeption, Rekonstruktionsversuche (the revised and supplemented English translation, 2019).

References

Note: **HWP**, = Historisches Wörterbuch der Philosophie (Ritter, J., Gründer, K. & Gabriel, G. (1971-2007). Historisches Wörterbuch der Philosophie, 13 Volumes).

MON refers to Leibniz's Monadology (transl. Bennett. 2006).

NE refers to Leibniz's New Essays (transl. Bennett, 2008).

Allport, G. W. (1955). *Becoming: basic considerations for a psychology of personality*. New Haven: Yale University Press.

Araujo, S. F. (2016). *Wundt and the Philosophical Foundations of Psychology. A Reappraisal*. New York: Springer.

Aristoteles. *Über die Seele. De anima*. (hrsg. von H. Seidl, 1995). Hamburg: Meiner.

Beneke, F. E. (1820). *Erfahrungsseelenlehre als Grundlage alles Wissens*. Berlin: Mittler.

Blumenthal, A. L. (1980). Wilhelm Wundt – Problems of interpretation. In: W. G. Bringmann & E. D. Tweney. (Eds.). *Wundt Studies. A Centennial Collection* (pp. 435-445). Toronto: Hogrefe.

Boring, E. G. (1929/1950). *A history of experimental psychology*. New York: The Century Company.

Borsche, T.: Individuum, Individualität. *HWP*, Vol. 4, pp. 310-323.

Borsche T.: Intellektualismus. *HWP*, Vol. 4, pp. 439-444.

Carus, F. A. (1808). *Geschichte der Psychologie*. Leipzig: Barth (Nachdruck hrsg. von R. Jeschonnek, 1990, Berlin: Springer).

Danziger, K. (2001). Wundt and the temptations of psychology. In: R.W. Rieber & D. K. Robinson (Eds.). *Wilhelm Wundt in history: The making of a scientific psychology* (pp. 69-94). New York: Kluwer-Academic.

Dessoir, M. (1894). *Geschichte der neueren deutschen Psychologie. Erster Band. Von Leibniz bis Kant*. Berlin: Duncker.

Eckardt, G. (2010). *Kernprobleme in der Geschichte der Psychologie*. Wiesbaden: Verlag für Sozialwissenschaften.

Ehrenstein, W. H. (2008). Leibniz' Dynamic Holism. In: R. Diriwächter & J. Valsiner (Eds.). *Striving for the whole: Creating theoretical syntheses* (pp.1-11). New Brunswick, N.J. Transaction Publishers

Eisler, R. (1902). *W. Wundts Philosophie und Psychologie*. Leipzig: Barth.

Eisler, R. (1904). *Wörterbuch der philosophischen Begriffe*. Berlin: Mittler. <http://www.textlog.de/1381.html>

Engfer, H. J. (1988). Konzeption des Psychischen und der Psychologie zwischen Leibniz und Wolff. In G. Jüttemann (Hrsg.). *Wegbereiter der Historischen Psychologie*. (pp. 23-27). München: Beltz.

Fahrenberg, J. (2007). *Menschenbilder. Psychologische, biologische, interkulturelle und religiöse Ansichten. Psychologische und Interdisziplinäre Anthropologie*. e-book. PsyDok

<http://hdl.handle.net/20.500.11780/431>

Fahrenberg, J. (2011). *Wilhelm Wundt – Pionier der Psychologie und Außenseiter? Leitgedanken der Wissenschaftskonzeption und deren Rezeptionsgeschichte*. e-book. PsyDok

<http://hdl.handle.net/20.500.11780/662>

Fahrenberg, J. (2012). *Wilhelm Wundts Wissenschaftstheorie. – Ein Rekonstruktionsversuch*. *Psychologische Rundschau*, 63 (4), 228-238.

Fahrenberg, J. (2013). *Zur Kategorienlehre der Psychologie. Komplementaritätsprinzip. Perspektiven und Perspektiven-Wechsel*. Lengerich: Pabst Science Publishers. ISBN 978-3-89967-891-8. PsyDok

<http://hdl.handle.net/20.500.11780/662>

Fahrenberg, J. (2015a). *Theoretische Psychologie – Eine Systematik der Kontroversen*. Lengerich: Pabst Science Publishers. ISBN 978-3-95853-077-5. <http://hdl.handle.net/20.500.11780/904>

Fahrenberg, J. (2015b). *Wilhelm Wundts Neuropsychologie*. In: D. Emmons & A. Laihinen (Hrsg.). *Festschrift für Prof. Dr. Ulrike Halsband. Serie Neuropsychology: An Interdisciplinary Approach* (pp. 347-377). Berlin: Lit Verlag.

