

Scientific Psychology in the 18th Century: A Historical Rediscovery

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Abstract

As early as 1783, the almost forgotten philosopher, metaphysicist, and psychologist Ferdinand Ueberwasser (1752–1812) designated himself “*Professor für empirische Psychologie und Logik*” (professor of empirical psychology and logic) at the University of Münster, Germany. His position was initiated and supported by the minister and educational reformer Franz von Fürstenberg (1729–1810), who considered psychology a core scientific discipline that should be taught at each school and university. At the end of the 18th century, then, psychology seems to have been on the verge of becoming an independent academic discipline, about 100 years before Wilhelm Wundt founded the discipline’s first official laboratory. It seems surprising that Ueberwasser’s writings—including a seminal textbook on empirical psychology—have been almost entirely overlooked in most historical accounts. We focus on this important founding moment of psychological science and on the circumstances that eventually brought this seminal development to a halt.

Keywords

history of psychology, 18th century, psychology, philosophy

The advent of psychology is traditionally considered to have occurred in the late 19th century, with Wilhelm Wundt founding the discipline’s first official laboratory in 1879 (Boring, 1929). Well-known predecessors paved the way for this groundbreaking development. These predecessors included such distinguished figures as the psychophysicists Ernst Heinrich Weber (1795–1878) and Gustav Theodor Fechner (1801–1887), who pioneered the application of mathematical tools in the study of the human mind. Similarly, discoveries by the neuroanatomists Paul Broca (1824–1880) and Carl Wernicke (1848–1905) laid the foundation for a physiological approach to understanding the human mind, and integrative work from philosophers such as Johann Friedrich Herbart (1776–1841) and Rudolf Hermann Lotze (1817–1881) provided theoretical frameworks that facilitated a structured understanding of psychological phenomena.

The writings of these scientists appeared from the beginning of the 19th century onward (e.g., Herbart, 1824/1825); signs that psychology had been established as an independent field of study do not seem to have surfaced prior to this date. A recent rediscovery, however, suggests that this notion is incorrect: As early as 1783, the almost forgotten philosopher, metaphysicist, and psychologist Ferdinand

Ueberwasser (1752–1812) designated himself “*Professor für empirische Psychologie und Logik*”—professor of empirical psychology and logic—at the University of Münster, Germany, as documented in corresponding archival data (see Fig. 1; LAV NRW W, 2014a, 2014b).¹ This early conception of psychology as an independent academic discipline seems unparalleled, yet Ueberwasser did not leave a visible trace in the history of the discipline and, in fact, seems to have been overlooked, even by thorough historical accounts (e.g., Boring, 1929, 1953). The sole exception to this state of affairs seems to be Wolfgang Prinz (2014; cf. Prinz, De Maeght, & Knuf, 2005), who, in recent writings, specifically highlighted Ueberwasser’s forgotten pioneering work on action control and imitation (for Ueberwasser’s reception in other disciplines, see Bierbrodt, 2000). In this article, we aim to shed some light on this forgotten pioneer of psychological science and his 18th century conception of the study of the mind.

