“With a Smile through Tears”: The Uprooted Career of the Man behind Gerstmann Syndrome

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Abstract

Austrian neuroscientist Josef Gerstmann, well-known for describing Gerstmann syndrome and for pioneering works on tactile agnosia, also co-described the familial prion disorder later known as Gerstmann-Sträussler-Scheinker disease. In 1938, Nazi Germany annexed Austria and the three-time decorated war veteran Gerstmann was dismissed from his professorship and directorship in Vienna because of his religion. In 1942 he unknowingly had his doctorate stripped, only to have it returned in 1955. The Gerstmann properties were seized in Vienna, resulting in a bitter post-war reclamation battle. Gerstmann immigrated to the US quickly after the annexation and had some success in exile, but never again directed a hospital. He maintained a private practice throughout his exile, and in the 1940s had some research and consulting positions in New York. More than 75 years after Austria's annexation, many questions remain unanswered about Gerstmann's forced exile and the impact on his life and career of becoming a refugee.

Key Words: Gerstmann, Sträussler, Scheinker Disease; Gerstmann syndrome; Prion disease; Nazi Europe; Austrian refugees

Introduction

Prior to 1938, Vienna was a neuroscience¹ capital of the world, with the University of Vienna Neurology and Psychiatry Clinic and the Vienna Neurological Institute producing generations of neurology, neuropsychiatry, neuroradiology, and neuropathology founding fathers (Hoff and Seitelberger, 1952). One such Austrian neuroscientist pupil who became a progenitor himself and had a significant local and global impact was the Jewish neurologist and psychiatrist Josef Gerstmann (1887-1969) (Figure 1). Despite a recent brief biography (Triarhou, 2008), and other historical appraisals of the Gerstmann syndrome specifically (Lebrun, 2005; Benton and Meyers, 1956; Benton, 1961, 1977, 1992; Rusconi et al, 2010), there has been no comprehensive description or analysis in the neuroscience literature of the impact on Gerstmann of the tragic March 1938 forced annexation (*Anschluss*) of Austria to Hitler's Germany, at least to our knowledge.

Several key questions remained for us regarding Gerstmann's life and career leading up to and after the Nazification of his beloved Vienna: 1) Did Gerstmann experience anti-Semitism in his career prior to 1938?; 2) Why did Gerstmann and his wife wait until 1938 to leave Vienna, while some neuroscientists left earlier?; 3) How did the Gerstmans escape and did they have any assistance in emigrating?; 4) How did the Gerstmans end up in New York, and did they encounter any further persecution after immigrating there?; 5) Was Gerstmann as successful post-emigration as before the *Anschluss*?; and 6) Did Gerstmann harbor any rancor toward Austria for his exile, and did he ever receive an apology or compensation for his strife? In this article we will briefly delineate Gerstmann's biography and history leading up to 1938, before

¹ The term neuroscience is a more modern term used here for expediency to describe the combination of neuropathologists, clinical neurologists, and neuropsychiatrists discussed in this paper.

discussing and analyzing his interrupted life and fractured career in the context of Nazi physician persecution and mass emigration following the *Anschluss*. (Table 1) To attempt to answer our questions, we researched primary documents in German and English from the University of Vienna Archives, the Manuscript collection of the Medical University of Vienna, Vienna Municipal and Austrian State Archives, Documentation Archive of Austrian Resistance, US National Archives, Columbia University Health Library Archive files, and primary and secondary publications by or about Gerstmann.

Gerstmann's early years and decorated performance in The Great War

Gerstmann was born in Lemberg, Galicia,² and after graduating from the German Gymnasium (high school) there³ he first became a law student and Zionist, who believed in and wrote a small book about the importance of educating Jewish immigrants to Palestine⁴ before he was 20.⁵ Instead of continuing law school, however, he enrolled at the Vienna University Medical School in 1907, obtaining his medical degree in 1912. Already as a student he worked in the Neuropsychiatry Department under Professor Julius Wagner-Jauregg (1857-1940) as well as in the University Neurological (research) Institute under Professor Heinrich Obersteiner (1847–1922) (Gerstmann file). After studying neuropathology in Obersteiner's institute, he knew neurology would be his exclusive career focus (MG File 3289). With Obersteiner's recommendation (MG File 3289), from 1912-14 Gerstmann became an “aspirant and second

² Part of the Austro-Hungarian Empire until 1918, then Lwów, Poland until 1939, followed by Lviv, Ukraine after World War II and to the current day.

³ Personalakt Josef Gerstmann (Personnel file), Archiv der Universität Wien, Bestand Senat S304, Sign./Inv. 345, Fol. 4 (Henceforth this reference will be cited in text as “Gerstmann file”)

⁴ Present day State of Israel

⁵ Gerstmann M. Gerstmann, Josef (1887-1969) – Typed biography. Excerpts from the biography of Josef Gerstmann, written by Mrs. Martha Gerstmann under the title “Old Vienna - With a Smile Through Tears”. 1-20. Manuscript collection of the Medical University of Vienna, File 3289. (Henceforth this reference will be cited in text as “MG File 3289”)

assistant” in neuropsychiatry under Wagner-Jauregg, publishing his first paper in 1913 on *Zur Frage der sympathischen Gehirnbahnen* (The question of sympathetic brain pathways), followed by a second in 1914, *Beitrag zur Kenntnis der Entwicklungsstörungen in der Hirnrinde bei Genuiner Epilepsie, Idiotie, Juveniler Paralyse, und Dementia Praecox* (Contribution to the knowledge of developmental disorders of the cerebral cortex in genuine epilepsy, idiocy, juvenile paralysis, and dementia praecox [schizophrenia]) (Gerstmann file). But his career was interrupted by World War I, during which he became a thrice-decorated veteran.

Gerstmann served in the Dolomites of the South Tyrol mountain range,⁶ facing not only attacks by Italian soldiers but the constant threat of storms and avalanches. He climbed the high Alps with medical corpsmen looking for wounded or trapped soldiers. For his bravery, Gerstmann was first awarded *Das goldene Verdienstkreuz mit der Krone am Bande der Tapferkeit* (the Golden Merit Cross for Highest Valor). His second award was the *Grosse Goldene Medaille* (Great Golden Medal), the highest award a soldier could receive in the war zone. The third award was *Das goldene Verdienstkreuz mit der Krone für besondere Tapferkeit im Angesicht des Feindes* (the Golden Merit Cross for exceptional bravery in the face of the enemy) (MG File 3289). He later became head of the Hospital for War Neuroses at the New University in Innsbruck in 1917. Gerstmann wrote a paper on hypoxic brain injuries in avalanche-injured soldiers, and his then-girlfriend Martha Stein (1896-1981) typed it. Martha, originally from Pilsen, Bohemia, was a nurses’ aide, then became a dedicated and devoted wife who typed and organized all of Gerstmann’s papers (MG File 3289). The two had been introduced by a female physician, Dr. Lanes, who referred to Gerstmann as “young, good-looking and brilliant...[but with] absolutely no interest in his life other than his work” (MG File 3289, p. 3).

⁶ It is unclear if Gerstmann volunteered for this assignment given his love of mountaineering, or if his experiences during the war led to his love of mountain climbing later in life.

Gerstmann began work again in the Wagner-Jauregg clinic immediately after returning from the war in winter 1918, and though his immediate task was differentiating returning veterans with actual disabilities from war neurotics seeking disability status, he became wholly immersed in studies on malaria treatment for neurosyphilis. Many of the early dates between Martha and Josef involved discussion of the progress of the malaria treatments at her home, and the two lived separately. Gerstmann lived in the sparse and primitive conditions of the neurology clinic, so that he would be able to tend to the patients at all hours, sharing the bathrooms with eight other doctors. He also collaborated with neurologist Paul Schilder (1886-1940; described Schilder's disease or encephalitis periaxialis diffusa) on the residual neurologic effects of Spanish influenza, with Martha helping type 10 papers on the subject. Josef and Martha eventually married in 1920,⁷ when they attended the First International Congress of Natural Scientists in Bad Neuheim, Germany. Gerstmann's malaria treatment papers at this conference were very successful, and he was consulted by neurologists from all over Europe for advice for the rest of the meeting (MG File 3289).