Fahrenberg, J. (2016a). *Leibniz' Einfluss auf Wundts Psychologie, Philosophie und Ethik*. PsyDok

<http://hdl.handle.net/20.500.11780/3675>

- Fahrenberg, J. (2016b). Wilhelm Wundts Kulturpsychologie (Völkerpsychologie): Eine Psychologische Entwicklungstheorie des Geistes. PsyDok <http://hdl.handle.net/20.500.11780/3674>
- Fahrenberg, J. (2016c). Wilhelm Wundts Nachlass. Eine Übersicht. PsyDok <http://hdl.handle.net/20.500.11780/3676>
- Fahrenberg, J. (2016d). Historische Seite. Leibniz' Einfluss auf Wundts Psychologie und Philosophie. Psychologische Rundschau, 67 (4), 276.
- Fahrenberg, J. (2018). Wilhelm Wundt (1832-1920). Gesamtwerk: Einführung, Zitate, Kommentare, Rezeption, Rekonstruktionsversuche. Lengerich: Pabst Science Publishers.
- Fahrenberg, J. (2019). Wilhelm Wundt (1832 – 1920). Introduction, Quotations, Reception, Commentaries, Attempts at Reconstruction. Lengerich: Pabst Science Publishers.
- Fancher, R. E. & Schmidt, H. (2003). Gottfried Wilhelm Leibniz: Underappreciated pioneer of psychology. In: G. A. Kimble & M. Wertheimer (Eds.). Portraits of pioneers in psychology, Vol. V (pp. 1-17). Washington, DC: American Psychological Association.
- Fechner, G. Th. (1851/1901). Zend-Avesta oder über die Dinge des Himmels und des Jenseits. Vom Standpunkt der Naturbetrachtung (3 Bände). Hamburg: Voß.
- Fechner, G. Th. (1860). Elemente der Psychophysik (2 Bände). Leipzig: Breitkopf & Härtel (2. Auflage. Leipzig 1889).
- Fechner, G. Th. (1861). Ueber die Seelenfrage. Ein Gang durch die sichtbare Welt, um die unsichtbare zu finden. Leipzig: Amelang.
- Freigius, J. Th. (1574). Quaestiones logicae et ethicae. Basel: Petri.
- Friedrich, M. (1883). Über die Apperceptionsdauer bei einfachen und zusammengesetzten Vorstellungen. Philosophische Studien, 1, 39–77.
- Gerhardt, C. J. (Hrsg.). (1816-1899). Die philosophischen Schriften von Gottfried Wilhelm Leibniz. (Nachdruck der deutschen Ausgabe Berlin 1875-1890; German, Latin, French) (Reprints). Hildesheim: Olms.
- Graumann, C. F. (1980). Experiment, Statistik, Geschichte. Wundts erstes Heidelberger Programm einer Psychologie. Psychologische Rundschau, 31, 73-83.