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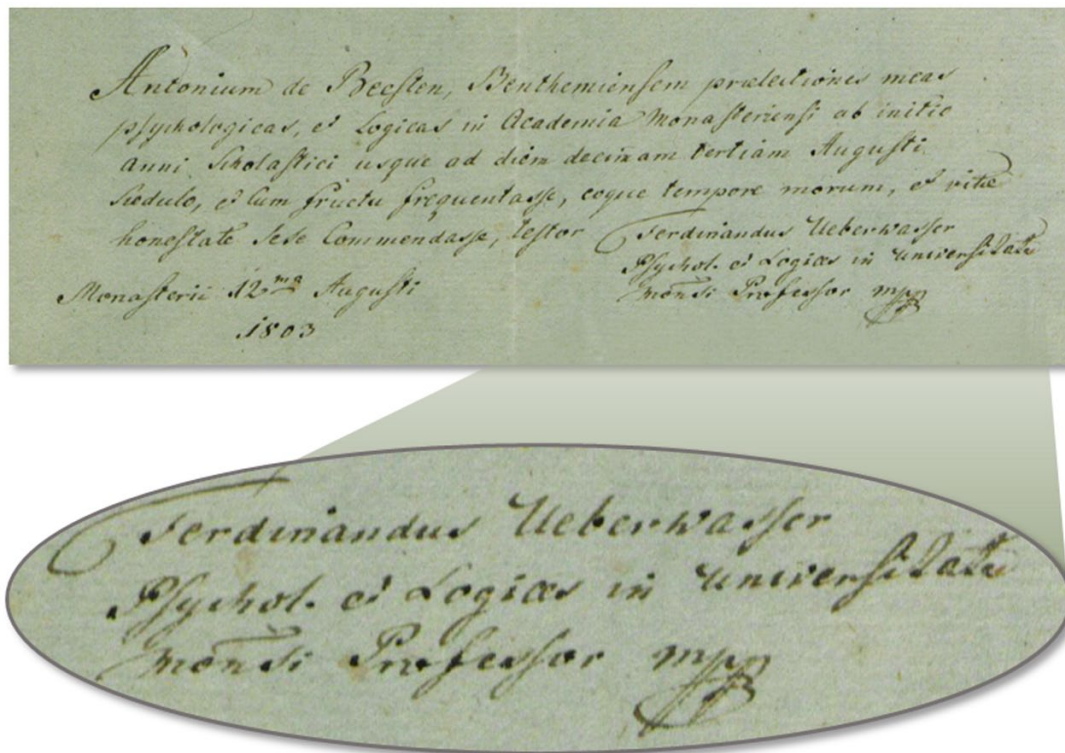


Fig. 1. Confirmation of attendance issued by Ferdinand Ueberwasser in 1803. His signature clearly identifies him as a professor of psychology and logic ("Psychol. & Logica"). Courtesy of the Landesarchiv Nordrhein-Westfalen, Münster, Germany (LAV NRW W, 2014a; reproduced with permission).

Biographical Notes

Ferdinand Bernard Ueberwasser was born on August 13, 1752, in Meppen, Germany (Bahlmann, 1895). At the age of 18 years, he became a Jesuit novice, apparently intending to pursue a clerical career (Marx, 1829). At this time, however, the Society of Jesus had already fallen into discredit and had been banned in different nations across Europe (Pollen, 1912). When the Jesuit congregation became officially suppressed by papal decree in 1773, Ueberwasser took a position as teacher at the former Jesuit secondary school *Gymnasium Nepomucenum* (then under secular authority) in the German city of Coesfeld and, from 1776 onward, at the convent school *Gymnasium Paulinum* in Münster (Bahlmann, 1895; Marx, 1829; Pieper, 1902). The convent school—also having a Jesuit history—developed close ties with the newly founded University of Münster, where Ueberwasser was appointed professor in 1783 in the Faculty of Philosophy.²

The university had been founded 10 years prior to this date by the Catholic statesman and minister Franz Friedrich von Fürstenberg (1729–1810; cf. Esser, 1842; Pieper, 1902). Officially constituted in 1780, the university was part of Fürstenberg's programmatic reform of the educational system in the Prince-Bishopric of Münster. This

reform introduced a seminal emphasis on mathematics and scientific education—an emphasis that also included the discipline of psychology, which Fürstenberg even defined as one of three primary sciences (in addition to mathematics and physics; Fürstenberg, 1776/1960; see Fig. 2).³ In the course of this reform, Ueberwasser was asked to prepare a new textbook on psychology (Carus, 1808) for use at the university and also at the military academy in Münster. This seminal textbook was titled *Anweisungen zum regelmäßigen Studium der Empirischen Psychologie für die Candidaten der Philosophie zu Münster* (Instructions for the regular study of empirical psychology for candidates of philosophy at the University of Münster; hereafter referred to as *Instructions*; Ueberwasser, 1787). It provided a structured psychological approach to phenomena such as human memory, empathy, and placebo effects; an exhaustive overview of psychological theorizing at the turn of the 19th century; and a detailed set of methods for investigating psychological processes.