The 1920s and Gerstmann's rise to prominence despite anti-Semitism

Gerstmann's relative success was exceptional amidst a Viennese climate not favorable to the progress of Jewish physicians in academia. In the 16th and 17th century, the Jewish doctor in Austro-Germany was vilified as an outsider, not grounded in theory because he lacked a university education (Efron, 2001). But by the end of the 19th century, Jewish doctors were university trained, and were then targeted specifically because of their increasing prevalence in Austro-German medicine. The military and the civil service were closed to Jews, but there was no restriction on medical school entrance, and medicine was seen as a means to financial security

⁷ They had no children.

and more importantly, elevated social status (Efron, 2001). But in Austria, Eastern European Jews from Galicia and Hungary (provincial Austro-Hungarian Empire) were met with considerable hostility by nationalist students at the Vienna University Medical School, especially given the intensely competitive nature of medical school admissions. After time, as more Jews entered medicine, aspirations changed from becoming simply a doctor, to also becoming a more prestigious university professor. However, academic appointments were civil service positions and basically off limits to Jews due to anti-Semitism. If Jews received any academic appointment, they largely remained unsalaried lecturers and had to rely on a private practice or on their families for financial support (Efron, 2001).

By 1923, with some exceptions in the Medical Faculty, many talented Jews were clandestinely excluded from teaching careers, because of an unwritten rule denying them habilitation⁸ (Haag, 1996). Many prominent senior faculty members at the University of Vienna were members of the secret *Deutsche Gemeinschaft*, an organization that circulated lists of Jewish and other ideologically-unacceptable faculty in an attempt to thwart their careers (Haag, 1996). Illustrative of this ubiquitous medical anti-Semitism seething beneath the surface of daily interactions, prominent Austrian neuroscientist and Nobel prize-winner Wagner-Jauregg wrote of Johann Paul Karplus (1866-1936), a Jewish neuroscientist, that “Karplus is a Semite, but neither his appearance nor his demeanor gives this away...” (Wagner-Jauregg, 1918, pp. 396-397). Gerstmann’s story illustrates many of the above points, although Wagner-Jauregg’s involvement in his story was far from black and white.

⁸ European tradition in which the postdoctoral candidate completed a thesis to attain the highest academic qualification.

Early in 1922, Gerstmann received his habilitation from the medical faculty of the University of Vienna, though he had already become lecturer in psychiatry and neurology in 1921, and was promoted to *Ausserplanmässiger* (Extraordinary) Professor⁹ by 1929 (Gerstmann file). Though he published on a variety of topics, including his comprehensive 1925 monograph on malarial treatment for neurosyphilis (Gerstmann, 1925), one of Gerstmann's earliest publications was a 1918 paper on *Reine taktile Agnosie* (Pure tactile agnosia), in which he described an infantryman with a right parietal gunshot wound and middle post-central and adjacent supramarginal gyrus damage, who had contralateral pure tactile agnosia despite intact primary sensory modalities, stereognosis, and morphognosis. He hypothesized that the etiology was impairment of connections between the cortex and the association cortex (Gerstmann, 1918). Gerstmann appears to have been adept at recognizing seemingly pure parietal syndromes, which may explain his later series of papers between 1924 and 1932 (Gerstmann, 1924; Gerstmann, 1927; Gerstmann, 1930; Gerstmann, 1931-1932) describing the effects of damage to the dominant angular gyrus, the eponymic Gerstmann syndrome, consisting of contralateral agraphia and acalculia, along with right-left confusion (for patient and examiner, but not extracorporeal space), and finger agnosia, in a patient with normal speech, vision, and primary sensory modalities (Lebrun, 2005). His description of this syndrome only seemed to bolster an already blossoming career and reputation.

Gerstmann's lectures in the neurology clinic, in which an actual patient was brought to the lecture hall to be examined, were well attended by students, including many visiting Americans. In one of these lectures, Gerstmann ironically hypnotized later brief psychic advisor to Adolf

⁹ Not an *ordinarius*, or full professor. This lack of promotion to the highest rank was typical of German academic anti-Semitism.

Hitler, Erik Jan Hanussen (1889-1933), who advised the Nazi leader “when he should make this move or that” (MG File 3289, p. 6).

Gerstmann was a dedicated assistant to Wagner-Jauregg and knew him personally, to the point that Wagner-Jauregg even took Martha Gerstmann out for her birthday annually, which was on the same day as Wagner-Jauregg’s. Also, after attending the circus with the Gerstmanns, Wagner-Jauregg encouraged Gerstmann to take his wife to Rome for tourism, under the premise of Gerstmann seeing some of his former patients in Rome. After receiving the 1927 Nobel Prize, Wagner-Jauregg gave Gerstmann’s malarial treatment book to the King of Sweden, indicating his confidence in his assistant Gerstmann. Wagner-Jauregg also discussed with him his internal debate between choosing Otto Pötzl (1877-1962) or Constantin von Economo (1876-1931) as his possible successor at the University Clinic. As Wagner-Jauregg’s first assistant, Gerstmann was actually put in charge of the Neurology Department at the clinic in 1923 (Figure 2), although the direction of the sub-departments at the clinic was informal and would switch from one year to the next; e.g., Schilder and Gerstmann would alternate years heading the Neurology or the Psychiatry Departments (MG File 3289). Indeed for several months in the transition period between Wagner-Jauregg’s retirement in 1928 and Pötzl succeeding, Gerstmann was the *de facto* head of the entire Neurology and Psychiatry Clinic (Klemperer, 1970). Pötzl also appointed Gerstmann his first assistant, although there were questions about whether Pötzl would do so (MG File 3289).

In the late 1920s, Gerstmann’s local and international reputation soared, especially after many foreign neuroscientists traveled to Vienna to study malarial treatment for neurosyphilis. He received many job offers from America, including from Frederick Tilney (1875-1938), Chairman of Neurology at the New York Neurological Institute, who had taken a malaria treatment course

with Gerstmann, though “Joe never gave this offer any consideration at all” (MG File 3289, p. 7). Ironically, Gerstmann would take a position there in the 1940s, after his forced exile from Austria.

Gerstmann was also very productive in the late 1920s, working simultaneously on multiple projects alone and in collaboration with Schilder and others (Klemperer, 1970). But while he was academically successful, post-war Austrian inflation was severe and Gerstmann’s salary barely kept him and his wife afloat. Luckily the University of Vienna faculty received food packages from New York City arranged by the sympathetic Nicholas Murray Butler (1862-1947), President of Columbia University, who had visited Vienna (MG File 3289). And foreign currency paying international patients admitted to the neurology clinic for malarial treatments also helped the clinic financially. Additionally, Gerstmann had an external private clinic and saw patients from all over the world. Interestingly, in the late 1920s Gerstmann caused a sensation in Viennese psychoanalytical circles because of the following remark on rounds, when explaining the organic causes of one patient’s neurosis: “If this case had gotten into the hands of a psychoanalyst, not trained in Neurology, he would have only treated the neurosis, and that perhaps endlessly, to the total neglect of the organic disease of the patient” (MG File 3289, p. 17).

This remark led to a great misunderstanding and belief that Gerstmann was opposed to psychoanalysis, which followed him for the rest of his career, much to his chagrin. Actually he merely believed that many patients with organic brain diseases develop neuroses, and that all psychiatrists should have an excellent knowledge of neuropathology gleaned from studying autopsies, not just textbooks (MG File 3289). Wagner-Jauregg and Gerstmann both admired and

respected psychoanalysis founder¹⁰ Sigmund Freud (1856-1939) as “a very creative and outstanding physician” (MG File 3289, p. 17); in fact, Freud’s daughter Anna was the only non-medical doctor to ever be allowed to make rounds at the Neurology Clinic with Gerstmann or Schilder (MG File 3289). To the end, Gerstmann believed that psychiatry and neurology should not be separated in hospitals “because there is a definite borderline wherein both operate” (MG File 3289, p. 17).

But consistent with the times, Gerstmann was stung by anti-Semitism, which limited his career options to some extent. In 1928 Prof. Lindner¹¹ was the only one who voted against Gerstmann’s promotion to Professor. Lindner, “who was well-known for his anti-Semitism,” said Gerstmann was “money-minded” (MG File 3289, p. 15) and accepted private patients from the Wiener Kaufmannschaft Hospital to the University Clinic, which was forbidden. Gerstmann’s promotion was delayed, but his wife had a letter proving that he had actually rejected the transfer of the private patients, and she showed this to Wagner-Jauregg. Gerstmann’s professorship was approved the next fall. Martha Gerstmann didn’t tell her husband about this scandal until much later, and he was astonished that it had actually occurred (MG File 3289).

