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A Brief History of the Psychology of Testimony

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The historiography of psychology has largely ignored the history of applied aspects of its field. Moreover, contemporary legal psychologists have often overlooked previous related work. The present paper attempts partially to fill these gaps by providing a brief description of the history of the psychology of testimony at the beginning of this century, particularly in central Europe. It is argued that in central Europe, in contrast to the United States and Britain, there existed a pervasive experimental psychology of testimony. This movement probably originated with Binet in France and Stern in Germany. However, it was especially the latter and his followers who succeeded in institutionalizing a 'Psychologie der Aussage' that was widely discussed in legal circles at that time. Although the early studies have often been criticized for their methodological flaws and their negativistic one-sidedness the European movement did have some belated impact in that expert psychological testimony slowly started to be admitted before courts of law. It is of special interest to the contemporary researcher that many of the critical issues raised by early legal scholars were quite sophisticated and remain as pertinent as ever to the experimental study of testimony.

One of the most important areas in the new legal psychology is the psychology of evidence, in particular the psychology of eyewitness testimony (Clifford & Bull, 1978; Loftus, 1979; Yarmey, 1979; Tapp, 1980; Loh, 1981; Monahan & Loftus, 1982). It is also one of the oldest areas. In fact, as I hope this paper shows, contemporary psychology of testimony is in many respects a renaissance of the 'Psychologie der Aussage' that flourished at the beginning of this century. While contemporary researchers generally acknowledge these early beginnings, the major purpose of their works (i.e., to review the more sophisticated recent research) does not allow space for a detailed analysis of historical roots. Thus most authors mention earlier work only in passing (e.g., Clifford & Bull, 1978; Loftus, 1979; Yarmey, 1979; noteworthy exceptions are Rouke, 1957; Greer, 1971; Levine & Tapp, 1973; Loh, 1981).

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Textbook histories of psychology as well as monographs on various aspects of the history of psychology have similarly ignored such 'applied' aspects of their field (for a detailed discussion, see Sporer, 1981). To fill these historiographic gaps, the present paper (1) searches for some of the roots of psychological thinking in the writings of selected legal scholars and their distillation in formal rules of evidence, (2) traces the beginnings of the psychology of testimony in Europe, and (3) assesses its relationship to the legal world, and (4) reflects on some of the issues and problems that seem to have affected the psychology of testimony (and legal psychology in general) both past and present. The present paper does not discuss the history of the psychology of lie detection in any detail, following the current practice to exclude intentional distortions from the psychology of testimony (cf. Stern, 1939; Wells, 1980). However, it should be noted that this separation is probably historically artificial as previously this aspect was also widely discussed (e.g., in the work on 'Tatbestandsdiagnostik'; cf. Sporer, 1981).

COMMONSENSE PSYCHOLOGY AND THE LAW: RULES OF EVIDENCE

'Above all, the identification procedure has to be preceded by a comprehensive interrogation of the witness, wherein he is to describe the characteristic features which could facilitate recognition of the persons or objects to which his testimony or statements refer. Thereafter, in the identification procedure itself, he is, whenever possible, to be confronted with several persons or objects resembling the one to be identified. He should be urged to point out, for example, the identified object, without hesitation, and also to give the reasons why he had identified this one as the real one instead of any of the others ... On the one hand, the investigator has to take care, to the best of his ability, to remove any changes that may have occurred in the object to be recognized and that may thus impair recognition: therefore, for example, he must not present the accused in his prison clothes, or with a distorting beard, etc. On the other hand, the investigator must beware of drawing the witness's attention to the correct object through facial expressions, gestures, or external signs that differentiate the object in question from others'. (Henke, 1838, pp. 705-706; my translation)

This quotation is from a handbook of criminal law and criminal politics written about 150 years ago! It demonstrates the sophistication and degree of psychological learning one may find in the history of legal writings based on the experience, intuition and logic of legal scholars. The passage also addresses some issues and problems that, through the very fact of their historic recurrence, are important ones worthy of the contemporary researcher's attention.

The historiographer Thucydides, living during the Golden Age of Greece in the fifth century BC, already knew of the problems of eyewitness testimony, noting a 'want of coincidence between accounts of the same occurrences by different eye witnesses, arising sometimes from imperfect memory, sometimes from undue partiality for one side or the other' (Levine & Tapp, 1973, p. 1088). Two millennia later, Oerstett (1822) took it for granted that 'it is easily intelligible that the proof through witness testimony be, as a matter of course, fallible (an sich trüglich sei) and that only necessity had dictated that it be admitted in all states' (p. 629; my translation). Many other legal scholars have shared these concerns (e.g., Kleinschrod, 1805; Mittermaier, 1834; Brauer, 1841; Bentham, 1843; Gross, 1898; cf.

also Schneickert, 1904; Wigmore, 1909; Hellwig, 1910; Undeutsch, 1967; Greer, 1971; Sporer, 1981).

These various scholars attempted to pinpoint the sources of error (e.g., poor lighting, fright) and to account for them theoretically (e.g., in terms of substitution of inferences for perceptions; supplementation of the perceived by fantasy; see Brauer, 1841, and Hellwig, 1910). There were also numerous attempts to establish criteria for the admissibility of certain groups of witnesses although there was room for much dispute concerning who should be disqualified as a witness. Most of these attempts at categorization referred to what we would today call 'person variables', such as age, gender, or being a close relative (cf. Gross, 1898; Undeutsch, 1967). Other variables used to exclude witnesses, or at least to derogate their credibility, reflect social stigmatization processes of those times (e.g., being of Jewish faith, being an adulteress, having been incarcerated). Many exclusionary rules also contained interesting implicit psychological assumptions (e.g., having testified against a person once before and therefore being his enemy; cf. critically, Kleinschrod, 1805).

Depending on the legal system under consideration (i.e., adversary or inquisitorial) many of these psychological assumptions over time have distilled, respectively, into 'rules of evidence' in the common law (see Greer, 1971) and codifications in penal and criminal procedural codes: there are numerous examples in Mittermaier's (1834) treatise on evidence which compares the German criminal procedures with the English and the French systems. Hence there were specific age and/or gender norms for being considered to be competent to testify, or to swear an oath, that varied considerably from one country to another and over time (see Mittermaier, 1834; Undeutsch, 1967).