From this point onward, Ueberwasser also officially denominated himself a professor of empirical psychology and logic (LAV NRW W, 2014b). He published a second edition of his *Instructions* in 1794 (cf. Hamberger & Meusel, 1800) and, 6 years later, a book on human motivation

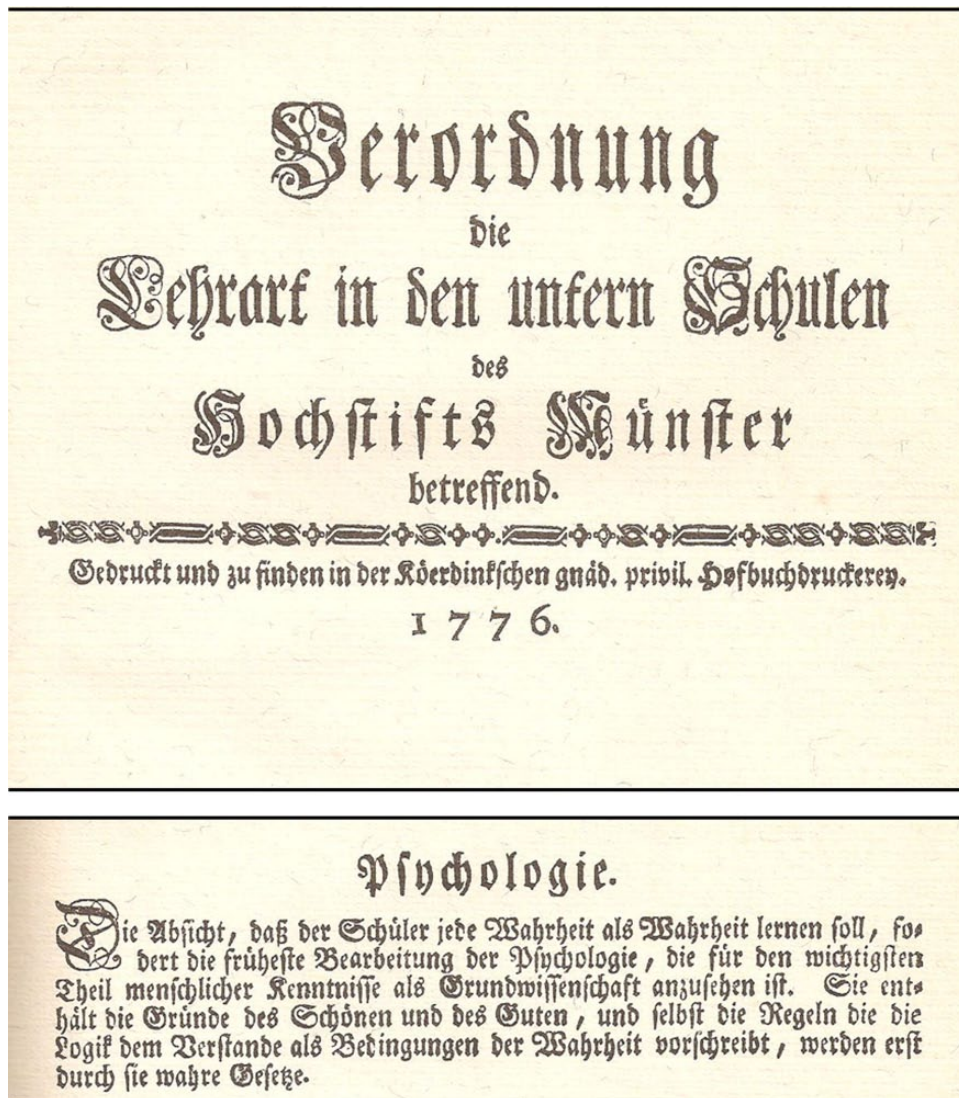


Fig. 2. Educational regulations issued by statesman and reformer Franz Friedrich von Fürstenberg (upper panel). Not only did these regulations introduce psychology lessons in the curriculum of all types of schools but they also defined psychology as a “core discipline” (lower panel), together with mathematics and physics: “The intent that the pupil should learn every truth as a truth calls for psychology to be studied at the earliest possible stage, as it is to be regarded as a basic science for the most important aspects of human knowledge. It [psychology] contains the roots of all beauty and all good, and even the very rules that logic dictates the intellect as the preconditions of understanding the truth are only through [psychology] turned into true laws.”

(*Ueber das Begehrungsvermögen*; Ueberwasser, 1800). In addition to serving as a professor of empirical psychology, he took on the professorship of moral philosophy at Münster in 1803 and continued to hold both positions until his death on January 15, 1812.

An 18th Century Conception of Empirical Psychology

Ueberwasser’s (1787) *Instructions* presents an extensive, structured approach to empirical psychology. It was

initially to be released in three volumes. Although the second and third volumes were never finalized (Esser, 1832), the first volume (see Fig. 3) documented a seminal conception of psychology as an empirical science. In the following sections, we spotlight several aspects of its content.

