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Academic disciplines and the history of psychology. A case study from Finland

Introduction

Criticism of the traditional histories of academic disciplines has been voiced every now and then in the history of psychology. It has been said, for example, that histories of psychology have had a tendency to limit their source material to the writings of psychologists and to deal with them selectively and even in a biased manner. Histories of psychology written by psychologists have been interpreted as attempts by the authors to legitimate their own views of the subject by appealing to great men in the past. Such treatments have also separated the discipline of psychology from its social background and from other branches of learning (Ash, 1983; Geuter, 1983; Nilsson, 1984; Nilsson, 1979, preface, Smith, 1988).

In the following pages I shall go beyond traditional "textbook histories", by describing some ideas connecting psychology with physiology, the science of education and psychology/philosophy within a restricted area and period, namely in Finland in the late nineteenth century.¹

While the results of a case study of a small country with only a few learned men certainly cannot be generalized to apply to the international development of psychology, this geographical limitation has its advantage. It is possible, at least in principle, to scan the entire works of the major

scientists in each of the above disciplines and pick out the points of importance for psychology in the whole context of the time.

During the late nineteenth century in Finland psychology was institutionally a part of philosophy and foreign influences (especially German) strongly affected this young tradition.²

There was only one university (in Helsinki), which had only one professorship in philosophy and a few scholars of the subject within the humanities. Thus, the ideas and opinions of prominent individual scholars had a profound influence on the whole image of psychology in the country, as noted by Takala and Korkeakangas (1981). The most notable scholar in the history of Finnish psychology was Thiodolf Rein (1838—1919), professor of philosophy from 1869 to 1900, whose ideas were based initially on Hegelian idealism and from the 1870's onwards on that of Hermann Lotze.

The situation in physiology and education was similar. They too were disciplines with only one professorship (on the history of Finnish physiology, see von Bonsdorff, 1975; and on science of education, Iisalo, 1979).

The arrival of Wundtian psychology

The ideas of Wilhelm Wundt first came to Finland as

early as the 1860's. In the middle of that decade, Wilhelm Bolin (1835—1924), acting professor of philosophy, used Wundt's *Vorlesungen über die Menschen- und Thierseele* as one source for his lectures in psychology. In this work Wundt dealt with many of the most essential problems in experimental psychology (Schultz, 1987:61). However we know very little about the content of Bolin's lectures beyond the few facts to be found in his letters to Ludwig Feuerbach.³

Bolin's period of ascendancy in the history of psychology and philosophy in any case lasted only up until the end of the decade, when Th. Rein was appointed to the professorship. One reason for the rejection of Bolin was his Feuerbachian materialism (Manninen, 1987:157—179).

The physiologist Konrad Hällstén (1835—1919) who had been in Germany a few times between 1869 and 1879 as a student of Hermann von Helmholtz and Wundt, also brought Wundtian ideas to Finland at an early stage. He was a dominant figure in Finnish physiology until his retirement at the end of the century and occupied a professorship of physiology and anatomy from 1871 onwards. During his professorship he founded a laboratory for physiological demonstrations in Helsinki (von Bonsdorff, 1975:24—35).

In his dissertation, *Studier om kraftförvandling i vitala processer* (Studies on the alterations of energy in vital processes) (1896:8—9), Hällstén referred to the "physiologist Wilhelm Wundt", in whose opinion mental actions were one kind of motion of energy in the central nervous system. Although Hällstén did not write in great detail about Wundtian physiology or psychology, the scientific view of mental processes can be said to have had reached Finland.

Hällstén also made reference to Wundt and his laboratory psychology in the later works. In another dissertation produced four years later, *Om protoplasmarörelser och funktionstillstånd i nervsystemet* (On the movements of cytoplasm and state of function in the nervous system) (1873:46—49), he discussed the mutual relations between nervous activity, sensory perceptions, sensations and higher mental processes, referring to Wundt's works and also to those of the physiologists and psychophysicists Johannes Müller, Hermann von Helmholtz, Gustav Fechner and Ernst Weber. No Finnish scientist had written before about any of them. Thus both physiological psychology and psychophysics entered Finnish scientific literature for the first time under the auspices of physiology.