- Guski-Leinwand, S. (2013). Die Abwendung vom Humanitätsgedanken in der Psychologie und die Folgen für "Wissenschaftlichen Antisemitismus", „Ganzheit“ und Totalitarismus. Habilitationsschrift. Fakultät für Sozial- und Verhaltenswissenschaften der Friedrich-Schiller-Universität Jena. Deutsche Digitale Bibliothek <http://www.ddb.de>
- Hartmann, E. von (1900). Zum Begriff des Unbewussten. Archiv für systematische Philosophie, 6, 273-290.
- Hartmann, E. von (1901). Die moderne Psychologie. Eine kritische Geschichte der deutschen Psychologie in der zweiten Hälfte des neunzehnten Jahrhunderts. Leipzig: Haacke.
- Hartmann, N. (1940/1949). Der Aufbau der realen Welt. Grundriss der allgemeinen Kategorienlehre (2. Aufl. 1949). Berlin: de Gruyter.
- Hartmann, N. (1950). Philosophie der Natur. Abriss der speziellen Kategorienlehre. Berlin: de Gruyter.
- Herbart, J. F. (1816/2003). Lehrbuch zur Psychologie. Teil 1 und 2. Königsberg: Unzer (3. Aufl., hrsg. von G. Hartenstein, Hamburg: Voss, Reprint hrsg. von M. Kaiser-el-Safti). Würzburg: Königshausen & Neumann.
- Herbart, J. F. (1824-1825). Psychologie als Wissenschaft, neu gegründet auf Erfahrung, Metaphysik und Mathematik (2 Bände). Königsberg: Unzer.
- Herzog, R.: Gemeinwohl II. HWPh, Vol. 3, pp. 251-258.
- Hildebrandt, H.: Parallelismus, psychophysischer. HWPh, Vol. 7, pp. 100-107.
- Hoche, H.-U. (1990). Einführung in das sprachanalytische Philosophieren. Darmstadt: Wissenschaftliche Buchgesellschaft.
- Hoche, H.-U. (2008). Anthropological complementarism. Linguistic, logical, and phenomenological studies in support of a third way beyond dualism and monism. Paderborn: mentis.
- Holz, H. H. (2013). Leibniz. Das Lebenswerk eines Universalgelehrten. Darmstadt: Wissenschaftliche Buchgesellschaft
- Holz, H. H. (Hrsg.). (2015). Leibniz in der Rezeption der klassischen deutschen Philosophie. Darmstadt: Wissenschaftliche Buchgesellschaft.
- Holzey, H.: Prinzip III. HWPh, Vol. 7, pp. 1326-1363.
- James, W. (1890/1901). The principles of psychology. London: Macmillan (2nd ed., 2 Vols. 1901).