Additionally Wagner-Jauregg told Martha that her husband would have been made Chair of Neurology at Prague’s German University if he weren’t Jewish, given that he was the best qualified for it, that they should look at America or Edinburgh for a university chair, and that he could help in the process. But Wagner-Jauregg and Martha knew that Gerstmann didn’t want to leave Vienna because of the exceptional neuropsychiatric clinical, pathological, and radiological

¹⁰ Wagner-Jauregg actually believed that French psychiatrist Pierre Janet (1859-1947) was the founder of psychoanalysis, not Freud (MG File 3289).

¹¹ Although Martha Gerstmann did not mention a first name in the biography, we believe this was Karl Lindner (1883-1961), the famed Viennese ophthalmologist and Professor and Head of the University of Vienna Ophthalmology Clinic from 1928-1953 (Von Sallmann, 1961).

resources located there. Wagner-Jauregg stated: “I’m not so sure he would be happy in America; he is totally absorbed in his work, and not inclined to compromise with anyone” (MG File 3289, p. 16). In the efficient Viennese system, Gerstmann had colleagues with whom he could easily discuss clinical cases and research, and who were all on the same high-functioning level.

Gerstmann was not only present at his patients’ operations, but directing them. He also always had X-rays or autopsy photographs easily at hand whenever he needed to study them.

International patients came to him for treatment, and other neuroscientists came to him from all over the world to train; professionally-speaking, though he was denied a university chair, he did not feel justified in leaving (MG File 3289).

Illustrative of the clinical-neuropathological collaborative network in Vienna, as early as the 1920s Gerstmann spent time in the University Clinic Neuropathology laboratory with Ernst Sträussler (1872–1959) (MG File 3289), referred to in an 85th birthday tribute as “the Nestor of Austrian neuropathology” (Seitelberger, 1957). Sträussler was renowned for the brain cutting techniques he had perfected and for photographing slides for teaching purposes (MG File 3289). In 1931 Gerstmann collaborated with Sträussler on a paper comparing the clinical and pathological findings in encephalomyelitis and multiple sclerosis (MS) (Gerstmann and Sträussler, 1931).

Gerstmann’s career peaks and a syndrome is described amidst the rise of National Socialism

In 1930, Gerstmann succeeded the late Emil Redlich (1866-1930) as Director of the Viennese Rothschild-funded *Nervenheilanstalt Maria-Theresia-Schlössel* (MTS Neurological Institute), a position he would hold until 1938 (Klemperer, 1970). Whether Gerstmann was surprised to receive the MTS Directorship given anti-Semitic sentiment in Vienna is unknown but still an

interesting question, given that his best friend, Paul Schilder, expressed early opposition against discrimination of Jewish colleagues under Wagner-Jauregg, and was demoted to an unpaid position and left out from promotions for open positions (Hubenstorf, 1984). Schilder immigrated to the US and from 1930 onward worked as Clinical Director at Bellevue Hospital and Research Professor of Psychiatry at New York University Medical Center (Hubenstorf, 1984). On the other hand, Gerstmann's other Jewish-Austrian neuroscientist colleague, Otto Marburg (1874-1948; Marburg variant acute multiple sclerosis) had been appointed Obersteiner's successor as Viennese Neurological Institute Director in 1919 (Triarhou, 2008). Per Martha Gerstmann, Wagner-Jauregg actually secured the MTS Directorship for her husband, as Jauregg was on the Rothschild board (and maintained a private practice), even though he had retired from academia (MG File 3289).

Gerstmann enjoyed his position at the MTS. He was independent, had little red tape to stifle physician appointments, and could hire whom he pleased. The institute was well-funded and planned by the Rothschild foundation. It never ran a deficit, all of his staffing and funding requests were handled without delay, and there were also good staff and good food. During his eight-year MTS tenure, Gerstmann acquired even more recognition and prestige (MG File 3289).

-At the MTS, Gerstmann taught students who would later become famous, including neuropsychiatrist Viktor Frankl (1905-1997; author of *Man's Search for Meaning*), who spent two years at the MTS under Gerstmann and learned his neurology from him (Frankl, 1997). Ilya Mark Scheinker (1902-1954) was a resident from 1930-32 then an assistant professor at the MTS under Gerstmann, heading the Neuropathology Laboratory from 1932-37.¹² Fritz Kobler (1911-

¹² Charles D. Aring Papers, Henry R. Winkler Center for the History of the Health Professions, University of Cincinnati Medical School.

2001), later clinical director of the Springfield (state mental) Hospital in Maryland, was an intern and resident in neuropsychiatry at the MTS from 1936-38 (Strauss et al, 1983).

Gerstmann was a member of the *Gesellschaft der Ärzte in Wien* (Viennese Medical Society) and the *Verein für Psychiatrie und Neurologie Wien* (Viennese Association for Psychiatry and Neurology) (Schuder, 1970). Interestingly, he became a board member of the *Verein* from 1934-38 when pro-nationalist, pro-eugenic, Vice-President Pötzl resigned in protest of the shifting polarity of the group (Hubenstorf, 2002). On 18 June 1935 Gerstmann, Sträussler, and Scheinker presented to the *Verein* the case of a 25 year-old female from a lower Austrian family who had originally presented in 1926 with a profound cerebellar disorder and psychotic symptoms (Gerstmann, Sträussler, and Scheinker, 1936). Gerstmann had previously published about the case in 1928 (Gerstmann, 1928). This patient expired in 1932, and her neuropathological exam revealed profound cerebellar atrophy with molecular layer “senile” plaques, along with cerebral cortex atrophy with atypical ganglion cells. Their report and paper were published in 1936 in the *Zeitschrift für die gesamte Neurologie und Psychiatrie* (Comprehensive Journal of Neurology and Psychiatry) (Gerstmann, Sträussler, and Scheinker, 1936). The disorder was thought to be autosomal dominant, as the patient had come from three generations of family members with similar symptoms (Gerstmann, Sträussler, and Scheinker, 1936). Another member of the same family had actually been presented clinically in 1912 and diagnosed with a hereditary spinocerebellar ataxia (Budka, 2007), but the clinical-pathological correlation had not been demonstrated before 1935.

By 1990 Gerstmann-Sträussler-Scheinker disease (GSS) was classified as an inherited prion disorder (Hsiao and Prusiner, 1990), but was noted to be similar clinically and neuropathologically to kuru as early as 1962. Likely because the original GSS family members

became lost to follow-up and were misdiagnosed with tabes dorsalis in some instances, the discovery of the transmissibility of GSS and its similarity to Creutzfeldt-Jakob disease led to a delay in classifying it as a transmissible spongiform encephalopathy (TSE) until 1981 (Budka, 2007). The responsible PRNP (prion protein (PrP) gene) codon 102 mutation was discovered in 1989 (the first genetic mutation to be discovered in a TSE), and GSS was noted to have two major forms (a more common primarily ataxic form, and a less common primarily dementing form) (Hsiao and Prusiner, 1990).

“The future could only be dark”: the Anschluss and Gerstmann’s flight from Vienna

In 1923 a German nationalist student group conducted a “search for Jews” in the *Anatomisches Institut* (Anatomical Institute) at the University of Vienna, marking the first physical violence against Jews at the medical school. Ten years later, in 1933, the *Verein Deutscher Mediziner* (German Doctors Association) renewed 1919 calls for a *numerus clausus* (quota) for Jewish students. By 1933, students in the *Deutsche Studentenschaft* (German (nationalist) student society) demanded boycotts of Jewish professors at the University (Hubenstorf, 1984). Thus, in the 1930s, the University of Vienna had “become virtually an enclave of the Third Reich,” while many Austrian intellectuals disregarded daily evidence of Nazi violence (Haag, 1996, p. 31). Only few neuroscientists, such as Paul Schilder, emigrated prior to 1938. In 1934 Gerstmann’s Viennese internist friend, Dr. Alfred Luger (1886-1938), sent an unsigned postcard (to evade Nazi censors) from a meeting in Germany with a quote from German author Heine: “When I think of Germany at night I cannot sleep” (MG File 3289, p. 15). Martha said retrospectively that they should have seen what was coming if they were “particularly sensitized to the indications” (MG File 3289, p. 15). But with the MTS situation as good as it was, emigration

likely seemed much less enticing than dealing with Viennese anti-Semitism. If Gerstmann left Vienna, according to his wife, he thought he wouldn't have enough years left in his life to establish a similar situation elsewhere (MG File 3289).