In the 1870's Rein's philosophical thinking moved away from Hegelian idealism towards the system of

Hermann Lotze (Rein, 1918: 284; Grotenfelt, 1922). Lotze's aim was to harmonize the results of the modern empirical science with metaphysical idealism (Hirschberger, 1959:535—538; Schnädelbach, 1983:206—218). This intention can also be seen in Rein's psychological ideas. His first work in this discipline — and at the same time the first Finnish psychological work for more than thirty years — was a textbook of about five hundred pages entitled *Försök till en framställning af psykologin eller vetenskapen om själen*, I (An attempt to elucidate psychology or the science of the soul (1876), referred to hereafter as *Psykologi*). The second part of the textbook appeared in 1891, and Rein also wrote shorter textbooks of psychology for both the university and the secondary school levels.⁴

In his works Rein mentioned Wundt and Fechner as exponents of empirical psychology whose research is useful and valuable — but only instrumentally. The true subject of psychology is mental experience, and knowledge about it can be gained only by introspection (in Brentano's rather than Wundtian terms)⁵. On the other hand, this knowledge can be complemented and explained by physiology and experimental psychology (Rein, 1876; 1884; 1891; 1896; see also Haapasalo, 1976: 13—14). Hence the scholar who was responsible for the highest level of teaching in psychology was clearly an exponent of the philosophical tradition of psychology. One might even say that he was an arm-chair scholar.

It would be incorrect to say that Rein made light of experimental psychology. However its position in his system becomes clear from the fact that he presented Wundtian experimental psychology to Finnish readers for the first time in 1910, by which time Wundt had lost his leading position and the structuralism of his most famous disciple, Edward Titchener was also in its last years (Rein, 1910, 4; Schultz, 1987, chapters 4—5).

German experimental psychology was made known in Finland by two of Rein's students, Hjalmar Neiglick (1860—89) and Arvi Grotenfelt (1863—1941), who did their dissertations in Leipzig in the late 1880's. Neiglick's career was short-lived as he died of typhus in 1889. In the same year Grotenfelt was elected Docent in psychology, but he did not continue in this discipline. Instead he turned to the philosophy of history and the history of philosophy. His interests in psychology were limited to teaching (Jääskeläinen, 1983; 1985; Luukanen, 1979). Grotenfelt was also interested in parapsychology, writing an article about it as early as in 1892. He also was the chairman of the Finnish Society of Psychical Research, founded in 1907 (Krohn, 1976; Gro-

tenfelt, 1892; 1926).⁶

Grotenfelt's dissertation, *Das Webersche Gesetz und die psychische Relativität* (1888), was a theoretical study of Weber's law and some conclusions derived from it, e.g. Fechner's law.⁷ Around the same time Grotenfelt also wrote an article about new developments in experimental psychology, referring to the ideas of Weber, Fechner, Wundt and Hermann Ebbinghaus.

Grotenfelt was sceptical vis-à-vis the advantages offered by scientific methods in psychology. He believed that they enable one to obtain useful results but have no point of contact with the most relevant facts of mental life. He also thought that psychophysics had failed to create firm quantitative laws on the mental aspect of man (Grotenfelt, 1886—87; 1888: 178—179, 181—183 et passim). In this opinion he came close to his teacher (and uncle) Th. Rein. In general it can be said that the philosophical tradition in Finland adopted ideas from German experimental psychology without altering its own fundamental views on the object of psychological research.

Besides Grotenfelt, the only other person who dealt profoundly with experimental psychology in Finland in the last century was Hjalmar Neiglick. In his article "Om exakta metoder i psykologin" (On exact methods in psychology) (1887), he took a less sceptical attitude than Grotenfelt, but he also believed that the laboratory cannot provide an adequate account of mental acts and their content. Thus he argued that German psychophysics would need to be complemented by the methods of French and English sociology.⁸ Hence Neiglick's psychological thought was somewhat similar to Wundt's "Völkerpsychologie", and he can also be seen as a forerunner of the Westermarckian sociology/social anthropology (on Wundt, see Schultz, 1987, chapter 4; and on Westermarck, Haavio-Mannila, 1975).

As we have seen, the new scientific discipline of psychology came to Finland first in the form of short references in the writings of an exponent of another discipline, the physiologist Konrad Hällstén. Later, in the second phase, philosophers/psychologists travelled to the center of this new science transmitting their information back to their homeland. Thus the essential point about Grotenfelt's and Neiglick's articles is that they presented quite a good account of German laboratory psychology.

Neiglick was evidently the first Finnish psychologist to carry out experimental research (Jääskeläinen, 1983; 1985; Haapasalo, 1976: 14—15), based on his work in Wundt's laboratory in 1885—86, dealing with the validity of Fechner's law for the sense of sight.⁹ He published the results in

the form of a dissertation, *Zur Psychophysik des Lichtsinns*, in 1887.