Instructions (Ueberwasser, 1787) begins with a general introduction to psychology as an independent field of study, accompanied by detailed methodological considerations. These considerations prepare readers for five chapters on basic cognitive processes: (a) sensation and

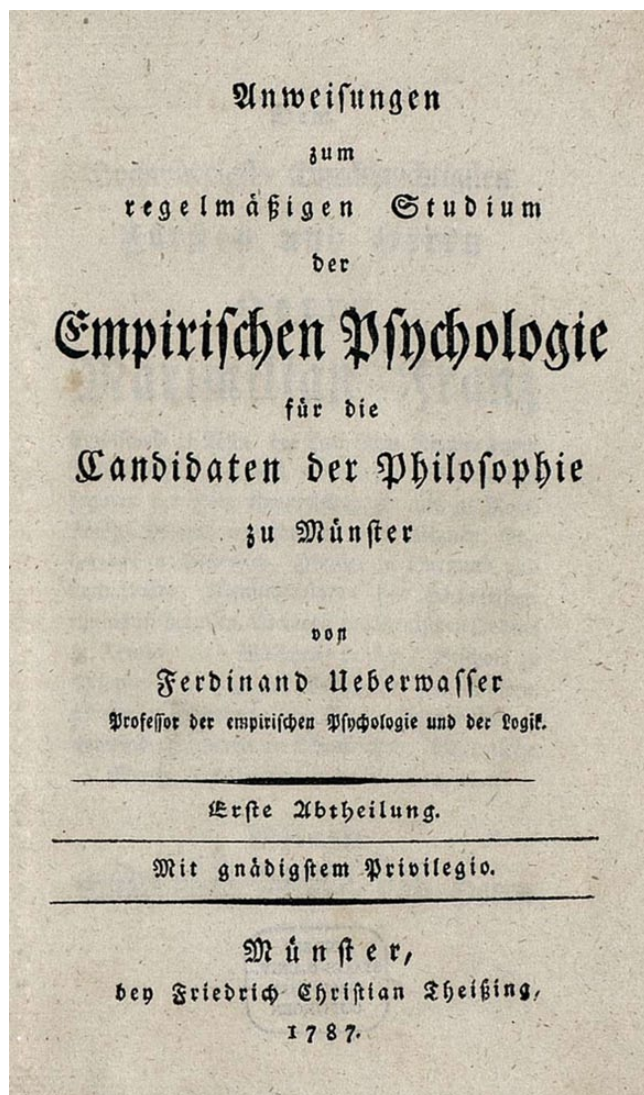


Fig. 3. Cover page of Ferdinand Ueberwasser's (1787) *Anweisungen zum regelmäßigen Studium der Empirischen Psychologie für die Candidaten der Philosophie zu Münster* (Instructions for the regular study of empirical psychology for candidates of philosophy at the University of Münster). This first volume presented a seminal, comprehensive treatment of psychological phenomena, paired with a distinct methodological approach that drew on structured introspection, physiology, and logical inference.

perception, (b) reviving sensations (i.e., imagery), (c) remembering, (d) creative potential, and (e) empathy. (The original chapter titles were, respectively, "Aeußeres Empfindungsvermögen," "Wiedererweckung der Empfindungen," "Erinnerungsvermögen," "Dichtungsvermögen," and "Mitgefühl.") Chapters on higher cognitive functions, such as judgment and decision making, concept formation, and reasoning, were planned for the second volume to complement Ueberwasser's account on what would now be termed *cold cognitive processes* (in his terms, *Erkenntniß*). In addition to identifying cold

cognition as one hallmark of the human mind, Ueberwasser, in describing what constituted psychology, was also concerned with what would today be termed *hot cognition* as a second hallmark (i.e., motivation and emotion, or *Begehrungsvermögen*). These latter subjects were allotted to the third volume, and a synopsis of this third volume eventually appeared as the above-mentioned independent book on the psychology of motivation (Ueberwasser, 1800).

In the following sections, we present several descriptions of the content of the *Instructions* (Ueberwasser, 1787).⁴ These descriptions focus on methodological points that describe how psychology as a science was conceived by Ueberwasser, and we further present excerpts from the *Instructions* that serve as an example of his work on a specific topic.