It should be noted that many of the psychological assumptions inherent in these rules lend themselves to empirical testing. Much of this psychological knowledge has been collected in Hans Gross's widely-read 'Handbook for Examining Justices' (1893) and in his textbook on criminal psychology (1898). With the advancement of 'scientific psychology' at the turn of the century, psychologists developed some of the tools to tackle these problems, besides providing some general knowledge regarding perceptual and memory processes that could have helped the legal world to understand better the intricacies of eyewitness testimony. The extent to which the 'new psychology' attempted to meet this challenge is discussed below.

THE BEGINNINGS OF THE PSYCHOLOGY OF TESTIMONY

Background

By 'new' 'scientific' psychology we mean psychology as a laboratory science as it had developed in the latter half of the nineteenth century, focusing primarily on processes of sensation, perception and memory (cf. Boring, 1950; Murphy & Kovach, 1972; Watson, 1978; Leahey, 1980). There were also other forms of psychology in the nineteenth century, largely inspired by philosophical and medical traditions, that dealt with diverse forensic issues, including those of testimony (cf. Gross, 1898; Sporer, 1981), and there was a large body of fiction, popular-psychological, and medical writings that revealed strong socio-cultural biases against women, children and other subgroups (cf. Undeutsch, 1967; Sporer, 1981). It is against this general cultural background, as well as in comparison with the various branches of psychology available at the time, that the emergence of 'applied psychology',

particularly the 'psychology of testimony', as an offspring of the new experimental psychology has to be understood.

Early Studies on the Psychology of Testimony

It would be difficult, and probably wrong from a sound historiographic perspective, to single out a specific person and even more problematic to determine a specific date as the origin of the experimental study of testimony. Occasional papers bore on issues or dealt with themes that later were to become central to the psychology of testimony (e.g., on association and memory in Germany and Italy: cf. Gross, 1898; Wigmore, 1909), and one or the other author may even have noted potential implications of their work for the criminal justice system.

For example, Cattell (1895) investigated certain aspects of 'incidental memory' that are relevant to the psychology of testimony. He demonstrated the unreliability of casual observation by positing questions to students about things they had recently seen. Bolton (1896) picked up a suggestion of Cattell's to conduct this sort of investigation with different classes of people. He replicated and extended Cattell's findings of the general inaccuracy of recollection that seemed to occur despite the confidence some of the subjects expressed in their observations. However, in spite of remarks by these researchers regarding the potential utility of their work for the criminal justice system, apparently no one followed up their suggestions.

From a completely different vantage point, the Austrian examining justice Hans Gross had become aware of the shortcomings of testimony and the differences between individual witnesses. In his daily experience he claimed to have examined 'well over 45 000' (Gross, 1904). For a long time, Gross had employed 'witness tests' which he used to perform routinely with witnesses in his criminal investigations (e.g., he had them estimate distance, time, the number of coins, the age of people; and he tested their recognition of people); and he had also conducted investigations on problems of perception, retention and reproduction (Gross, 1894, cited in Gross, 1907). Klaussmann (1899), a jurist, also reported on a series of ingenious techniques to test perceptual, judgemental and recognition abilities of witnesses. Particularly interesting are his suggestions for facial recognition tests. Gross's favourite demonstration experiment was a simple event (e.g., pouring water in one of several glasses) on the details of which he questioned students, astonishing them at the inaccuracies and errors that emerged (Gross, 1898). Gross also stressed the importance of the scientific approach to these problems, praising especially Ebbinghaus (1885) for his sound approach (Gross, 1898). Large portions of Gross's (1898) textbook on criminal psychology were devoted to general and differential aspects of the psychology of testimony, making him an important pioneer in an area that psychology proper had not yet systematically investigated.

Louis William Stern and the 'Psychologie der Aussage'

Stern and his followers carried out some of the earliest controlled experimental studies on the psychology of testimony, and they were amongst the first experimental psychologists explicitly to stress the importance of their work to the law (and other areas such as pedagogy, medicine, and even history). However, one of the experimental paradigms Stern (1902) initially employed was adapted from Alfred Binet

(1897, 1900) who had also noted, in 'La Suggestibilité', the potential implications of his experiments on suggestibility (without the use of hypnosis) for a 'science du temoignage':

'The questions that we are treating here are so new that they shed light on some unnoticed, unexpected blind spots. I want to point out in passing the usefulness that could come from creating a practical science of testimony by studying errors of memory, the means of recognizing them, and also ways of recognizing the signs of fact (or accuracy). This science is too important for it not to be organized at some time or another'. (Binet, 1900, p. 285; translation in Wolf, 1973, pp. 108-109)

Binet's (1900) experiments, using elementary schoolchildren as subjects, were designed to investigate the effects of various forms of questioning with differing degrees of suggestibility. The results showed a considerable proportion of wrong answers, and this led Binet to stress the indivisible unity of question and answer (cf. Stern, 1902). In another series of experiments, Binet investigated the influence of a group of peers on testimony, finding what social psychologists such as Asch were later to call 'conformity' effects (cf. Haines & Vaughan, 1979). Although Binet did not follow through his ideas it is worth noting that he envisaged a 'psychojudicial science' of a much more comprehensive scope, including the psychology of jurors and judges, than did Stern and his followers (Binet, 1905; Wolf, 1973).

In Berlin during 1901, Stern introduced his research programme for the 'Psychologie der Aussage': that is, the psychology of verbal report as it occurs in the law, in education, in psychiatry and even in history. (I prefer to leave the term 'Aussage' untranslated. It was used in its broadest sense, referring generally to 'that function which strives to bring to reproduction present or past reality through the activity of human consciousness' (Stern, 1903-1906, vol. 1, p. 1; my translation). Thus, neither the term 'report' (Whipple, 1909) nor 'testimony' seems a wholly adequate translation although I have used the latter term interchangeably, at least in the legal context.) Of special theoretical interest was the experimental study of recollection. Stern described his recollection experiments in which subjects were to report on pictures after studying them ('Bildversuch', usually translated as 'picture test'). The obtained findings led him, perhaps too hastily, to conclude with the often cited adage: 'Error-free recollection is not the rule but the exception - and even the oath is no protection against deceptions of memory' (Stern, 1902, p. 327). Stern was quick to point out the practical implications of his alarming findings. A more cautious evaluation of people's accounts seemed appropriate, especially in a legal context. One possibility, Stern suggested, would be to have key witnesses examined by psychological experts (or psychologically trained jurists) to assess their characteristic degree of recollection ability, even in 'normal' cases, given that the current methods had been developed further and been made more reliable. It should be noted that Stern did not phrase his suggestions as demands, but rather formulated them as problem areas which he hoped further empirical investigation could solve.