- Jaeschke, W.: Selbstbewusstsein. HW Ph Vol. 9, pp. 352-371.
- Janke, W.: Apperzeption. HWPPh, Vol. 1, pp. 448-450.
- Janke, W.: Appetion (Leibniz). HWPPh, Vol. 1, pp. 456-457.
- Janke, W. : Perceptions, petites. HWPPh, Vol. 7, pp. 236-238.
- Jodl, F. (1894). Rezension von Wundts Ethik, 2. Aufl. 1892. Philosophische Monatshefte, 30, 205-207.
- Jüttemann, G. (Hrsg.). (2006). Wilhelm Wundts anderes Erbe. Ein Missverständnis löst sich auf. Göttingen: Vandenhoeck & Ruprecht.
- Kaiser-El-Safti, M.: Unbewusstes, das Unbewusste. HWPPh, Vol. 11, pp.124-133.
- Kim, A. (2016). "Wilhelm Maximilian Wundt", The Stanford Encyclopedia of Philosophy (Fall 2016 Edition), Edward N. Zalta (ed.), URL = <<https://plato.stanford.edu/archives/fall2016/entries/wilhelm-wundt/>>.
- König, E. (1901). W. Wundt als Psycholog und als Philosoph. Stuttgart: Frommans. (3. Aufl. 1903)
- König, G.: Perspektive I (allg.). HWPPh, Vol. 7, pp. 363-375.
- Kohlenberger, H. K.: Gerechtigkeit II. HWPPh, Vol. 3, p. 334-335.
- Korn, J. H., Davis, R. & Davis, S. F. (1991). Historians' and Chairpersons' Judgements of eminence among psychologists. American Psychologist, 46, 789-792.
- Kulstad, M. & Carlin, L. (2013). Leibniz's Philosophy of Mind. The Stanford Encyclopedia of Philosophy (Winter 2013 Edition), Edward N. Zalta (ed.) <<https://plato.stanford.edu/archives/win2013/entries/leibniz-mind/>>.
- Lange, F. A. (1866). Geschichte des Materialismus und Kritik seiner Bedeutung in der Gegenwart. Iserlohn: Baedeker. (8. Aufl. 1908, hrsg. und bearbeitet von Hermann Cohen).
- Leibniz, G. W. (1695). A new system of nature and of the interaction of substances, and also of the union that exists between the soul and the body (transl. by Jonathan Bennett, 2006)
<http://www.earlymoderntexts.com/authors/leibniz>
https://fr.wikisource.org/wiki/Page:Leibniz_-_Die_philosophischen_Schriften_hg._Gerhardt_Band_5.djvu/11
- Leibniz, G. W. (1701-1704/1765). Neue Abhandlungen über den menschlichen Verstand (Nouveaux essais sur l'entendement humain; entstanden 1701-1704). In: Th. Leinkauf (Hrsg.). (1996). Leibniz. München: Eugen Diederichs Verlag. (pp. 320-345).
- Leibniz, G. W. (1701-1704/1765). New Essays on Human Understanding (transl. by Jonathan Bennett, 2008). = NE <http://www.earlymoderntexts.com/authors/leibniz>
- Leibniz, G. W. (1714). Principles of nature and grace based on reason (transl. by Jonathan Bennett, 2006).
<http://www.earlymoderntexts.com/authors/leibniz>
- Leibniz, G. W. (1714/1720). Die Prinzipien der Philosophie und Monadologie (Les principes de la philosophie ou la monadologie). In: Th. Leinkauf (Hrsg.). (1996). Leibniz. (pp. 406-424). München: Eugen Diederichs Verlag.
- Leibniz, G. W. (1714/1720). The Principles of Philosophy known as Monadology (transl. by Jonathan Bennett, 2007). = MON <http://www.earlymoderntexts.com/authors/leibniz>
- Leibniz Lexicon. (1988). A dual concordance to Leibniz' Philosophische Schriften. (hrsg. von R. Finster, G. Hunter et al.). Hildesheim: Olm.
- Leibniz, G. W. (1890). Philosophical Works of Leibniz (translated by G. M. Duncan). New Haven: Tuttle.
<https://archive.org/details/philosophicalwor00leibuoft>
- Leibniz, G. W. (1998). Philosophical texts (transl. by R. Francks and R. S. Woolhouse. With introduction and notes by R. S. Woolhouse. Oxford: Oxford University Press.
- Leibniz-Ausgaben: Leibnizarchiv http://www.gwlb.de/Leibniz/Leibnizarchiv/Literatur_zu_Leibniz/, Deutsche Nationalbibliothek http://www.dnb.de/DE/Home/home_node.html
- Leinkauf, Th. (1996). Leibniz. München: Diederichs.
- Liske, M.-T. (2000). Gottfried Wilhelm Leibniz. München: Beck.
- Locke, J. (1690/1959). An essay on human understanding. (ed. C. A. Fraser). New York: Dover.
- Loemker, L. E. (1956/1969). Introduction to Philosophical papers and letters: A selection. Gottfried W. Leibniz (transl. and ed., by Leroy E. Loemker). Dordrecht: Riedel (2nd ed. 1969).
- Luccio, R. (2013). Psychologia – the birth of a new scientific context. Review of Psychology, 20, 5-14.
- Lüdtke, F. (1911). Kritische Geschichte der Apperzeptionsbegriffe. Zeitschrift für Philosophie und philosophische Kritik, 141, 41-135.