Another pioneer of experimental psychology, beside Neiglick, was the ophthalmologist Gustav Albert Nordman (1841—1921), who also did experimental research, but at F.C. Donders' laboratory in Utrecht (Nordman, 1885—86; 1887:76). His dissertation, *Om den för framkallandet af en formförmimelse nödiga retningstiden i dess beroende af några särskilda variabler*, (On the stimulus time needed for shape sensation in its relation to some special variables) was published in May 1887, at about the same time as Neiglick's.

Nordman discussed the stimulus time needed to bring about visual perception with certain variables. Using an apparatus he had constructed expressly for this purpose, he at first showed a subject a figure for a minimally short time and then extended the time until the subject could describe the figure (Nordman, 1887). He also used a method which had its roots in psychophysics: the comparison of an "outer" stimulus and an "inner" sensation in order to create exact quantitative laws concerning sensation.

Nordman's dissertation was just as much psychophysical as Neiglick's. Both works used scientific methods to study the perception processes without metaphysical speculations on mental life or the soul. It is an example of the dangers inherent in histories of science that Nordman is not mentioned in the history of Finnish psychology, simply because his dissertation was written in the "wrong" branch of science, ophthalmology.¹⁰

Free will or determinism?

The question concerning the essence of the object of psychological research is closely connected with that concerning the methods to be used in psychology. Up until the beginning of this century psychologists in Finland were quite unanimous about the task of studying the mental life of man.

Physiologists did not take any definite stand on the question of the nature of the mind, although Hällstén touched upon this issue when discussing the mutual relations between physiological stimuli, sensory organs, nervous actions and sensory perceptions. He seems to have advocated some kind of a Cartesian interaction theory: our "mental side" ("vår andliga natur"; e.g. 1887:308) interprets information and the nervous system transfers it. However he never made clear what were his views on the nature of that "mental side" (Hällstén, 1869:8—9 et passim; 1873:146—49 et passim; 1887).

Indisputably the most prominent Finnish scientist in the history of physiology, Robert Tigerstedt (1853—1923), a student of Hällstén, also kept silent on the question of the essence of the mind. Tigerstedt argued in his book, *Hjärnan såsom organ för tanken* (The brain as organ of thought) (1889), that the cerebrum acts as the physical basis for the soul (he actually used the word "soul"). Tigerstedt discussed the issue from the standpoint of comparative anatomy, vivisections and observations on patients with brain lesions, but he "kept his distance as much as possible from metaphysical problems" (p. 4). Nevertheless, we can see from the first lines of this book that the theory of interaction between mind and body was also part of his hypothesis:

"Whatever concept of the essence of the soul and its relation to the body we may have, the facts compel us to admit that some part of the body has to be that tool by which the soul obtains information on events in the external world, and which it uses when indisputably influencing bodily actions" (Tigerstedt, 1889:3).

Finnish philosophers, psychologists and educationalists in the late nineteenth century often discussed contrasting views regarding determinism, most of them defending the notion of free will. The best known exceptions were Wilhelm Bolin, who wrote a deterministic dissertation, *Undersökning af läran om viljans frihet, med särskildt afseende a Kants behandling af problem* (A study concerning the doctrine of the freedom of will, with special attention to Kant's treatment of the problem) (1868; see also Manninen, 1987: 157—179), and Hjalmar Neiglick who held the same view (Neiglick, 1883; Manuscripts of the Philosophical Society in Finland 8.2.1884 and 7.3.1884).

As already mentioned, Th. Rein regarded psychology as a discipline which studies the content and actions of the mind. These occur in the soul and are recognized by the soul, which interacts with the material world through the mediation of the brain and the whole body (Rein, 1876:400-456; 1884, 6—7; 1891:48—49, 101; 1896:7—8). Hence he agreed with the major psychologists of that time, Hällstén and Tigerstedt. Rein thought (e.g. 1884: 60) that one of the most essential characteristics of the soul is freedom; in fact he used this idea for assessing psychological theses and schools.

When Rein was elected professor in 1869, it was thought that he would carry on the Hegelian tradition (Manninen, 1887:157—179). However, in his *Psykologi I* (1876) Rein was already criticizing Hegel and his school.

One particular object of Rein's criticism was the

Hegelian concept of the soul — or what Rein thought to be the Hegelian concept. Rein (1876:277—285) claimed that for Hegel and his disciples the soul is just an intermediate phase in the universal process of the development of the world-spirit. Thus, the soul lacks not only any activity of its own, but also true existence. Rein was unwilling to accept this notion.

After Rein's rejection of Hegelianism only one well-known Hegelian scholar was left in Finland, Zacharias Cleve (1820—1900), a professor of education. Cleve reacted in public against Rein's criticism of Hegel. In Cleve's opinion (1877) Hegel and his school did not neglect the true existence of the soul by any means, and even less was Hegel an exponent of determinism. Cleve's defence marked the last efforts on behalf of Hegelian psychology in Finland. The era of that school was past.