Stern also outlined a gamut of factors to be investigated, for example the effects of longer retention intervals, various types of questioning and of hearsay. Of special interest was his suggestion to study memory for events experimentally, either presented as films or pictures or as well-rehearsed and programmed dramas, in order to be able to compare the contents of the report with that of the event (Stern, 1902). The drama experiment ('Wirklichkeitsversuch', that is literally

'reality experiment', usually translated as 'event test') was first carried out in the same year in the criminalists' seminar of von Liszt, the legal scholar and well-known criminologist at Berlin (von Liszt, 1902). Another lawyer, Jaffa (1903), has described the Liszt drama experiment, in which an audience was asked to report on a staged event they had seen, using 'free narrative'. Some groups of participants were interrogated after several days; a proportion of these were also asked leading and suggestive questions. Results indicated a general superiority in accuracy for the 'free narrative' compared with the 'interrogatory' condition, especially if the latter was tainted by suggestion. Earlier reports were more accurate than delayed ones.

In the following years 'reality experiments' were quite fashionable, both as instruments of scientific investigations and as demonstration experiments in university law courses; even the participants of an interdisciplinary congress of jurists, medical experts, psychiatrists and psychologists fell prey to the investigatory zeal of this new field (cf. Stern, 1903-1906). And during the renaissance of the psychology of testimony this research paradigm, aided by the advances in film and video technology, is again frequently used (e.g., Buckhout, 1974; Marshall, 1980; cf. Wells, 1980).

Stern's call for an interdisciplinary approach to the problem of 'Aussagepsychologie' received a response from many psychologists, jurists, teachers, psychiatrists and others. A boom of empirical investigations followed and they tackled a great variety of issues (e.g., the educability of 'Aussagen', Borst, 1905; the ability of a panel of judges and one of psychologists to arrive at the 'truth' on the basis of witness testimony, Kobler, 1914; cf. Stern, 1908, and Sporer, 1981). These studies also employed a diverse array of methods, from laboratory and field experiments to case studies, and included quantitative and qualitative analyses of errors and confidence indices (cf. Lipmann, 1935).

Stern was also instrumental in the institutionalization of this new field in Germany. He coined the term 'angewandte Psychologie' ('applied psychology'; Stern, 1903-1906; Dorsch, 1963) and provided a new publication outlet and a common forum for discussion for the numerous 'Aussage' studies in his 'Beiträge zur Psychologie der Aussage' (Stern, 1903-1906). In 1907, the 'Beiträge' were transformed and expanded into the 'Zeitschrift für angewandte Psychologie und psychologische Sammelforschung' under the editorship of Stern and Lipmann. Otto Lipmann became an important figure in the movement of applied psychology, and succeeded Stern as a director of the 'Institut für Angewandte Psychologie' in 1916. A prolific writer, Lipmann also published extensively on the psychology of testimony: for example, on the 'psychology of the lie' (Lipmann & Plaut, 1927) and on methodological issues in the psychology of testimony (Lipmann, 1935).

FURTHER DEVELOPMENTS

Stern and Lipmann were not the only psychologists interested in the psychology of testimony. Other researchers picked up these ideas in Germany and elsewhere, the most notable being Karl Marbe at Würzburg, Edouard Claparède in Switzerland, and Hugo Münsterberg in the USA (cf. Dorsch, 1963). In addition, Wigmore (1909) mentioned that in Russia, India and even in Chile some interest was shown. Binet in France, however, seemed less successful in establishing the psychology of testimony and expanding it into a 'psychojudicial science' (Binet, 1905; Wolf, 1973).

The first decade of the psychology of testimony brought forth a large amount of experimental research by psychologists, physicians, psychiatrists, pedagogues and even jurists. General factors such as retention interval, excitement, form of questioning, influence of suggestion and oath, as well as differential factors such as gender, individual differences in suggestibility, and developmental aspects of remembrance for pictures, events and verbal material (rumour, hearsay) were meticulously studied and analysed in both qualitative and quantitative ways. Even the possibility of improving the fidelity of 'Aussagen' through training ('Erziehbarkeit'; Borst, 1905; Oppenheim, 1906; Breuking, 1910) was investigated experimentally, indicating a shift from the initial negativistic outlook towards a more balanced appreciation of testimony (Stern, 1903-1906, vol. 1, p. 539).

Of special interest is an early attempt by Kobler (1914) to compare the capability of a tribunal of psychology-trained laypersons with one composed of 'real' judges to reconstruct the 'facts' of an event on the basis of witness testimony. The results of this 'simulated trial' suggested that the two tribunals arrived at simplified and somewhat distorted versions of the 'truth', based on a partially faulty testimony, and reached comparable results in verdict and damages compensated. In two other experiments, for the first time short silent films were used to maximize experimental control over the presentation of brief events to be reported (Muscio, 1916; Vieweg, 1921). It would be impossible to summarize here the scores of studies carried out in psychological laboratories, school classrooms, law courses and scientific meetings during those early years and published in psychological, medical, educational and legal journals (cf. Stern, 1908, 1911, 1913a; Whipple, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1917).

The first book-length monographs on forensic psychology that introduced the new psychology of testimony to a broader readership appeared at the beginning of the century (e.g., Münsterberg, 1908; Reichel, 1910; Stöhr, 1911; Marbe, 1913; Varendonck, 1914). Even some introductory textbooks of psychology devoted space to this new area (e.g., Braunshausen, 1915). Although research activity declined and shifted in emphasis after the original enthusiasm had waned, by the end of the 1920s a substantial body of knowledge, enriched by first-hand practical experiences before the courts, had accumulated (see the references detailed in Stern, 1908, 1911, 1913a, 1926; Vieweg, 1921; Schrenk, 1922; Lipmann, 1925, 1935; Gorphe, 1927; Hellwig, 1927; Kuhlmann, 1929; Slesinger & Pilpel, 1929; Mönkemöller, 1930; Plaut, 1931; Undeutsch, 1967, Arntzen, 1970; Sporer, 1981).