Scientific psychology anno 1787

Several authors of the mid- and late 18th century presented comprehensive accounts of what they termed *empirical psychology* (e.g., Schmid, 1791; Wolff, 1732; for historical perspectives, see John, 2002; Richards, 1980; Vidal, 1993, 2000). Empirical psychology, however, indicated that psychological theories should be based on introspection; that is, contrary to current definitions and usage, *introspection* was often used synonymously with *empirical approaches*. Ueberwasser adopted the introspective meaning of the term *empirical*, but he contrasted in his work a *merely empirical* and a *scientific psychology*.⁵

Ueberwasser defined *scientific psychology* as the structured approach to mental phenomena. It is important to note that Ueberwasser's conception of scientific psychology was set apart by its specific methodological approach, and he dedicated a considerable share of his introductory chapters to precisely these methods. Although Ueberwasser drew mainly on introspective data, he conceived a distinct systematic approach that cannot be found in other psychological writings of this time (e.g., Eschenmayer, 1817; Mauchart, 1793; Meier, 1757; Schmid, 1791). A general assumption of his approach was that sensation and thought should not be studied per se, but, rather, the scientific psychologist should aim to study changes in sensation or thought. These changes are to be evoked deliberately in controlled settings. Furthermore, by comparing different situations, the scientific psychologist should delineate the conditions that are necessary and sufficient for particular changes to occur. Each of these observations has to be repeated a number of times, and the results of each individual observation are to be recorded in writing and possibly also quantified by using structured tables to map the occurrence of each change for different conditions (Ueberwasser, 1787; see also Fürstenberg, 1776/1960). Replication of introspective observations within and between

individuals was defined as the cornerstone for establishing laws of psychological functioning. Describing these laws was seen as a prerequisite for an informed theoretical understanding of psychological phenomena.

In addition to his method of structured introspection, Ueberwasser called for two further methods to be used by scientific psychologists: (a) using physiological mechanisms to ground psychological laws and (b) relying on rules of inference, as derived from philosophical logic. Regarding the latter method, he specifically highlighted three methods of inference: by induction, by analogy, and by reduction to general laws. He emphasized the superiority of a scientific over a merely empirical psychology, which studies conditions of the mind without finding or grounding the work in generally applicable axioms.

Ueberwasser thus urged his students to choose a scientific approach over a merely empirical or rational approach to psychology; that is, he advocated a structured approach to psychological observations, in concert with physiological knowledge and rational deduction, as the defining feature of psychological science. Moreover, he also favored a similarly structured approach to teaching psychology, as detailed in the next section.

Teaching psychology

Ueberwasser's (1787) *Instructions* comes with a peculiar feature concerning the book's organization: Rather than presenting its content as a series of fixed results regarding the phenomenon in question, Ueberwasser began each chapter with a description of a phenomenological experience (German *Erfahrung*, abbreviated *Erfabr.*), intended for the reader to recreate precisely these experiences. The experiences either are then explained directly (*Erklärung*) or give rise to several conclusions (*Folgerung*) backed up by annotations (*Anmerkungen*). Finally, several paragraphs contain follow-up exercises (*Aufgaben*) to consolidate the material.

This didactic structure allowed his students to acquaint themselves autonomously with the content of the lectures. Indeed, Ueberwasser explicitly encouraged his students to work through each lecture's material before class and to use the following classroom time for in-depth discussions.⁶ This procedure was markedly different from the standard practice of his time, that is, giving lessons in the form of lectures, and Ueberwasser's method had a varied reception from his contemporaries (*Allgemeine Literatur-Zeitung*, 1788). Against this background, Ueberwasser's style of teaching appears surprisingly modern, with a structure similar to current methods in teaching and education, including such concepts as the flipped or inverted classroom. We present a detailed look at the mechanics of this teaching style in the next section.

Specific topic excerpts: Placebo effects

As stated above, the scope of Ueberwasser's (1787) *Instructions* can hardly be accommodated in its entirety within a single article. Rather, as an example of his work, we present Ueberwasser's descriptions of placebo and nocebo effects, topics that have been extensively studied, especially in recent decades (Büchel, Geuter, Sprenger, & Eippert, 2014; Schwarz, Pfister, & Büchel, in press). Although placebo effects were documented in early medical work (for historical accounts, see de Craen, Kaptchuk, Tijssen, & Kleijnen, 1999; Walach, 2011), Ueberwasser's detailed descriptions, together with his emphasis on the physiological aspects of this phenomenon, are astounding for his time. These excerpts are from the chapter "Reviving Sensations."⁷

Impact of imagination on the body

§. 162.