The Gerstmanns heard stories of at least two Jewish doctors not getting promoted throughout the 1930s, and a milder “annoyance and harassment”-type of anti-Semitism escalated to actual physical violence (MG File 3289, p. 18). A Dutch newspaper wanted Luger and Gerstmann to complete a psychiatric assessment of Hitler, but Martha ripped up the request letter, asking both if they were foolish, and they merely laughed at her vehemence. On 9 March 1938 the Gerstmanns were reminded by Dr. Heinrich von Neumann (1873-1939)¹³ to go to the *Kultusgemeinde* (Jewish Community) and offer financial support for a relief fund for dissatisfied groups and workers, so that they wouldn't join the Nazis. Von Neumann offered to sign a pledge for Gerstmann as well, but evidently fortuitously forgot to do so and only signed one for himself. Neumann and others were arrested immediately after the *Anschluss* for doing this (but Neumann was released after two days since the Prince of Wales was his patient, and Edward, the Duke of Windsor, interceded on Neumann's behalf) (MG File 3289).

Before the *Anschluss*, Gerstmann saw brain injury patients for prominent Viennese lawyer Arthur Seyss-Inquart (1892-1946),¹⁴ Nazi Chancellor of Austria after the *Anschluss* and

¹³ Heinrich von Neumann was an otorhinolaryngologist renowned worldwide for his techniques, and was Director of the Viennese Ear, Nose, and Throat Clinic prior to the *Anschluss*: Anonymous (1940/41). *Necrologia*: Heinrich von Neumann. ORL 3:61–63. According to Time magazine articles on 14 Nov 1938 and 17 June 1966, von Neumann was an orthodox Jew who refused to treat Hitler earlier in the 1930s, then ironically acted as Hitler's de facto emissary at the infamous 1938 Evian Conference in Switzerland, in which the Nazis offered 40,000 Viennese Jews at \$250/head to any country that would take them.

¹⁴ Seyss-Inquart was involved in planning Jewish deportations from the Netherlands to concentration camps in the East, and for murderous reprisals against the Dutch resistance. For his crimes against peace and humanity, and war crimes, Seyss-Inquart was later hanged at Nuremberg (US Holocaust Museum website, available from: <http://www.ushmm.org/wlc/en/article.php?ModuleId=10007127>, last accessed 12/29/13).

subsequently of Nazi-occupied Holland. When just before the *Anschluss* Seyss-Inquart called asking about a report on one of his clients, Martha told him the report was in the mail and Seyss-Inquart said to send the bill and it would be paid in German marks from Germany. Martha consulted a Jewish lawyer who advised the Gerstmanns not to send the bill (even though this was before the *Anschluss*, Seyss-Inquart obviously knew of the impending events) (MG File 3289).

On 13 March 1938, “Friday the 13th”, the *Anschluss* of Austria to Nazi Germany was legalized, though German Army (*Wehrmacht*) troops had already entered Austria on Hitler’s order on 12 March (MG File 3289, p. 20). The next morning (14 March), Gerstmann went to the MTS as usual for rounds and was saluted with “Heil Hitler” by each of the employees. He received helpful pledges from an MTS hydro-therapist, who was a known Nazi sympathizer, and from the physician-head of the Nazi “Döbling”¹⁵ Doctor’s Society, that they could help him if he ran into “difficulties” --- thus he was reassured. But Martha only became more apprehensive; though her husband still had some respect in Vienna, the future was ominous given “it was obvious that the reorganization of all the medical facilities in Vienna was already in effect, and for us the future could only be dark” (MG File 3289, p. 20).

In these dark days after the *Anschluss*, Wagner-Jauregg (age 80 at the time) almost daily admitted patients to the MTS wanted by the Gestapo¹⁶ for religious or political reasons under his own name as the responsible party, thus protecting them and Director Gerstmann from Gestapo accusations of hiding wanted persons. Because of this, Gerstmann did not think Wagner-Jauregg was anti-Semitic, and as stated after the *Anschluss*, he was “one of the very few whose integrity was unflinching” (MG File 3289, p. 8). Additionally, Wagner-Jauregg wrote a letter of support

¹⁵ Döbling is a district of Vienna.

¹⁶ *Geheime Staatspolizei* (Secret state police)

for Gerstmann on 16 April 1938 certifying that Gerstmann was always in good standing and that he had known him professionally since 1912, with a request to allow him to emigrate because he preferred “under the given circumstances” to accept a position in America.¹⁷

Gerstmann’s university habilitation (*venia legendi*) was revoked for “racial reasons,” most likely on 22 April 1938, along with 251 other university professors who lost their positions that day as part of the first and largest Nazi purge following the *Anschluss* (Mühlberger, 1993). Fifty-two professors including Gerstmann (including 22 full professors) were “on leave until further notice” (Mühlberger, 1993), even though he was still listed on the summer semester course list for the medical school for “Introduction to Clinical Psychiatry with practical exercises” and “Neurological syndromes: their pathology and differential diagnosis (with clinical demonstrations)” (Bauer-Merinsky, 1981). Per his obituary, he voluntarily resigned his MTS Directorship, “As a consequence of the political situation in Austria in 1938...” (Klemperer, 1970, p. 7), but the documents were silent on this issue, and remarkably there was no Gerstmann personnel file in the MTS files at the Vienna municipal archive. Regarding his private practice, Gerstmann dissolved it with the Nazi tax authorities officially on 18 May 1938 (Österreichisches Staatsarchiv).

The MTS, originally founded with funds from the Baron Nathaniel Rothschild Foundation in 1914, was taken over as the *Wiener Städtische, nicht öffentliche Heilanstalt Döbling* (Vienna Municipal non-public Institute Döbling) in 1939, and re-named to avoid a connection to the Jewish Rothschild family. Following Gerstmann’s dismissal, the hospital was provisionally directed (from mid-1938 to 1940) by one of his former assistants, Margarete Hübsch (1903-

¹⁷ Österreichisches Staatsarchiv, Akten FLD 13.294, AHF.15.563ABG.1.854, NHF.5.020 und NHF .7.382 aus den Archivbeständen der Finanzlandesdirektion und des Hilfsfonds Herrn Dr. Josef Gerstmann und Frau Martha Gerstmann betreffend. (Henceforth cited in text as “Österreichisches Staatsarchiv”)

1983), before she relocated to the *Wiener Städtische Nervenlinik für Kinder “Am Spiegelgrund”* (Vienna’s Spiegelgrund Neurology and Psychiatry Hospital for children and young adults). She later became involved in the infamous child euthanasia programs, in which nearly 800 neuropsychiatric patients were murdered, though she was acquitted in a post-war trial (Schnaberth, 2010).

Gerstmann and his wife now decided to emigrate quickly, and his close friend, neurologist Paul Schilder in NY, served as their American sponsor.¹⁸ Regarding Schilder, Gerstmann later wrote: “Incidentally, Schilder was my close friend from 1918 to his death; he invited me to come to America and to speak about finger agnosia, and together we published about ten papers” (Gerstmann, 1970, p. 13). The Gerstmans obtained US immigration visas on 25 March 1938 (Passenger list New York), and Gerstmann registered his and his wife’s emigration with the Gestapo, obtaining authorization after declaring that all tax matters were in order and that only taxes for the house were still outstanding (Österreichisches Staatsarchiv). On 5 May 1938, Gerstmann were compelled to pay a *Reichsfluchtsteuer* (Jewish flight tax) of 30.600 RM at the Zentral-Europäische Länderbank in Vienna (Österreichisches Staatsarchiv). After briefly fleeing to London at the end of May 1938 (MG File 3289) where Gerstmann gave an invited lecture (Strauss et al, 1983), the Gerstmans boarded the Cunard White Star Limited *S.S. Aquitania* in Southampton on 8 June 1938, along with fellow neurologist Otto Marburg. They arrived in New York on 14 June 1938. Their race/people was listed as “Hebrew,” nationality “Germany” (reflecting the *Anschluss*), and languages “English, German” (Passenger list New York).