- Mach, E. (1886/1900). Die Analyse der Empfindungen und das Verhältnis des Physischen zum Psychischen. (2. vermehrte Aufl.). Jena: Fischer.
- Metz, W.: Vernunft; Verstand V. HWPh, Vol. 11, pp. 809-820.
- Muck, O.: Parallelismus I. HWPh, Vol. 7, pp. 96-99.
- Nef, W. (1923). Die Philosophie Wilhelm Wundts. Leipzig: Meiner.
- Petersen, P. (1925). Wilhelm Wundt und seine Zeit. Stuttgart: Frommanns Verlag.
- Platner, E. (1776). Philosophische Aphorismen. Leipzig: Schwickert.
- Pongratz, L. J. (1967). Problemgeschichte der Psychologie. Bern: Francke. (2. Aufl. 1984).
- Poser, H.: Monade. HWPh, Vol. 6, p. 117-121.
- Poser, H. (2005). Gottfried Wilhelm Leibniz zur Einführung. Hamburg: Junius.
- Poser, H. (2009). Leibniz' Theorie der Perzeptionen heute. In: Leibniz neu denken. In: Leibniz neu denken (Hrsg. v. E. Barke, R. Wernstedt & H. Breger. (Studia Leibnitiana Sonderheft 38). (Seite 15-35). Stuttgart: Steiner.
- Poser, H. (2016). Leibniz' Philosophie: Über die Einheit von Metaphysik und Wissenschaft. Hamburg: Meiner.
- Rappard, H. von (2004). Wundt as an activity/process theorist. An event in the history of psychological thinking. In: A. C. Brock, J. Louw & van Hoorn, W. (Eds.). Rediscovering the history of psychology. Essays inspired by the work of Kurt Danziger (pp. 141-160). New York: Kluwer Academic.
- Rensch, B.: Evolutionstheorie. HWPh, Vol. 2, pp. 836-838.
- Ritter, J., Gründer, K. & Gabriel, G. (1971-2007). Historisches Wörterbuch der Philosophie (13 Bände). Völlig neubearbeitete Ausgabe des Wörterbuchs der Philosophischen Begriffe von Rudolf Eisler. Basel: Schwabe, und Darmstadt: Wissenschaftliche Buchgesellschaft.
- Scheerer, E.: Psychologie. HWPh, Vol. 7, pp. 1599-1653.
- Scheerer, E.: Seele, HWPh, Vol. 9, pp. 52-89.
- Schönpflug, W. (2013). Geschichte und Systematik der Psychologie (3. Auflage). Weinheim: Beltz.
- Schrader, W. H.: Selbst II. HWPh, Vol. 9, pp. 293-395.
- Schwaiger, G. (1918). Besprechung: Wundt, Wilhelm. Leibniz. Zu seinem zweihundertjährigen Todestag. 1917. Kant-Studien, 22, 155-162.
- Sichler, A. (1914). Zur Verteidigung der Wundtschen Psychologie. (Eine Metakritik). Archiv für systematische Philosophie, 20, 19-167.
- Spaemann, R.: Freiheit IV. HWPh, Vol. 2, pp. 1088-1098.
- Stieler, G. (1925). Die Ideenlehre des Leibniz. Beiträge zur Philosophie des Deutschen Idealismus 3 (4), 13-22.
- Stieler, G. (1950). Gottfried Wilhelm Leibniz: ein Leben der Wissenschaft und Größe. Paderborn: Schöningh.
- Tetens, J. N. (1777). Philosophische Versuche über die menschliche Natur und ihre Entwicklung. (2 Bände). Leipzig: Weidmann.
- Überweg, F. (1924). Grundriss der Geschichte der Philosophie der Neuzeit bis zum Ende des 18. Jahrhunderts. (12. Aufl., bearb. u. hrsg. von M. Frischeisen-Köhler & W. Moog). Berlin: Mittler.
- Ungerer, G. A. (2016). Forschungen zur Biographie Wilhelm Wundts und zur Regionalgeschichte. Gesammelte Aufsätze 1978-1997. Ein Logbuch. Ubstadt-Weiher: Verlag Regionalkultur.
- Ungerer, G. A. & Bringmann W. G. (1997). *Psichiologia, ψυχολογία, Psychology*. In W. G. Bringmann, H. E. Lück, R. Miller & Ch. E. Early (Eds.). A pictorial history of psychology (pp.13-18). Chicago: Quintessence Press.
- Verhave, T. (1967). Contributions to the history of psychology: III. G. W. Leibniz (1646-1716). On the Association of Ideas and Learning. Psychological Report, 20, 11-116.
- Vidal, F. (2011). The Sciences of the Soul: The Early Modern Origins of Psychology. Chicago: Chicago University Press.
- Walach, H. (2013). Psychologie. Wissenschaftstheorie, philosophische Grundlagen und Geschichte (3. Aufl.). Stuttgart: Kohlhammer.
- Wegener, M. (2005). Das psychophysische Unbewusste. Gustav Theodor Fechner und der Mond. Psychoanalytische Perspektiven 23 (2), 261-282.
- Weyand, K.: Entwicklung I (allg.). HWPh, Vol. 2, pp. 550-557.
- Wontorra, H. M. (2009). Frühe apparative Psychologie. Leipzig: Der Andere Verlag.
- Wirtz, A. (Hrsg.). (2013). Dorsch Lexikon der Psychologie. Bern: Huber.