Exper.

If one vividly imagines the taste of a dish whose consumption has caused us sickness, then sometimes new occurrences of a similar sickness arise: There are examples where bread crumbs, taken in the shape of pills have, by means of vivid imagination and expectations, yielded the same effects as the medication itself...

§. 163.

Concl.

These and other observations lead to the general law of the impact of imagination on the body: especially those bodily changes that are caused by external and internal sensations are reinstigated by the awakened feelings of these sensations, although only more or less, and to a weaker degree.

§. 164.

First Annot.

If an image is awakened in the mind, then (as physiology teaches us) specific changes in the brain arise, corresponding to this image and its intensity; other images connected to the first one are roused, which then also have to accompany their own excitations in the brain, or spur them. Now, as the nerves originate in the brain and as they are the instruments of sensation and movement in the entire

body, it ensues that also other, more remote body parts can be affected by imagination. In particular, it ensues that noticeable excitations of the nerves in the brain are transmitted to the muscles, wherein these nerves terminate, and cause these muscles to move, which, in turn, cause similar changes in the bowel, in the stomach, in the heart, in the blood vessels, and in the tubes of the bodily fluids that originally were brought about by the impact of external accounts or the soul.⁸ These external sensations were coupled with [physiological] reactions, and these reactions are also roused. They tend to prompt, especially if they are roused with a noticeable degree of intensity, some spurious sensations, which then join with the vivid images and give them such an increase in intensity and completeness that it becomes hard to discern them from real, external sensations. This is why madmen, dreamers, drunkards, the enraged, and the very fearful are convinced that they sense that which is vividly present in their imagination. How additional bodily actions, whose images are not part of the chain of imaginations, can still be evoked in the state of vivid imagery, follows from what has already been said elsewhere about the impact of organic associations.

§. 165.

Second Annot.

The primary reason of the involuntary restorations of such bodily actions, which were caused voluntarily by the soul in the first place, lies in the additional [images] that are associated with the [first] images, or are included in them, and in the particular nature of these [secondary images] that are associated with the [first images], or included in them....

§. 166.

Third Annot.

From these impacts of the imagination on the body it becomes understandable that continuous vivid imaginations of bodily illnesses can bring about or aggrandize these exact illnesses, especially nervous illnesses, and especially in those individuals who have already been subject to these illnesses, or in whose body a predisposition for these illnesses is present. So many curious examples of these incidences are mentioned in the physicians' writings: One may simply recall the known sad tale of the orphans of Harlem, who were so terribly afflicted by epilepsy, until Börhaave dispelled the imagination with another,

stronger one. Furthermore, that vivid imaginations, confident expectations of recovery or relief, and therefore firm trust in the physician, or in the medication alone, even if the medication is without effect by itself, can sometimes lead to real relief, or even recovery, for the invalid. This is also why the cures of charlatans are sometimes of so fortunate a success with the common folks who engage with their imagination without restraint if only it is well excited.

Reception

Ueberwasser's (1787) *Instructions* constitutes a noteworthy conception of psychological science by defining a stringent set of methods underlying scientific psychology, by describing a broad range of phenomena analyzed by these very methods, and by embedding the findings in an innovative didactic approach. In addition to these academic achievements, the discipline of psychology was simultaneously strengthened politically by statesman von Fürstenberg, who also supported the discipline throughout his years as a minister. The professorship even continued to be designated the "Professor of Logic and Psychology" under Ueberwasser's successor, Georg Laymann (Pieper, 1902). At the turn of the 19th century, it thus seemed as though psychology had established a first foothold in the academic system as an independent discipline.

Still, both Ueberwasser's and von Fürstenberg's contributions to the emancipation of psychology quickly fell into oblivion, not finding a place in most historical accounts of psychological science (e.g., Boring, 1929, 1953), including recent work concerned specifically with psychology in the 18th century (Brauns, 2002; John, 2001; Vidal, 2000; but see Carus, 1808; Jahnke, 2007). This fate was likely caused by political upheavals in Europe at the outset of the 19th century, with Münster being annexed by French troops during the Napoleonic Wars and finally being established as the capital of the Prussian province of Westphalia in 1815 (Lahrkamp, 1993). With this status, however, came changes regarding the political and educational systems. Von Fürstenberg, who still held a decisively Catholic orientation regarding his educational agenda, was soon dismissed by the Protestant Prussian government (Wilmans, 1875). His successor, the Protestant Freiherr von Stein (1757–1831), immediately began to restructure the University of Münster (in 1802) and formally listed Ueberwasser as a professor of philosophy, although von Stein does not seem to have objected to the designation of professor of psychology (Wilmans, 1875).