In the first part of *Psykologi* (pp. 290—298) Rein also criticized Herbartian ideas — again arguing against determinism. In his opinion Herbart had made a valuable attempt at an exact, quantitative theory of psychology, but at the same time, he had fallen in the trap of determinism. Thus he neglected the most essential difference between matter and spirit, i.e., the freedom of spirit.

Rein's criticism was the first theoretical treatment of Herbartianism in Finland and it established the prevailing view on Herbart in the country for decades to come. Time after time the same views were repeated by Finnish educationists until the end of the century. Although Herbartianism was very popular in some educational circles (Iisalo, 1979:68—76), criticism was voiced against the mechanical views associated with this school. It is impossible, however, to give any definite estimate of the extent to which this was due to Rein's influence.

The first to respond to Rein's criticism of Herbart was the director of the Finnish mint, the amateur philosopher, August Frederik Soldan (1817—85).¹¹ Soldan's article "Herbart och Rein, lekmanna betraktelser ur realistisk synpunkt" (Herbart and Rein, some thoughts of a layman from a realistic point of view) (1877), represented the only defence of Herbartian determinism. All other publications concerning Herbart were of the opposite opinion.

Johann Julius Perander (1838—85, professor of education, 1884—85) made Herbartianism known in Finnish educational circles in the early 1880's (Iisalo, 1979:66—67). In Perander's dissertation *Herbartianismen i pedagogin* (Herbartianism in pedagogy) (1883), Rein's influence is clearly reflected, especially in Perander's highly critical thesis, that the Herbartian soul is just a passive battle-

field of ideas, a realm of complete determinism.¹²

Perander died two years after completing his dissertation, but his criticism of Herbart remained alive. Waldemar Ruin (1857—1938, Professor of Education 1888—1926) repeated the same ideas some years later in his dissertation, *Om Karaktärbildningen didaktiska hjälpmedel* (On the didactic means of character building) (1887). Ruin was a pioneer of Herbartianism in Finland, and his attitude towards this school was generally positive, but he also disagreed with its possible deterministic implications (Ruin, 1887:104—105; 1885).

At the turn of the century the most enthusiastic exponent of Herbartianism, a docent in education, August Mikael Johnsson (1860—1924) also did not share Herbart's opinions on the issue of determinism. Johnsson preferred the Reinian view (Johnsson, 1895:11—14, 168—169, 193), recommending his textbook of psychology in his work, *Kasvatusopillisia luennoita* (Lectures on education) (1895:5) to anyone "who wishes to familiarize himself with a short, clear, full presentation of the psychological view being advocated here."

Psychology, *Zeitgeist* and the neighbouring disciplines

Until this century Finland has been divided both economically and educationally into two classes: in the Swedish speaking upper class and the Finnish speaking majority. In the middle of the last century it became customary to think that education and moral awareness of the common people should be raised to a higher level. For example, Grotenfelt and Rein participated in this project of building a coherent Finnish society (Tommila et. al. 1980, 30—41, 86—102, 213). The views on determinism described above can, at least partly, be understood from this viewpoint.

Determinism was rejected for moral reasons by Rein (1876:295; 1884, 60; 1896:62) and Grotenfelt (1893) and by the educationists mentioned above (Perander, 1883:—30; Ruin, 1887:115—116; Johnsson, 1895: 13, 168—169). It was assumed that moral responsibility presupposes free will. On the other hand, Bolin (1868) and Soldan (1877), who took the determinist view, argued that their approach was consistent with morality see also Manninen, 1987:157—179).

This protracted discussion in the writings of Finnish scholars can be properly understood only in the context of the general *Zeitgeist*. Moreover both philosophers and psychologists, in addition to educationists, participated in this discussion on

determinism and exchanged opinions across disciplinary boundaries. This discussion has to be dealt with as a whole and must not be restricted to the viewpoints of education or psychology alone.

The history of the reception given to Wundtian experimental psychology in Finland thus supports demands that the history of ideas should go beyond traditional histories of individual academic disciplines. For example, news of the developments taking place in Germany was brought to this country largely by a physiologist (Hällstén). It may be possible to write a history of psychology at the international or general level in the form of a history of the discipline, but as far as the early stages of research traditions in a small country are concerned such an approach would be misleading.