¹⁸ Passenger and Crew Lists of Vessels Arriving at New York, New York, 1897-1957. Microfilm publication serial T715, Year 1938, Microfilm Roll 6167, Line 1, Page 25. Records of the Immigration and Naturalization Service, National Archives, Washington, DC. (Henceforth cited in text as “Passenger list New York”)

In 1942, Gerstmann was required to register for the US “old man’s draft” for World War II, as a man born between 28 April 1877 and 16 February 1897.¹⁹ On 1 September 1943 he became a US citizen,²⁰ but despite his contributions to Austrian neurology and service record from World War I, “Dr. Med. Josef Israel²¹ Gerstmann” and “Martha Sara Gerstmann” had their German nationalities annulled by the Nazi regime on 30 August 1941,²² based on the “Law on withdrawal of naturalization and withdrawal of German citizenship” of 14 July 1933, paragraph two of which stated that all citizens who were abroad demonstrated behavior “against the obligation to loyalty toward the Reich and people and as such acted against German interests” (Posch, 2006, p. 301). On 18 July 1941, the office of *Reichsführer* (Leader) SS Heinrich Himmler, while acknowledging that Gerstmann was now living in the USA, notified the *Reichsminister* for Science and Education, Berlin, that the process to withdraw “Jewish Dr. Med. Josef Israel Gerstmann”’s German citizenship was initiated and requesting to withdraw his MD degree.²³

On 14 July 1942 Gerstmann’s MD was revoked by the Academic Senate of the University of Vienna on the grounds that he had been “expatriated,” along with 15 other Jewish Medical Faculty members. The list of those whose titles had been withdrawn was published in the

¹⁹ US, World War II Draft Registration Cards, 1942. New York, NY, USA: National Archives and Records Administration, Northeast Region.

²⁰ Soundex Index to Petitions for Naturalization filed in Federal, State, and Local Courts located in New York City, 1792-1989. New York, NY, USA: National Archives and Records Administration, Northeast Region.

²¹ Following a 1938 decree (*Einführung kennzeichnender Vornamen*, 17 August 1938) Jews without “typical” Jewish names were forced to adopt the middle names “Israel,” respectively, or “Sarah.” As stated in: Simmer HH: *Der Berliner Pathologe Ludwig Pick (1868–1944)*. Husum: Matthiesen Verlag; 2000.

²² National Archives and Records Administration (NARA); Washington, DC; Name Index of Jews Whose German Nationality Was Annulled by the Nazi Regime (Berlin Documents Center); Record Group: 242, National Archives Collection of Foreign Records Seized, 1675 - 1958; Record Group ARC ID: 569; Publication Number: T355; Roll: 3, Fränkel, Werner – Hartmann, Hermann.

²³ Document 4027, DÖW, Vienna, Austria. Aberkennung der Staatsbürgerschaft und Entzug des Dr-Grades des. Dr. med. Josef Gerstmann. 18. Juli 1941 [Deprivation of citizenship and deprivation of Dr.-degree of Dr. med. Josef Gerstmann. 18th July 1941].

Reichsanzeiger (German Reich Gazette) and was legally binding.²⁴ Approximately 300 doctorates were removed overall, with 240 degrees removed only for “racial reasons”²⁵ (Posch, 2006).

Withdrawal of academic titles was handled in a formal process based on the “Law on the use of academic grades” from 7 June 1939, which allowed degree withdrawal on “*retrospective evidence that the holder was unworthy of the academic grade.*” We don’t know from these documents why Gerstmann’s MD title was selectively removed, while other Jewish medical faculty, including Sträussler and Scheinker, seem to have avoided this fate, but withdrawals were not automatic; they were individual and involved multiple levels of Nazi administration, and the character and intention of the withdrawal was clearly punitive (Posch, 2006).

After the war, the ministry of education decreed in June 1945 that the universities could reinstate titles (but were not required to do so) and the Vienna University administration insisted on receiving individual requests before acting. They made a list and expected 196 requests; therefore it was known who had had their titles withdrawn. Early requests by victims were handled simultaneously with requests for title reinstatement by former Nazis who had lost their titles post-war, but the victims' requests were handled more slowly. By 30 April 1955, only 13 individual victims had been reinstated, and the university senate finally decided to mass-reinstate the remainder without a formal request (Posch, 2006). Gerstmann fell under this latter category, likely not even knowing his doctorate had been formally revoked, and was among 181 victims re-promoted to their former degrees on 13 May 1955, retroactive from the day of de-promotion, “but without formal notification of the concerned persons.”²⁶

²⁴ Gerstmann Josef. Dr-Aberkennung (Doctor Title removal) UA (University of Vienna Archive) RA GZ 118 ex 1941_42 ONr 90.

²⁵ The remainder was a mixture of political enemies and possibly homosexuals.

²⁶ Gerstmann Josef Dr-Wiederverleihung (Doctor Title bestowed again) UA (University of Vienna Archive) RA GZ 561 ex 1944_45 ONr 15_s.

Since those whose degrees were punitively removed were refugees abroad, and a world war was ongoing, their professional access and material existence might or might not have been affected by the degree removal. However, because exiled Jewish academics whose citizenship was withdrawn were now “stateless,” they could experience legal consequences, one of which was “collateral” punishment by seizure of their possessions (including property) and expropriation for the benefit of the Reich (Posch, 2006). Thus, for the Nazis, the financial ramifications from legalized citizenship withdrawal likely reflected an ulterior motive. This ulterior motive is further reflected by the fact that citizenship withdrawal also meant that life insurance policies were voided and any value transferred to the Reich, which happened to Gerstmann’s policy (valued at 5.834 RM) on 27 March 1943. The buy-back value (5.322’63 RM) was transferred to the Reich (*Oberfinanzpräsident Berlin*) via the *Oberfinanzpräsident Wien*. Later a letter was sent from Allgemeine Assekuranz (Gerstmann’s life insurance company in Vienna) to the Austrian *Finanzlandesdirektion* (Regional Finance Authority) on 29 July 1959, refusing to pay compensation to Gerstmann for life insurance on the basis that the insurance was paid to the Reich (under duress, to *Oberfinanzpräsident Vienna* 1943) and that Gerstmann had received payment of \$933.44 in 1950 (Österreichisches Staatsarchiv). The fact that the life insurance company wrote in 1943 that “According to our records, the owner is probably a Jew,” and that we could find no actual request from the *Oberfinanzpräsident Wien*, suggests that the life insurance revocation was not done under duress, but in eager cooperation with the Nazi authorities.

To round out their complete removal from the Ostmark (annexed Austria), and capitalize on their expatriation (despite having properly paid all taxes), on 21 March 1941, the Gestapo seized the Gerstmanns’ property with the following statement: “The entire vertical and horizontal property

and all rights and claims of Dr. Josef Israel Gerstmann...and his wife Martha Sarah, nee Stein...[who were] last residing in Vienna, 1st district, Grillparzerstrasse 11, Mezz. 8...[The residence] is confiscated for reasons of public order and safety with the aim of subsequent confiscation in favor of the German Reich.”²⁷ Another Gerstmann property was seized as well (see below). Thus the Nazis were able to reap financial rewards from his expatriation.

Gerstmann becomes a refugee, still alive but facing many professional and personal difficulties in exile

When Gerstmann arrived in the US, he did not head for NY, where his friend and sponsor Schilder practiced. Instead, he became acting director and consultant at Springfield State Mental Hospital in Maryland from 1938-40 (Strauss et al, 1983). From Sykesville, Maryland, Martha Gerstmann still was required in November, 1938 to send an official declaration form of Jewish properties to the Gestapo as of 27 April 1938 for her and her husband with a handwritten comment that she paid all due taxes before leaving and that the *Reichsfluchtsteuer* (Jewish flight tax) was properly paid in Bavaria (Österreichisches Staatsarchiv).²⁸ Given understaffing and overcrowding at the time, leading to Springfield being called “Maryland’s Shame” (Ebeling, n.d.), it isn’t surprising that Gerstmann left there, and from 1940-41 worked in Washington, DC at St. Elizabeth’s mental institution as a neurological consultant and research associate (Strauss

²⁷ Austrian State Archives (ÖSTA), Archives of the Republic (CoR), Federal Ministry of Finance (BMF) , Property Registration Office (VvSt) , property registration (VA): ZI 60037 Josef Gerstmann: Secret State Police, State Police headquarters in Vienna: seizure order of 21 March 1941.