The most critical event for Ueberwasser's and von Fürstenberg's legacies was probably the discontinuation of the University of Münster in 1818 (Elstrodt & Schmitz,

2013; Pieper, 1902). When the University of Münster was shut down by the Prussian government, Ueberwasser's successor, Laymann, assumed instead the position of professor of moral theology at the theological academy in Münster and does not seem to have pursued any further psychological work. Moreover, the newly founded University of Bonn, the de facto successor to the University of Münster, did not initiate a seminar on psychology until 1898. These changes rendered it difficult for early followers of Ueberwasser to further develop his scientific concept of psychology (Esser, 1832). Some even started to bemoan his fading legacy in their own writings:

Please forgive me for citing many longer parts from Ueberwasser's writing . . . this is because I hold this book so dear, because it is becoming so rare, and I would so like to keep these treasurable parts from becoming forgotten. (Biunde, 1832, p. 301)⁹

Nevertheless, the writings of Ueberwasser, as an early foundation of the discipline, have survived in libraries and bookstores to the present day and clearly deserve a place in the annals of psychology.

Author Contributions

Both authors verified the historical accuracy of the reported findings, and they drafted the article in cooperation.

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Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

Supplemental Material

Additional supporting information may be found at <http://pps.sagepub.com/content/by/supplemental-data>

Notes

1. We do not intend to claim that the denomination of a professor of psychology represents as fundamental a sign of the emancipation of psychology as Wundt's founding of an official laboratory dedicated to psychological research. Indeed, denominations of this kind also appeared prior to 1879 (with Wundt himself assuming a position as a professor of anthropology and medical psychology in 1864; cf. Meischner & Eschler,

1979). Still, the explicit use of the title and the status that was apparently ascribed to psychology as a discipline seem to make Ueberwasser's professorship an important but overlooked milestone in the history of the discipline.

2. Unlike current practice, the Faculty of Philosophy included three disciplines, represented by one professor each: mathematics, physics, and philosophy (i.e., logic and metaphysics; Esser, 1842; Pieper, 1902). Ueberwasser's initial discipline was philosophy.

3. Similar statements concerning psychology's designated role as a hub science were presented by different 18th century authors (e.g., Etienne Bonnot Condillac, Gabriel Mingard, or Jean Trembley; for a detailed overview, see Fuchs & Evans, 2012; Vidal, 1993, 2000, 2011). None of these authors, however, promoted developments such as the denomination of a professorship for psychology or the implementation of psychology as an independent subject in academic curricula.

4. Although this textbook, along with some of Ueberwasser's other works, is still readily available, it has not been translated into English, making it difficult for the book to reach the international psychological community.

5. A similar distinction was put forward by Christian Wolff (1732) and Georg Friedrich Meier (1757), among others, who distinguished an *empirical psychology* and a *rational psychology*; Ueberwasser, however, presented a more refined and distinct framework by explicitly characterizing the methods that live up to scientific standards. Of course, scientific psychology would still be empirical, but it differs from "merely empirical" by employing exactly these methods.

6. In some semesters, Ueberwasser seems to have given lectures "daily, with the exception of Thursdays, at 8 a.m." (Universität Münster, 1807, p. 8; translated by the authors).

7. These excerpts are from Ueberwasser (1787, pp. 141–146) and translated by the authors; see the Supplemental Material for the original German wording.

8. When translating the German word *Seele*, we opted for the more spiritual term of *soul* instead of the more neutral term of *mind* for two reasons. First, English essays on psychological topics tended to use the term *soul* throughout the 18th century (see Vidal, 1993, for a thorough analysis of such texts). Second, German authors also tended to use the word *Seele* with a spiritual connotation. Given that Ueberwasser had initially pursued a clerical career, it seemed to us that *soul* captured his likely intended meaning of the word more accurately than *mind* did.

9. In this case, Biunde referred to Ueberwasser's (1800) second book.

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