- Wolff, Chr. (1738/1972), *Psychologia rationalis*. Gesammelte Werke (II. Abt. Band 6). Hildesheim: Olms.
- Wundt, W. (1862). Beiträge zur Theorie der Sinneswahrnehmung. Leipzig: Winter.
- Wundt, W. (1863). Vorlesungen über die Menschen- und Thierseele. Hamburg: Voss. (6. Aufl. 1919).
- Wundt, W. (1874). Grundzüge der physiologischen Psychologie. Leipzig: Engelmann. (5. Aufl. 1908-1911, Band I-III; 7. Aufl., 1923).
- Wundt, W. (1876). Über den Einfluss der Philosophie auf die Einzelwissenschaften. Akademische Antrittsrede gehalten zu Leipzig am 20. November 1875. Leipzig: Engelmann.
- Wundt, W. (1879). Der Spiritismus, eine sogenannte wissenschaftliche Frage: Offener Brief an Herrn Prof. Ulrici in Halle. Leipzig: Engelmann.
- Wundt, W. (1886). Ethik. Eine Untersuchung der Tatsachen und Gesetze des sittlichen Lebens. Stuttgart: Enke. (4. Aufl., 1912, Band I-III).
- Wundt, W. (1889). System der Philosophie. Leipzig: Engelmann. (4. Aufl. 1919, Band I-II).
- Wundt, W. (1889b/2009). Über den Zusammenhang der Philosophie mit der Zeitgeschichte. Eine Centenarabhandlung. Rede des antretenden Rectors Dr. phil., jur. et med. Wilhelm Wundt. In F. Häuser (Hrsg.). Die Leipziger Rektoratsreden 1871-1933. Band I: Die Jahre 1871-1905 (pp. 479-498). Berlin: de Gruyter.
- Wundt, W. (1892a). Was soll uns Kant nicht sein? Philosophische Studien 7, 1-49.
- Wundt, W. (1892b). Hypnotismus und Suggestion. Leipzig: Engelmann
- Wundt, W. (1894). Über psychische Kausalität und das Prinzip des psychophysischen Parallelismus. Philosophische Studien, 10, 1-124.
- Wundt, W. (1896). Über die Definition der Psychologie. Philosophische Studien, 12, 9-66.
- Wundt, W. (1896-1898). Über naiven und kritischen Realismus. Philosophische Studien, 12, I, 307-408; II, 13, 1-105 und III, 323-433.
- Wundt, W. (1897). System der Philosophie (2. Aufl.). Leipzig: Engelmann.
- Wundt, W. (1900-1920). Völkerpsychologie. Eine Untersuchung der Entwicklungsgesetze von Sprache, Mythos und Sitte. Band I-X. Leipzig: Engelmann.
- Wundt, W. (1904). Über empirische und metaphysische Psychologie. Archiv für die gesamte Psychologie, 2, 333-361.
- Wundt, W. (1906). Vorlesungen über die Menschen- und Thierseele Band I-II). Hamburg: Voss. (6. Aufl. 1919).
- Wundt, W. (1908-1911). Grundzüge der physiologischen Psychologie (Band I-III, 6. Aufl.). Leipzig: Engelmann.
- Wundt, W. (1912a). Ethik. Eine Untersuchung der Tatsachen und Gesetze des sittlichen Lebens (4. Aufl., 1912, Band I-III). Stuttgart: Enke. (1. Aufl. 1886).
- Wundt, W. (1912b). Elemente der Völkerpsychologie. Grundlinien einer psychologischen Entwicklungsgeschichte der Menschheit. Leipzig: Kröner.
- Wundt, W. (1913). Die Psychologie im Kampf ums Dasein. Leipzig: Kröner.
- Wundt, W. (1917). Leibniz zu seinem zweihundertjährigen Todestag. 14. November 1916. Leipzig: Kröner.
- Wundt, W. (1918). Brief an Hans Vaihinger. Wundt-Nachlass UA Tübingen, Brief Nr. 576. Wundt Estate, letter dated 1. 8.1918, <http://kalliope-verbund.info/DE-611-HS-2220545>).
- Wundt, W. (1919). System der Philosophie (4. Aufl., Band I-II). Leipzig: Engelmann.
- Wundt, W. (1919-1921). Logik. Eine Untersuchung der Prinzipien der Erkenntnis und der Methoden Wissenschaftlicher Forschung (4. Aufl.). Stuttgart: Ferdinand Enke. Band I. Allgemeine Logik und Erkenntnistheorie. 1919; Band II. Logik der exakten Wissenschaften. 1920; Band III. Logik der Geisteswissenschaften. 1921. (1. Aufl. 1880-1883).
- Wundt, W. (1920a). Erlebtes und Erkanntes. Stuttgart: Kröner.
- Wundt, W. (1920b). Grundriss der Psychologie (14. Aufl.). Stuttgart: Kröner.
- Wundt, W. (1920c). Brief an den Schweizer Psychologen Albert Sichler (22. 6. 1920) <http://kalliope-verbund.info/DE-611-HS-2220811>
- Ziehen, Th. (1890). Leitfaden der physiologischen Psychologie in 15 Vorlesungen. Jena: Fischer. (1. Aufl. 1893).
- Ziehen, Th. (1896). Rezension: Wundts "Über die psychische Kausalität und das Prinzip des psychophysischen Parallelismus." Zeitschrift für Psychologie und Physiologie der Sinnesorgane, 8, 453-457.

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