²⁸ Reparations were made later to JG after they requested such from the Austrian government on 3 October 1961 to recover RM 30.600 for the *Reichsfluchtsteuer*. Gerstmann received a payment of 10.000 Schilling on 5 Dec 1961 and a second payment later to make a total of 10.710 Schilling. It was requested to make the payment quickly given Gerstmann’s advancing age.

et al, 1983). However, in October 1939 Gerstmann was also listed as a volunteer at the Vanderbilt Clinic,²⁹ part of New York-Presbyterian Hospital.³⁰

Gerstmann received his NY medical license in December 1939,³¹ reflecting NY's relatively liberal license-granting process at the time, requiring only an English proficiency exam and passing the state medical licensing exam, along with petitioning for naturalization (and obtaining citizenship within 10 years), compared to most other states which required citizenship or completing an internship prior to licensure. By 1941, NY did require an internship completion, due to the concentration of émigré physicians being so great with fierce competition, but Gerstmann evaded this requirement (Edsall and Putnam, 1941). It was not clear from records how or why Gerstmann had a position and medical license in NY, even though he was practicing in Washington DC, but presumably he was traveling back and forth and eventually planned to relocate to NY.

Also in 1939, Gerstmann attended the annual meeting of the American Psychiatric Association in Chicago, and presented in English his views on the Gerstmann syndrome, indicating to the audience that the syndrome was not rare (Lebrun, 2005). The paper based on this talk was published the following year (Gerstmann, 1940), the first on the Gerstmann syndrome in English.

²⁹ Gerstmann index card, Archives & Special Collections at the Augustus C. Long Health Sciences Library at Columbia University Medical Center.

³⁰ Now part of Columbia University Medical Center

³¹ New York State Education Department Physician License Verification website, page on Josef Gerstmann, license number 037316, issued 12/18/39. Available from: [<http://www.nysed.gov/coms/op001/opsc2a?profcd=60&plicno=037316&namechk=GER>]. Last accessed 10/19/13.

The Gerstmanns settled permanently in NY in 1941. Gerstmann was a research assistant then associate at the New York Neurological Institute from 1941-46,³² as well as a visiting neuropsychiatrist at Goldwater (formerly “Welfare”) Hospital from 1941-48. He was an attending neuropsychiatrist at the New York Postgraduate Hospital outpatient department and on staff in the New York Presbyterian Hospital Neurology Department from 1941-49 (Strauss et al, 1983). Gerstmann had previously been offered (in the 1920s) a position at the New York Neurological Institute by Frederick Tilney, and presumably he was again offered the position in 1941 by then-chairman Tracy Jackson Putnam (1894-1975), the famous American neurologist and co-discoverer of phenytoin treatment for epilepsy. Putnam took a strong interest in the plight of immigrant physicians from Nazi Europe, being Vice-Chairman of the National Committee for Resettlement of Foreign Physicians in New York (Edsall and Putnam, 1941). Putnam also discovered Gerstmann’s former Viennese assistant, Scheinker, and found a position for him in Cincinnati,³³ although the documents are silent on whether Gerstmann had introduced Scheinker to Putnam.

At the request of the US Public Health Service (PHS) and Surgeon General T. Parran, Gerstmann wrote a paper on “The indications for therapeutic malaria in the various forms of neurosyphilis” (Klemperer, 1970), ironic given that the PHS was simultaneously running the infamous Tuskegee syphilis experiment in Alabama (1932-1972), and that penicillin, not malarial treatment, was becoming standardized for syphilis treatment in the 1940s.³⁴ The Surgeon

³² Gerstmann index card, Archives & Special Collections at the Augustus C. Long Health Sciences Library at Columbia University Medical Center.

³³ Joseph P. Evans Files, University of Notre Dame Archives, File CJPE 9/08, Folder Scheinker, Dr. I. Mark, General Correspondence.

³⁴ Tuskegee Syphilis Study website on the Centers for Disease Control webpage. Available from: [<http://www.cdc.gov/tuskegee/timeline.htm>]. Last accessed 12/26/13.

General's request was likely prompted by knowledge of Gerstmann's 1925 monograph on malarial treatment for progressive paralysis (Gerstmann, 1925).

For the US Air Force, Gerstmann wrote a summary on "Psychological and phenomenological aspects of disorders of the body image" (Klemperer, 1970). In May 1942 Gerstmann gave a presentation at the 98th annual American Psychiatric Association meeting in Boston on cases he had examined at the "First Division, Welfare Hospital" of "autosomatamnesia" (dissociation from memory) and "autosomatagnosia" (dissociation from conscious perception of defective body parts) in patients with organic brain lesions, which he believed were more accurate terms than "anosognosia." This paper was published the same year (Gerstmann, 1942).

At some point after the Gerstmans moved to NY, Gerstmann set up a private practice at their residence at 240 Central Park South, which he maintained until the end of his life. Because his wife did not work, and possibly because of the mixed success of his practice at the time, along with presumably little salary from his teaching and research positions, the Gerstmans were likely eager to reclaim income that was rightfully theirs. After the war, the Gerstmans became enmeshed in a three-year battle to reclaim their Viennese property that had been confiscated during the Nazi reign. They initially purchased the "two-story villa with a garden" at Billrothstrasse 58 in Vienna's 19th district in 1932, and put their 18-year former housekeeper Mathilde Uitz in charge of the property when they fled Vienna. Mrs. Uitz loyally managed the property until it too (like their other property, above) was seized by the Gestapo on 2 April 1941, and claimed as property ("Aryanized") of the "Greater German Reich" as of 10 August 1944. Gerstmann wrote initially to the US State Department on 26 October 1944 to inquire about the

property, but nothing could be done at the time. Following the war's end, the property was managed by the Austrian Republic's *Landesfinanzdirektion* (state finance director).³⁵

Gerstmann wrote to the US Consul General in Vienna, Laurence C. Frank, on 20 September 1945, stating that he had heard the property was still intact and that Mrs. Uitz was still in charge of it. Thereafter, this rightfully-owned Gerstmann property was seized by the Property Control Subsection of the US Military Command Headquarters (HQ) in Vienna, while the Gerstmanns were claimants on the property. The Gerstmanns made continuous efforts to get their house back beginning in 1945, highlighting their 1943 US citizenship at the time the property was illegally confiscated by the Nazis. After much back and forth, the house title was returned to the Gerstmanns at the end of 1946, but for over two years they struggled to evict the Austrian People's Party (ÖVP), who had been "installed" in one unit by the Vienna Housing Authority post-war (without a lease agreement) and commandeered an adjacent unit. Eventually, the Federal Chancellor of the Austrian Republic, Dr. Leopold Figl, was requested by HQ to write to the ÖVP, and he ordered them to vacate the property in 1947. But the struggle did not end for the Gerstmanns until 1948, when after visits by Mrs. Gerstmann to Vienna and with the help of their New York attorney, Alfred H. Adler, the ÖVP was finally forced to move.³⁶

Gerstmann's later years and defense of the Gerstmann syndrome

Gerstmann had a three year gap in publishing from 1937-1940, due to his exile and difficulty re-establishing himself in the US. Eventually he published over 100 papers (Schuder, 1970), but only seven were written after the *Anschluss*. In the late 1950s he felt compelled to defend the

³⁵ US National Archives and Records Administration, DN1929, Records of The Property Control Branch Of The U.S. Allied Commission For Austria (USACA) Section, 1945–1950. V1.1127/XIX Josef and Martha Gerstmann.

³⁶ US National Archives and Records Administration, DN1929, Records of The Property Control Branch Of The U.S. Allied Commission For Austria (USACA) Section, 1945–1950. V1.1127/XIX Josef and Martha Gerstmann.

originality of the Gerstmann syndrome, after a possible earlier case of the syndrome was reported (Benton and Meyers, 1956). Specifically, Arthur Benton and Russell Meyers at the University of Iowa drew attention to an 1888 report by the French ophthalmologist Jules Badal (1840–1929) of a post-eclamptic patient apparently with the Gerstmann tetrad. Also, given that “incomplete” forms of Gerstmann syndrome were not rare, and were associated with other deficits, such as apraxia or color agnosia, they questioned whether the “associative bonds” between Gerstmann tetrad symptoms were stronger than associations between those symptoms and other non-tetrad symptoms. They further suggested that there wasn’t sufficient “cogent” evidence of a neuropathologic or psychopathologic significance to the syndrome, and that an unbiased quantitative study of an adequate sample size would more reliably demonstrate associations between all various parieto-occipital deficits and not specific subgroup associations as in Gerstmann’s “impressionistic” analysis (Benton & Meyers, 1956).