Reception by the Law and Expert Psychological Testimony

From the very beginning, researchers and practitioners alike were eager to point out the implications of their findings for a proper evaluation of eyewitness testimony. Specific procedural reforms for the handling of witness testimony during pre-trial investigations by the police and the examining justice, as well as for the trial, were proposed (e.g., Schneickert, 1904; Lipmann, 1905; Stern, 1905), and the admission and consultation of psychological experts were variously demanded (e.g., by Stern, 1902; Lipmann, 1905; Münsterberg, 1908).

The reaction of the legal profession was a critical one, but it would be wrong to construe it as one of blank rejection, an impression one might derive from reading Wigmore's (1909) satirical critique of Münsterberg's provocative 'On the Witness Stand' (1908) which contemporary researchers have, in my opinion erroneously, taken as representative of the legal psychology movement of those days.

The fact is that such notable legal scholars as Gross, Liszt, Aschaffenburg, Radbruch and Wigmore welcomed these new approaches to the study of testimony, and many actively participated in them: for example, by having 'reality experiments' conducted in their classes. Their criticisms were to the point but constructive, emphasizing Stern's (1902) postulate of 'closeness to life' ('Lebensnähe') as a principle for experimentation and thus anticipating many arguments about the 'external validity' of laboratory experiments as we would call it today (Loh, 1981; Monahan & Loftus, 1982).

The criticisms and suggestions were of a substantive nature and often entailed highly specific methodological issues that revealed a high degree of psychological sophistication on the part of lawyers. For example, lawyers generally favoured event over picture tests (e.g., Gross, 1903; Jaffa, 1903), and stressed the importance of focusing more on individual differences and idiosyncrasies of specific witnesses (e.g., Gross, 1903, 1904) rather than relying on findings based on group averages (e.g., Wigmore, 1909). In several studies conducted by jurists, the influence of attention and the degree of emotional excitement on the ability to perceive and remember was recognized (e.g., Jaffa, 1903; Radbruch, 1906; Kobler, 1914). Methodologically, the distinction between testimonial errors regarding 'central' and 'peripheral' details (in today's terminology) was also elucidated by Jaffa (1903) and by Wreschner (1903), who argued that such a distinction had to be made on empirical grounds, and not through Stern's (1902) method who a priori and intuitively had assigned a double weight to errors in 'important' details.

These examples illustrate that there existed a sophisticated interdisciplinary dialogue between psychology and the law at the beginning of this century. They also demonstrate the interest that at least some members of the legal profession showed in the advancement of psychology and its applications to the law. However, the legal profession was reluctant, if not violently opposed, to relinquish control over the actual evaluation of witnesses which they considered their own province. While they were open to the theoretical developments in psychology and while they recognized the importance of psychological training for jurists (e.g., Gottschalk, 1906; Reichel, 1910; Friedrich, 1911; Mittermaier, 1912; Stern, 1913b), they generally did not want psychologists as experts to conduct psychological witness examinations and experiments in their courtrooms (e.g., Gottschalk, 1906). Even Gross clearly distinguished between 'theoretical' experiments, which psychologists were to carry out to further knowledge on the psychology of testimony and which psychologists should be called upon to discuss as expert advisers, and 'practical experiments' (Gross, 1903), namely witness examinations that should remain in the hands of examining justices (Gross, 1907).

Considering the wide attention that the psychology of testimony received at that time, formal response by the legislative and by the judiciary was slow. A commission for the reform of the code of criminal procedure ('Strafprozessordnung') largely bypassed the suggestions and demands by the 'Aussage' psychologists although one could not say that it had ignored these efforts altogether (Schneickert, 1906). Similarly, the judiciary was initially reluctant to admit psychologists as experts on testimony to the courtroom (Stern, 1926; Undeutsch, 1954, 1967). However, defence lawyers (and also medical experts) adopted the principle of the new 'Aussagepsychologie' and frequently usurped them to their advantage (Undeutsch, 1954). Probably the first time that expert 'psychological' testimony on the evaluation of witness testimony was heard before a court of law was in the Berchtold murder trial in Munich in 1896 (Schrenk-Notzing, 1897). Two psychiatrists, Schrenk-Notzing and Grashey, attempted to demonstrate before the

court that the press, through its active participation in the chase for the murderer and its biased reporting, had exerted suggestive influences and retroactive memory distortions ('rückwirkende Erinnerungsfälschung'). Schrenk-Notzing's (1897) expert testimony in this widely discussed case stressed the significance of suggestion on testimony which he wanted to put on record although he had no doubt regarding Berchtold's guilt.

Around 1903 or 1904, Stern probably became the first psychologist to testify as an expert regarding the truthfulness of the depositions of an adolescent boy who supposedly had been sexually molested (Stern, 1926). From a comparative analysis of the successive depositions of the boy Stern concluded that the later statements were more likely to have been a product of suggestive questioning than recollections of true experiences. This type of case, involving some form of sexual abuse of children or adolescents (mostly girls) by a teacher, priest, relative or stranger, became the prototype of the case in which psychologists' testimony was called upon. One of the best known is Amand van Puyenbroeck's murder trial in Belgium in which Varendonck, a psychologist, presented results of experiments he had specifically conducted with schoolchildren who were similar to the key witnesses, employing questions particularly pertinent to the ones used in the interrogations (Varendonck, 1911-1912; cf. Whipple, 1913; Stern, 1926; Rouke, 1957). This case, as many others in which psychologists testified on behalf of the defence, resulted in an acquittal of the defendant (cf. Stern, 1926). However, the goal of these psychologists was not only to help defendants (in fact, Stern (1926) deplored the one-sidedness of cases they were admitted to) but also to act as advocates for the children and so save them from the agony of repeated interrogations.

Once confronted with the intricacies of courtroom routine psychologists also became more aware of the judicial needs and ways of thinking. It also seems that this exposure to courtroom reality opened up new avenues and ways of knowledge for the psychology of testimony, leading to an increased appreciation of case studies ('Kasuistik'; cf. Lipmann, 1935). By the beginning of the 1930s, a series of case collections had accumulated (e.g., Stern, 1926; cf. Lipmann, 1935) which, along with the monographs summarizing the experimental work, amounted to a substantial body of knowledge on the psychology of testimony.