NOTES

1. In philosophy it is convenient to start at the decline of Hegelian idealism in the 1860's when it's most influential exponent in Finland, Johan Vilhelm Snellman retired. In the science of education the starting point is the year 1852, when the first professorship was founded at the University of Helsinki (the only university in Finland in the last century). In physiology the leading scientist in Finland in the nineteenth century was Konrad Hällstén, and thus it is best to start from the beginning of his career in the 1860's. The discussion comes to an end at the turn of the century when Hällstén and Thiodolf Rein retired. Soon after the beginning of the twentieth century the dominant Herbartian trend in Finnish education waned, so that this marks a proper terminal date in that branch of science as well.
2. Only two textbooks of psychology had been published in Finland before the 1870's: those of J.V. Snellman (1837) and Zacharias Cleve (1854), both of them following the Hegelian method. Finnish scholars used the term "psychology" in different senses. In the Hegelian textbooks of Snellman (1837) and Cleve (1854) psychology was a part of philosophy which studies "the subjective spirit" as one phase in the general development of "the world-spirit". Thiodolf Rein (e.g. 1976:319—328; 1896:1—2) saw psychology as an autonomous discipline within philosophy, and took its object to be the soul. Wilhelm Bolin and Hjalmar Neiglick did not specify their understanding of "psychology", but their views were closer to scientific naturalism. Little research has been published on the history of psychology in Finland, existing research can be found mostly in short articles. (see Haapasalo, 1976; Jääskeläinen, 1981; 1983; 1984; 1985; Takala and Korkeakangas, 1981; Lehtovaara, 1967).
3. 18.5.1866 and 17.12.1866.
4. Besides these books, Rein entered into psychological arguments in numerous articles and also at meetings of the Philosophical Society in Finland ("Filosofinen Yhdistys") which he founded in 1873. This society has since then served as an active forum for philosophical and scientific discussions.
5. Introspection, as Wundt viewed it, was experimental self-observation within the laboratory, and its methods were derived from psychophysics. Wundt, for example, applied a stimulus to a sense organ and asked subjects to report on the sensation produced. He usually did not use, as Brentano did, the kind of qualitative introspection in which the philosopher, i.e. the "the descriptive psychologist", describes in detail his own inner intentional experience ("Erlebnisse"). (Schultz, 1987, 6575—77; Wertheimer, 1987:64, 72. On the difference between Wundt's and Brentano's methodologies see also Tittschener, 1976).
6. Grotenfelt's attitudes to psi—phenomena were quite sceptical. He pointed out false media, for example, but at the same time he was of the opinion that science could not, for the time

- being verified or falsified for example spiritualist hypotheses (Grotenfelt, 1892; 1926). Hence Grotenfelt was an exponent of the "scientific" psychical research, not of spiritism.
7. I use the terms "Weber's law" and "Fechner's law" in the senses proposed by Boring (1957:287—289; see also Wertheimer, 1987:57—58). Thus Weber's law can be expressed in the statement $q/R = k$, where q stands for jnd. (just noticeable difference), R intensity of stimulus and k for a constant of jnd. The corresponding statement for Fechner's law is $S = k \log R$, where S stands for intensity of sensation. I.e. as the stimulus increases linearly, the sensation increases as the logarithm of this stimulus.
 8. Neiglick did not explain what he meant by French and English sociology and traditions it is not clear what precisely they included. Thus the content of Neiglick's suggestion is not clear.
 9. Neiglick used the method of equal intervals. He showed his subjects two grey plates with static, but different intensities of brightness. The task of each subject was to adjust the brightness of a third plate (which was situated between the others) so that it was of a brightness intermediate between the two other given plates in his experience. If the objective intensity of brightness of third plate was intermediate in the geometrical series, Fechner's law would be verified. After eliminating some disturbing factors, Neiglick obtained results which did support Fechner's law (Neiglick, 1887b; Jääskeläinen, 1983; Mustelin, 1966: 175—187; von Wright, 1947).
 10. Neither of these men or their students continued as experimental psychologists. Neiglick died in 1889, but was in any case no longer interested in laboratory research, and was planning sociological research in his last years (Mustelin, 1966: 187—189; Ruin, 1917; von Wright, 1947). Nordman was elected Docent in ophthalmology, but after his dissertation he concentrated on his medical practice (von Bonsdorff, 1975: 240—241).
 11. Soldan did not pursue an academic career, and the article discussed here was his only scientific publication. He nevertheless had a considerable influence on the intelligentsia, being responsible for guiding the early philosophical studies of Hjalmar Neiglick and Waldemar Ruin (later a professor of education) through private discussions (Ruin, 1917).
 12. In his memoirs Rein (1918:339—340) praises Ruin's intelligence and claims that this highly educated person was a close friend of his.
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