The following year Gerstmann clarified how the tetrad of symptoms was reproducible in multiple cases and not a matter of coincidence, how deviations from the typical case were present with any clinical-pathological condition, and how “incomplete” cases were usually due to inadequate examinations or ignorant examiners. He also wrote that it was “wholly unfounded” to think that Badal’s report was an earlier case of the Gerstmann syndrome, because Badal’s patient had disorientation in extrapersonal space instead of personal space, and had dressing apraxia and other visuospatial disturbances not seen in his syndrome. He clarified how his syndrome was a disorder of the “body image proper” (Gerstmann, 1957), as opposed to the “loss of the sense of space,” as Badal hypothesized in his case (Benton & Meyers, 1956). The acalculia in Gerstmann syndrome could be an actual consequence of the finger agnosia, as the

fingers (digits) from an anthropological and developmental standpoint had always played an important role in learning arithmetic. He also mentioned that Badal's case of visual disorientation and visual agnosia had faded into oblivion by the 1920s and 1930s when he described the syndrome, because those deficits had already been well-described and were distinct from what he described (Gerstmann, 1957).

But Benton persisted in attacking the phenomenological significance of the Gerstmann syndrome. In 1961 he published "The fiction of the Gerstmann syndrome," in which he presented the results of a study of 100 acquired brain injury patients, who were asked to perform the four Gerstmann skills, as well as three other skills often mentioned in Gerstmann patients: constructional praxis, reading, and visual memory. The tetrad skills were not more statistically correlated with each other than with the three non-tetrad skills. Additionally, 12 of the 100 patients were right-handed and had unilateral left parietal damage, and none of them had the full Gerstmann syndrome. Three of them presented with an incomplete Gerstmann syndrome, but also other cognitive deficits; but even in this sub-group the statistical analysis did not reveal a significant correlation between the Gerstmann and non-Gerstmann parieto-occipital symptoms. Benton (1961) concluded that Gerstmann's syndrome was artifactual and a result of "biased observation."

Subsequently Macdonald Critchley, who previously had praised Gerstmann for his "shrewd and original communication [that] virtually started a new chapter in the story of parietal symptomatology" (Critchley, 1953, p. 203), harshly criticized the Gerstmann syndrome (Critchley, 1966). Critchley elaborated how the Gerstmann tetrad did not have the same

characteristics in all patients, and that often the tetrad was accompanied by other deficits, such as hemianopia, constructional apraxia, color agnosia, or aphasia. Critchley doubted whether a single explanatory lesion could explain the findings, and doubted the clinical relevance of the Gerstmann syndrome (Critchley, 1966).

Before his death, Gerstmann again defended “without rancor or ill will” his syndrome in a posthumous publication partially assembled by his wife and Viennese neurologist Karl Gloning (Gerstmann, 1970). In this last publication he pointed out how Badal’s patient had dressing apraxia, seen in non-dominant parietal lesions, as opposed to the Gerstmann syndrome, and that Benton’s quotation of neurologist Arnold Pick in reference to Badal’s case was erroneous, which led Gerstmann to not “[take] Benton’s [1961] paper seriously.” He was especially surprised that “Benton continued to cite references to Pick in [his, Benton’s] book that he had acknowledged to me to be erroneous” (Gerstmann, 1970, p. 12). He also pointed out how the “high degree of consistency of the syndrome suggests that it is not due to chance...” (Gerstmann, 1970, p. 14), and again emphasized that his syndrome pertained to disorientation of personal, not extrapersonal, space (Gerstmann, 1970).

Gerstmann pointed out how Critchley’s 1966 paper was merely “a rehash of Benton’s” 1961 paper, and proceeded to refute Critchley’s claim that Gerstmann’s friend Schilder did not believe in the Gerstmann syndrome. Gerstmann quoted his friend Schilder stating that finger agnosia was the only localizable autotopagnosia. Gerstmann also pointed out Critchley’s errors in stating that other German neuropsychiatrists, such as Gabriel Anton (1858-1933) and Karl Bonhoeffer (1868-1948), had previously described the Gerstmann tetrad, when none of those descriptions

contained the cardinal finger agnosia, and that “Critchley’s paper...does not report any of his own observations, but is entirely based on the articles of Benton [and others]” (Gerstmann, 1970, p. 14). Gerstmann brought up how Critchley’s own 1953 book contained numerous clinically-pathologically verified cases of Gerstmann syndrome, none of which he referenced in his 1966 paper. Gerstmann also quoted another author stating that the “pure” Gerstmann syndrome rarely occurs in isolation, but this does not disprove its existence (Gerstmann, 1970).

By 1983, a call to the end of the condemnation of Gerstmann syndrome was made, and the syndrome was deemed to be of clinical value, despite the fact that its localization value was still questioned (Strub and Geschwind, 1983). When all complete Gerstmann syndrome cases (96) were tabulated, the majority localized to the left parietal lobe, but in 4 cases the syndrome localized to the right hemisphere and in 20 cases there was bilateral hemisphere involvement (Strub and Geschwind, 1983). Additionally, a 1964 article had revealed that complete Gerstmann syndrome cases do not always localize to the angular gyrus, and that restricted angular gyrus lesions don’t always lead to Gerstmann syndrome (Heimburger, Demyer, and Reitan, 1964). Thus Gerstmann’s hypothesis that his syndrome arises from a lesion in “the [dominant] angular gyrus in its transition to the second occipital convolution” (Gerstmann, 1940) seems mostly, but not entirely, accurate (Lebrun, 2005).

In the 1990s, Benton himself seems to have become convinced that Gerstmann syndrome does indeed exist in isolation, after three case reports emerged with more-or-less pure Gerstmann syndrome (i.e., no constructional apraxia or aphasia). But Benton still believed, as did Critchley, that the Gerstmann syndrome is “a matter of historical accident” and that other syndromes

caused by lesions to very small posterior perisylvian areas also deserve a syndrome designation (Benton, 1992). Even more recently, it has been deemed very unlikely that all tetrad symptoms result from a lesion to the same population of cortical neurons. Using combined functional and structural imaging studies of healthy brain, it has been demonstrated that a pure Gerstmann syndrome might arise from injury-caused disconnection to separate but co-localized subcortical parietal white matter tracts (Rusconi et al, 2010).

Regardless of the criticism and controversy surrounding his syndrome, Gerstmann was honored throughout his career as a Fellow of the American Academy of Neurology and the American Psychiatric Association, and was a member of the New York State and County Medical Society, the American Medical Association, the Society of St. Elizabeth in Washington, DC, the New York society for Clinical Psychiatry, the American Psychopathology and Psychotherapy Society, the Pirquet Society (Austrian expatriate scientists in the USA), the Rudolf Virchow Society (Klemperer, 1970), and, from 1944 on, was an “Honorary Member” of the Psychiatric Institute in Rosario, Argentina (Strauss et al, 1983).

Discussion

By spring 1939, about 2000 Jewish doctors overall (private and academic practice) had been removed from Austrian society (Kater, 1989), and all leading board members except one of the Viennese Association of Neurology and Psychiatry had been dismissed in 1938. Sixteen former neuroscientist trainees of Wagner-Jauregg alone were dismissed, exiled, or became victims of the Holocaust (Hubenstorf, 2002). Gerstmann’s former assistant Scheinker fled to Paris and worked at the Salpêtrière from 1938-40 under Professor Georges Guillain (1876-1961; co-describer of Guillain-Barré syndrome), but following the German invasion in May 1940, he escaped to New

York, finally finding an open neuropathology position in Cincinnati.³⁷ MTS resident Kobler fled for China, aided by the Jewish organization in Shanghai, but his sister and mother did not escape and were murdered in the Holocaust. He stayed in China for 14 years before returning to Vienna in the 1950s to escape communism, then immigrated to America in the 1960s, and eventually settled in Maryland (Strauss et al, 1983).