Udo Undeutsch (1954, 1967), who later became one of the leading authorities on the psychology of testimony in Germany, has provided us with an excellent summary of the history of expert psychological testimony in Germany. He has referred to the developments in Europe described so far as the 'first phase' in the history of the psychology of testimony followed by a decline in research and publication activity for about the next two decades. His work has also shown that the reformatory efforts by the 'Aussage' psychologists had some belated impact on the law of criminal procedures and on the decisions of German supreme courts. During the 1920s some state ordinances met the suggestions put forth by Stern and his followers (reprinted in Stern, 1926), and the use of psychological experts became gradually required through higher court decisions for the evaluation of non-adult witnesses in the 1930s and 1940s, and for adult witnesses in the 1950s.

It should be noted that the focus of the expert testimony in Germany was, and still is, directed at the evaluation of individual witnesses and their testimonies, unlike the situation in the USA where psychological experts today testify only to general factors that may, or may not, have affected the testimony of a witness (Loftus, 1979). However, the question about whether the expert is to testify to the credibility of a witness in general or to the credibility of the details of the testimony given has remained controversial (Liebel & von Uslar, 1975; Wegener,

1981). It is also striking that this approach has led to a much more balanced evaluation of witness testimony, which is also evident in Stern's later writings (e.g., Stern, 1930, 1939), compared with the rather negativistic outlook characteristic of the early days of the psychology of testimony. Undeutsch (1954, 1967) has argued that this negativistic view was originally brought about by the one-sided goals of the experts and the one-sided selection of cases. Originally experts were called by the defence only (Stern, 1926; Mönkemöller, 1930) whereas later it was considered the duty of the state (the so-called 'Aufklärungspflicht' by judge and prosecuting attorney) to make use of psychological experts to guarantee the 'finding of truth'. Other reasons for the originally negative tone may have lain in the socio-cultural biases against women and children which prevailed at that time, as well as in faulty methodology which was primarily designed to bring out the limitations in eyewitnesses' performance (cf. Undeutsch, 1967; Wegener, 1981).

However, it should also be pointed out that in central Europe this move away from laboratory and field experimentation towards 'praxis', namely the diagnostic of individual cases, has led to a stagnation in theoretical advancements as well as to unnecessary restrictions on the scope of topics that 'forensic psychologists' have tackled. For instance, most contemporary monographs in German on the psychology of testimony (e.g., Undeutsch, 1967; Arntzen, 1970) almost exclusively discuss and generalize from the evaluation of non-adult witnesses in sexual offence cases. This selection bias, dictated by the needs of the legal profession, has most likely also led to another kind of one-sidedness that similarly should be avoided. Judicial practice has enslaved 'forensic psychology' as a subsidiary science from which it has to emancipate itself again.

Developments in English-speaking Countries

The present review has primarily focused on the history of the psychology of testimony in central Europe, and especially in Germany. As other authors have investigated the developments in English-speaking countries, mainly in the USA, I summarize them only briefly here (see Rouke, 1957; Greer, 1971; Levine & Tapp, 1973; Anastasi, 1979; Loh, 1981).

Parallel to the psychological knowledge inherent in the rules of criminal procedure and legal commentaries in central Europe, there existed, probably even more pronounced and elaborated in the common law of Britain and the USA, 'rules of evidence' that summarized century-long psychological learnings on issues of testimony and witness credibility (for examples see Bentham, 1843; Wigmore, 1909; Greer, 1971). But it is Münsterberg's 'On the Witness Stand' (1908) that is frequently, and incorrectly, considered to mark the starting point for legal psychology. Münsterberg's provocative book comprised a series of essays published in the preceding year in popular magazines. It contained many useful but oversimplified suggestions for applying the 'new psychology' to testimony and other crime-related issues, drawing heavily on the European work without giving specific references. The essays were not written in a technical fashion but rather to popularize the ideas of a legal psychology among the general public, hoping that public opinion would exert pressure on the legal profession 'to turn the attention of serious men to an absurdly neglected field' (Münsterberg, 1908, p. 9).

However, the way Münsterberg went about selling his ideas was doomed to failure. His boisterous approach surely shows one way not to proceed if one wants to convince an audience of the points one is trying to make. To call the legal profession

'obdurate' (p. 9), 'completely satisfied with the most haphazard methods of common prejudice and ignorance' (p. 44), 'unaware' (p. 46), and 'slow to learn' (p. 63), etc. was an inappropriate way to try winning over tradition-conscious members of the legal profession. This sledge-hammer approach was more likely to create resistance in the legal circles being challenged. And the reply was awesome. John Wigmore (1909), Dean of the Chicago Law School, who himself had carried out 'testimonial and verdict experiments' (Greer, 1971), launched a vehement, satirical, counter-attack on Münsterberg's assertions. His lucid analysis contained many criticisms that have remained pertinent even to present research on the psychology of testimony (cf. Loh, 1981). For example, he criticized the legal naivety with which psychologists approached the legal system in which they wished to play a part and he noted that over-hasty generalizations from experimental results based on group means were no sound basis on which one could assess errors of individual witnesses.

It should be noted, however, that many of Wigmore's criticisms were directed against the 'associative method' of psychological 'Tatbestandsdiagnostik' (lie detection), which even in Europe only few researchers considered still feasible, and not against the collaboration of experimental psychology with the law in general. The extensive bibliography in his article also attests to the fact that Wigmore, and probably many other legal scholars (cf. McCormick, 1927), were generally quite interested in what psychology had to offer but not in the form in which it was available at that time. The way Münsterberg presented his arguments was perceived as 'yellow psychology' which the legal profession thought it could do without (Moore, 1907).

Thus it seemed that legal psychology never really got off the ground in the USA, nor in Great Britain (Greer, 1971; Loh, 1981). Later attempts, this time by lawyers, to develop a legal psychology in the context of the 'legal realist' movement were also unsuccessful (cf. Loh, 1981). Occasional studies on the psychology of testimony in the USA and Britain (e.g., Muscio, 1916; Cady, 1924; Marston, 1924; Slesinger & Pilpel, 1929) never amounted to a 'movement' comparable with the one in central Europe; nor were the repeated proposals to wed the two disciplines psychology and the law, ever consummated.

CONCLUSIONS

This review of the history of the psychology of testimony has attempted to demonstrate that before the recent renaissance of the psychology-law interface there already existed at the beginning of this century in central Europe a smaller yet comparable movement to marry the two disciplines. While the need to fill this gap in the historiography of applied psychology constitutes a justifiable goal in itself, the history of the psychology of testimony is also of interest to present researchers as it highlights some problems that legal psychologists faced then and which their counterparts face today. The very fact of their historical recurrence marks these issues as crucial ones that legal psychologists have to consider. It should, however, be noted that most of the developments described took place within the context of an inquisitorial legal system which further complicates a transfer of these learnings to an adversary system of law.

One recurring issue is the degree of legal naivety with which psychologists 'ran to help', often being unaware of the century-long psychological learnings inherent in the legal literature. Much of this psychological knowledge that has been distilled from everyday courtroom experience lends itself to empirical testing and

provides a good starting point for the legal psychologist; taking into consideration where the law is coming from ensures 'relevance' and increases the likelihood that psycho-legal research is perceived as pertinent to the legal issues under discussion.

This should not be misunderstood to mean that psychology should give up its integrity and its unique perspective. The latter is also essential for providing new insights through psychological theorizing and for pointing out issues that otherwise may go unnoticed from a purely legal perspective. To meet these demands requires the institutionalization of a truly interdisciplinary dialogue that facilitates the exchange of ideas. Stern and his followers recognized this and sought to establish a dialogue through the foundation of an interdisciplinary journal and of research institutes. They also published in legal journals and offered courses and conferences on legal psychology. Perhaps the less pronounced role differentiation among academic disciplines existing at that time made this dialogue across their boundaries easier. On the other hand, the numerous criticisms by jurists of the early work by the 'Aussage' experimentalists showed that these efforts were not yet sufficiently coordinated to meet the lawyers' needs. For example, police officers, judges and attorneys would have been greatly interested if psychologists could have provided them with foolproof methods to signal whenever a specific witness before them was telling the truth and when not. Instead, they were being told that eyewitness testimony could be unreliable, and that, for example, younger subjects, on average, made more errors of recollection than older subjects. Although the early 'Aussage' experimentalists did address the issue of individual differences, apparently this was not enough to meet the practical needs of the jurists.

Another criticism was one levelled at the contrived nature of some of the experiments, especially the 'picture tests'. What did lawyers care about what percentage of some hundred minor details of an intricate and artistic picture children could reproduce after calm, one-minute study of the picture when they were interested to know whether or not legally important facts of a real-life event could be faithfully recovered from a witness who had caught only glimpses of a fleeting event while in extreme emotional turmoil or severe fright? It was lawyers who first employed the event methodology to the experimental study of testimony, and its continued popularity has proved them right.

It was also lawyers who initiated the experimental study of the impact of testimony: that is, they realized that it was not the correctness or falseness of testimony in the abstract which was of importance but rather whether judge or jury could discern between them and thus arrive at an appropriate decision. In other words, the crucial question for the jurist is whether it is possible to achieve correct conclusions and decisions despite some partially incorrect witness input. One way (and most contemporary German forensic psychologists would argue that it is the only way) to explore this issue is by systematically observing the routine variations of testimony in their natural settings (e.g., Undeutsch, 1967; Arntzen, 1970). The historical shift from the laboratory to courtroom (case) studies has started this trend. Are we to repeat the historical cycle? At last, the historical pendulum that has swung between both types of approaches will probably come to rest in the middle, indicating the necessity of both naturalistic and experimental approaches and a striving for general theories that account for findings both in the laboratory and the field.

But even if psychologists had elaborated the most consistent and empirically corroborated theories on the conditions for the credibility of testimony and its assessment, it would probably still take some time before the courts and the

legislative incorporate them into their decision-making. Consider for a moment the following analogy. If after decades in which experimental psychology has made use of analysis of variance designs some group of statisticians arrive at the conclusion that all these studies are fraught with some heretofore unrecognized sources of error that could only be eliminated if their new approach was followed, would we at once burn our books and journals, shut down our computers and follow the new statistical gospel? If not, how can legal psychologists expect that the legal profession will at once change its well-established ways of thinking (about testimony) that have served it well for so long? We must not expect immediate results, and we should be cautious and modest in our conclusions until time shows whether our offer did in fact result in improvement. We must also beware of over-generalizing our results and must point out the positive as well as the negative aspects of our findings to protect them from abuse.

Finally, legal psychology has to understand itself as a historically grown product that has been shaped by external and internal historical 'forces'. The psychology of testimony at the beginning of this century has been repeatedly described as 'negativistic', particularly with regard to its assessment of the (lack of) value of testimony by children and women. As this tendency reflected socio-cultural values prevalent at that time, legal psychologists have to become aware of possible biasing influences that may or may not affect their theorizing or even their empirical data.

Today, as before, it is usually the defence which calls psychologists in the USA and Britain to give expert psychological testimony. This form of selection bias may also restrict the impressions psychologists get from this limited perspective. While an effective 'crime control' and a 'Civil Liberties' orientation need not necessarily be exclusive nor contradictory, social scientists should reflect on their personal predilections before they render their services to one party or the other. However, nobody will mind if they dedicate their efforts to further the finding of truth and the promotion of justice.

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REFERENCES

Anastasi, A. (1979). Fields of Applied Psychology. New York: McGraw-Hill.

Arntzen, F. (1970). Psychologie der Zeugenaussage. Göttingen: Hogrefe.

Bentham, J. (1843). Rationale of judicial evidence. In J. Bowring (ed.), The Works of Jeremy Bentham. Volume 6. Edinburgh: Tait.

Binet, A. (1897). Description d'un objet. Année Psychologique, 3, 296-332.

Binet, A. (1900). La Suggestibilité. Paris: Schleicher Frères.

Binet, A. (1905). La science du témoignage. Année Psychologique, 11, 128-136.

Bolton, F.W. (1896). The accuracy of recollection and observation. Psychological Review, 3, 286-295.

Boring, E.G. (1950). A History of Experimental Psychology. New York: Appleton.
Borst, M. (1905). Experimentelle Untersuchungen über die Erziehbarkeit und die Treue der Aussage. In L.W. Stern (ed.), Beiträge zur Psychologie der Aussage. Volume 2. Leipzig: Barth.
Brauer, W. (1841). Über die Unzulässigkeit des direkten Zeugenbeweises. Annalen der deutschen und ausländischen Criminal-Rechtspflege. 14(1), 1-34.
Braunshausen, N. (1915). Einführung in die experimentelle Psychologie. Leipzig: Teubner.
Breuking, H. (1910). Über die Erziehbarkeit der Aussage. Zeitschrift für angewandte Psychologie, 3, 32-87.
Buckhout, R. (1974). Eyewitness testimony. Scientific American, 231, 23-31.
Cady, H.M. (1924). On the psychology of testimony. American Journal of Psychology, 35, 110-112.
Cattell, J.McK. (1895). Measurements of the accuracy of recollections. Science, New Series 2, 761-766.
Clifford, B.R. & Bull, R. (1978). The Psychology of Person Identification. London: Routledge & Kegan Paul.
Dorsch, F. (1963). Geschichte und Probleme der angewandten Psychologie. Bern & Stuttgart: Huber.
Ebbinghaus, H. (1885). Über das Gedächtnis. Leipzig: Duncker & Humblot.
Friedrich, J. (1911). Die Notwendigkeit rechtspsychologischer Fortbildung. Recht und Wirtschaft, 1, 74-76.
Gorphe, F. (1927). La critique du témoignage. Paris: Dalloz.
Gottschalk, A. (1906). Zur Zeugenpsychologie. In L.W. Stern (ed.), Beiträge zur Psychologie der Aussage. Volume 2. Leipzig: Barth.
Greer, D.S. (1971). Anything but the truth? The reliability of testimony in criminal trials. British Journal of Criminology, 11, 131-154.
Gross, H. (1893). Handbuch für Untersuchungsrichter. Graz: Leuschner & Lubensky.
Gross, H. (1898). Criminalpsychologie. Leipzig: Vogel.
Gross, H. (1903). Das Wahrnehmungsproblem und der Zeuge im Stafprozess. Archiv für Strafrecht und Stafprozess, 49, 184-203.
Gross, H. (1904). Bücherbesprechungen von Hans Gross. Archiv für Kriminal-Anthropologie und Kriminalistik, 16, 371-377.
Gross, H. (1907). Über Zeugenprüfung. Monatsschrift für Kriminalpsychologie und Strafrechtsreform, 3, 577-580.
Haines, H. & Vaughan, G.M. (1979). Was 1898 a 'great date' in the history of experimental social psychology? Journal of the History of the Behavioural Sciences, 15, 323-332.
Hellwig, A. (1910). Historisches zur Aussagepsychologie. Archiv für Kriminal-Anthropologie und Kriminalistik, 36, 323-341.
Hellwig, A. (1927). Psychologie und Vernehmungstechnik bei Tatbestandsermittlungen. Berlin: Langenscheidt.
Henke, E. (1838). Handbuch des Criminalrechts und der Criminalpolitik. Vierter Theil. Berlin: Nicolai.
Jaffa, S. (1903). Ein psychologisches Experiment im kriminalistischen Seminar der Universität Berlin. In L.W Stern (ed.), Beiträge zur Psychologie der Aussage. Volume 1. Leipzig: Barth.
Klaussman, A.O. (1899). Zeugen-Prüfung. Archiv für Kriminal-Anthropologie und Kriminalistik, 1, 39-60.
Kleinschrod, G.A. (1805). Über den Beweis durch Zeugen in peinlichen Sachen. Archiv des Kriminalrechts, 6(3), 34-65.

Kobler, F. (1914). Ein rechtspsychologisches Experiment. Zeitschrift für angewandte Psychologie, 8, 317-325.

Kuhlmann, A.F. (1929). A guide to material on crime and criminal justice. New York: Wilson.

Leahey, T.H. (1980). A History of Psychology. Englewood Cliffs, NJ: Prentice Hall.

Levine, F.J. & Tapp, J.L. (1973). The psychology of criminal identification: the gap from Wade to Kirby. University of Pennsylvania Law Review, 121, 1079-1131.

Liebel, H. & Uslar, W. von (1975). Forensische Psychologie. Stuttgart: Kohlhammer.

Lipmann, O. (1905). Reformvorschläge zur Zeugenvernehmung vom Standpunkte des Psychologen. Archiv für Kriminal-Anthropologie und Kriminalistik, 20, 68-81.

Lipmann, O. (1925). Gundzüge der Psychologie für Juristen. Leipzig: Barth.

Lipmann, O. (1935). Methoden der Aussagepsychologie. In E. Abderhalden (ed.), Handbuch der biologischen Arbeitsmethoden. Abteilung VI, Teil C, II, 2, Band 3. Berlin: Urban and Schwarzenberg.

Lipmann, O. & Plaut, P. (eds.) (1927). Die Lüge. Leipzig: Barth.

Loftus, E.F. (1979). Eyewitness testimony. Cambridge, MA: Harvard University Press.

Loh, W.D. (1981). Psycholegal research: past and present. Michigan Law Review, 79, 659-707.

Marbe, K. (1913). Gundzüge der Forensischen Psychologie. München: Beck.

Marshall, J. (1980). Psychology and Law in Conflict. Indianapolis, IN: Bobbs-Merrill.

Marston, W.M. (1924). Studies in testimony. Journal of Criminal Law and Criminology, 15, 5-31.

McCormick, C.T. (1927). Deception-tests and the law of evidence. California Law Review, 15, 484-504.

Mittermaier, C.J.A. (1834). Die Lehre vom Beweise im deutschen Strafprozesse. Darmstadt: Heyer.

Mittermaier, W. (1912). Notwendigkeit und Durchführbarkeit psychologischer Schulung der Juristen auf der Universität. Recht und Wirtschaft, 1, 340-343.

Monahan, J. & Loftus, E.R. (1982). The psychology of law. Annual Review of Psychology, 33, 441-475.

Mönkemöller, O. (1930). Psychologie und Psychopathologie der Aussage. Heidelberg: Winter.

Moore, C.C. (1907). Yellow psychology. Law Notes, 11, 125-127.

Münsterberg, H. (1908). On the witness stand. New York: Doubleday, Page.

Murphy, G. & Kovach, J.K. (1972). Historical Introduction to Modern Psychology. New York: Harcourt, Brace, Jovanovich.

Muscio, B. (1916). The influence of the form of a question. British Journal of Psychology, 8, 351-389.

Oerstett, J.H. (1822). Über das Nothrecht als ein einflussreiches Prinzip der Stafrechtspflege. Neues Archiv des Criminalrechts, 5, 625-677.

Oppenheim, R. (1906). Über die Erziehbarkeit der Aussage bei Schulkindern. In L.W. Stern (ed.), Beiträge zur Psychologie der Aussage. Volume 2. Leipzig: Barth.

Plaut, P. (1931). Der Zeuge und seine Aussage im Strafprozess. Leipzig: Thieme.

Radbruch, G. (1906). Ein neuer Versuch zur Psychologie der Zeugenaussage. Archiv für Kriminal-Anthropologie und Kriminalistik, 23, 329-333.

Reichel, H. (1910). Über Forensische Psychologie. München: Beck.

Rouke, F.L. (1957). Psychological research on problems of testimony. Journal of Social Issues, 13(2), 50-59.

Schneickert, H. (1904). Die Zeugenvernehmung im Lichte der Strafprozessreform. In L.W. Stern (ed.), Beiträge zur Psychologie der Aussage. Volume 1. Leipzig:

Barth.
Schneickert, H. (1906). Aus den Beratungen der Kommission für die Reform des Stafprozesses. Archiv für Kriminal-Anthropologie und Kriminalistik, 24, 117-124.
Schrenk, J. (1922). Einführung in die Psychologie der Aussage. Leipzig: Quelle & Meyer.
Schrenk-Notzing, A. (1897). Über Suggestion und Erinnerungsfälschung im Berchtold-Process. Zeitschrift für Hypnotismus, 5, 118-179, 277-306, 307-331.
Slesinger, D. & Pilpel, E.M. (1929). Legal psychology. Psychological Bulletin, 26, 677-692.
Sporer, S.L. (1981). Toward a Comprehensive History of Legal Psychology. Paper presented to the Annual Convention of the American Psychological Association, Los Angeles.
Stern, L.W. (1902). Zur Psychologie der Aussage. Zeitschrift für die gesamte Strafrechtswissenschaft, 22, 315-370.
Stern, L.W. (1903-1906). Beiträge zur Psychologie der Aussage. 2 volumes. Leipzig: Barth.
Stern, L.W. (1905). Leitsätze über die Bedeutung der Aussagepsychologie für das gerichtliche Verfahren. In L.W. Stern (ed.), Beiträge zur Psychologie der Aussage. Volume 2. Leipzig: Barth.
Stern, L.W. (1908). Sammelbericht über Psychologie der Aussage. Zeitschrift für angewandte Psychologie, 1, 429-450.
Stern, L.W. (1911). Bibliographie zur Psychologie der Aussage. Zeitschrift für angewandte Psychologie, 4, 378-381.
Stern, L.W. (1913a). Psychologie der Aussage 1911-1913. Zeitschrift für angewandte Psychologie, 7, 577-596.
Stern, L.W. (1913b). Die Psychologie und die Vorbildung der Juristen. Zeitschrift für angewandte Psychologie, 7, 70-94.
Stern, L.W. (1926). Jugendliche Zeugen in Sittlichkeitsprozessen. Leipzig: Quelle & Meyer.
Stern, L.W. (1930). Über psychologische Zeugenbegutachtung. Deutsche Medizinische Wochenschrift, 56, 1467-1470.
Stern, L.W. (1939). The psychology of testimony. Journal of Abnormal and Social Psychology, 34, 3-20.
Stöhr, A. (1911). Psychologie der Aussage. Berlin: Puttkammer & Mühlbrecht.
Tapp, J.L. (1980). Psychological and policy perspectives on the law: reflections on a decade. Journal of Social Issues, 36(2), 165-192.
Undeutsch, U. (1954). Die Entwicklung der gerichtspsychologischen Gutachtertätigkeit. Göttingen: Hogrefe.
Undeutsch, U. (1967). Beurteilung der Glaubhaftigkeit der Aussage. In U. Undeutsch (ed.), Handbuch der Psychologie. Band 11. Forensische Psychologie. Göttingen: Hogrefe.
Varendonck, J. (1911/12). Les temoignages d'enfants dans un proces retentissant. Archives de psychologie, 11, 129-171.
Varendonck, J. (1914). La psychologie du temoignage. Gand: Maison d'éditions et d'impressions.
Vieweg, J. (1921). Die Stufen der geistigen Entwickelung. Zeitschrift für angewandte Psychologie, 18, 251-306.
von Liszt, F. (1902). Strafrecht und Psychologie. Deutsche Juristenzeitung, 7, 16-18.
Watson, R.I. (1978). The Great Psychologists. Philadelphia, PA: Lippincott.

Wegener, H. (1981). Einführung in die Forensische Psychologie. Darmstadt: Wissenschaftliche Buchgesellschaft.

Wells, G.L. (1980). Eyewitness behavior: the Alberta Conference. Law and Human Behavior, 4, 237-242.

Whipple, G.M. (1909). The observer as reporter: a survey of the 'psychology of testimony'. Psychological Bulletin, 6, 153-170.

Whipple, G.M. (1910). Recent literature on the psychology of testimony. Psychological Bulletin, 7, 365-368.

Whipple, G.M. (1911). Psychology of testimony. Psychological Bulletin, 8, 307-309.

Whipple, G.M. (1912). Psychology of testimony and report. Psychological Bulletin, 9, 264-269.

Whipple, G.M. (1913). Psychology of testimony and report. Psychological Bulletin, 10, 264-268.

Whipple, G.M. (1914). Psychology of testimony and report. Psychological Bulletin, 11, 245-250.

Whipple, G.M. (1915). Psychology of testimony. Psychological Bulletin, 12, 221-224.

Whipple, G.M. (1917). Psychology of testimony. Psychological Bulletin, 14, 234-236.

Wigmore, J. (1909). Professor Münsterberg and the psychology of testimony. Illinois Law Review, 3, 399-445.

Wolf, T.H. (1973). Alfred Binet. Chicago, IL: University of Chicago Press.

Wreschner, A. (1903). Zur Psychologie der Aussage. Archiv für die gesamte Psychologie, 1, 148-183.

Yarmey, A.D. (1979). The Psychology of Eyewitness Testimony. New York: Free Press.

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