Gerstmann, Marburg, Scheinker, Kobler, and others were perceptive and fortunate enough to emigrate from Austria soon after the *Anschluss*, and though they surely suffered psychological trauma from being exiled from their homeland, and humiliation and disenfranchisement from state-sanctioned persecution by the Nazis, they were not directly physically harmed. We have no doubt that Gerstmann and his wife, being *Volljuden* (full, or pure, Jews), would have been deported to a concentration camp and likely perished had they not emigrated. Gerstmann's former student Viktor Frankl was deported and luckily survived Theresienstadt, Auschwitz, and Dachau concentration camps (Frankl, 1997), and at least 10 other Czech or Austrian neuroscientists were deported and either barely survived or were murdered (Hubenstorf, 2002). Nine years senior to Gerstmann, Vienna University neuropathology professor Richard Stern (1878-1942), also dismissed in 1938, was deported and murdered in Auschwitz on 13 Oct 1942 (Angetter, 2008). Also, Gerstmann's attorney brother Heinrich was murdered in the Holocaust (Strauss et al, 1983).

Statistically-speaking, Gerstmann's US emigration decisions were similar to other physician refugees from Nazi Europe. We know that by the end of 1940, 5,056 physicians had immigrated to the US, of whom 60-75% were Jewish (Edsall and Putnam, 1941) and about 65% were

³⁷ Joseph P. Evans Files, University of Notre Dame Archives, File CJPE 9/08, Folder Scheinker, Dr. I. Mark, General Correspondence.

between 40-55 years old (Gerstmann was 50) (Edsall, 1940). Gerstmann contributed to the 35% of registered immigrants (with the Resettlement Committee), who were graduates of Austrian medical schools (second only to the German), and the 3% who were neurologists and psychologists, the sixth largest group of specialists.³⁸ Gerstmann's choice of New York as a home was not unique, as roughly 60% of immigrant physicians to the US had also chosen it by the end of 1940 (Edsall and Putnam, 1941). Not only were New York licensing requirements easier and free of a "complex network of legal and semi-legal restrictions" present in many states (Edsall and Putnam, 1941, p. 1885) but, as the port of entry for most immigrants, it contained large numbers of ethnic minorities, who preferred a physician who spoke their native language. Additionally, the argument from the American Medical Association that foreign medical training was inferior to that of domestic training was not credible in New York, where generations of prestigious medical specialists trained in Germany or Austria were now practicing (Kohler, 1997). Of note, however, licensing wasn't easy for all Austrian neuroscientists in New York, as illustrated by the ordeal of Gerstmann's colleague Marburg, who had to go to court against the New York State Licensing Board to try to get his Austrian license endorsed without taking the board examination (as he had reached a position of "conceded eminence"). This failed, but he was granted a new license instead (Triarhou, 2008).

The emigration of large numbers of physician refugees from Germany and Austria did not simply create a "brain drain," leading to the immediate augmentation of American neuroscience and the large scale success of all the emigrants. Although he was alive and had a comfortable home in New York, Gerstmann would never again be director of a neurology clinic. This was a similar fate to other eminent Austrian neurologist directors ejected from their homelands.

³⁸ The five larger specialties proportionally were General practice (46.5%), Internal medicine (12.5%), Pediatrics (6.5%), Obstetrics and gynecology (5.0%), and Dermatology (4.0%).

Marburg had been Director of the Viennese Neurological Institute before the *Anschluss*, but also never regained the same title post-emigration, though he did become a clinical professor at Columbia University and the New York Neurological Institute, along with Gerstmann, and did attend at the Postgraduate Hospital along with Gerstmann (Triarhou, 2008). Similar fates befell some of Gerstmann's other Viennese neurology colleagues. Artur Schüller (1874-1957), the "father of neuroradiology" was Director of the Neurologic Department at the *Kaiser-Franz-Josef-Ambulatorium* in Vienna's 6th district from 1909-38, before his dismissal and forced exile to Melbourne, Australia via England. Schüller, also famous for Hand-Schüller-Christian disease, lost both of his sons in the Holocaust. He continued to work in a semi-retired fashion, though severely depressed over the loss of his sons, and his wife was compelled to work as a domestic to make ends meet (Schindler, 1997; Schnaberth, 2010). Josef Wilder (1895-1976), like Gerstmann originally from Lemberg, Galicia, and trained in Wagner-Jauregg's university clinic in the 1920s, became the Medical Director of the (Rothschild-funded) Rosenhügel Neurological Institute in Vienna from 1932-38 before his dismissal and forced emigration, also to New York. Wilder did not return to Vienna, and his career in the US seems to have shifted from a neurologically-based practice to that of purely psychotherapy and psychiatry (Schnaberth, 2010).

Gerstmann's protracted struggle to reclaim his Viennese property was unfortunately not unique, and we believe that what transpired contributed to his and others' difficulties in re-establishing stable productive careers in their adoptive countries. Bruno Gerstl (1901-1993), an Austrian neuroscientist, immigrated with his wife after the *Anschluss* to New Haven, Connecticut with the assistance of the Hebrew Immigrant Aid Society (Strauss et al, 1983). Gerstl and his wife owned a plot in Vienna's XIX District, on which they built a 10-bedroom apartment from 1937-38. The property was confiscated ("Aryanized") by the *Oberfinanzpräsident* Vienna in November 1944

as “payment for Jewish taxes” (*Reichsfluchtsteuer*), since the Gerstls had left Austria (compared to Gerstmann who had paid all taxes and still had his property seized). On Gerstl’s request as property claimant in 1946, the US Army Property Control Division took custody of the property. The Viennese government restituted the Gerstl property as of 11 April 1947, based on the first restitution law of 26 July 1946 (which restituted all unlawfully “Aryanized” properties).³⁹ The property reclamation process seems to have proceeded slightly more smoothly for Gerstl than for Gerstmann, given that the Austrian post-war government had not installed the Austrian People’s Party in their building. But the Gerstls still had to go through bureaucracy to repair bomb damages to their apartment, acting through an administrator they did not choose, while they were merely claimants and not yet reinstated as the rightful owners until 1947.

It seems as if the Gerstmann’s struggle to evict the callous and aloof Austrian People’s Party, wrongly installed on the property by the Austrian government without concern for who the original owners were, and the delayed return of Gerstmann’s medical degree by the University of Vienna, reflected a common Austro-German *Vergangenheitspolitik* (policy of dealing with the past). This policy was concerned with amnesty for former Nazis, reintegrating them into society, and distancing the post-war government from Nazism; therefore, governmental policy seemingly was more concerned about addressing the needs of the perpetrators than the victims (Frei, 2002), like Gerstmann. The slower processing of victim claims to reinstate their doctorates at the University of Vienna after the war (if such victims, like Gerstmann, were even aware of the doctorate removal) than the claim of former Nazis is an example of such *Vergangenheitspolitik*. The inconspicuous reinstatement of victim doctorates post-war was likely a result of shame and embarrassment or wanting to avoid consequences, since committees had been formed at every

³⁹ US National Archives and Records Administration, DN1929, Records of the Property Control Branch Of The U.S. Allied Commission For Austria (USACA) Section, 1945–1950. V1.1137/XIX: Bruno and Helene Gerstl.

university during the Nazi era, including rector and deans, to decide on degree withdrawals without hearing the concerned individuals, and because those involved likely did not want to be held responsible (Posch, 2006). Graciously the Austrian government did make financial reparations to Gerstmann late in his life for the flight taxes he paid (Österreichisches Staatsarchiv).

In 1969 Vienna Mayor Bruno Marek offered condolences to Martha Gerstmann, stating that her husband “propagated the reputation of the Vienna Medical School...[and] He has the enduring thankfulness of his many patients” (Klemperer, 1970). Hopefully the thankfulness of his patients was enough to satisfy Gerstmann, given that he was discriminated against because of his religion, robbed of his professorship and directorship in Vienna following the *Anschluss*, had his medical doctorate and property stripped by the Nazis, and was exiled from his beloved homeland despite all his professional contributions and service record in World War I. It has been over 75 years since the *Anschluss* in March 1938, and although Gerstmann’s name is remembered by neurologists, and his syndrome has been vindicated, his compelling personal story has remained largely obtuse until now.

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Figure Legend

Figure 1 – Professor Dr. Med. Josef Gerstmann, unknown year. Photo by Willy Hlosta, Vienna. Permission to reprint from the Vienna University Archive, Austria.

Figure 2 – Julius Wagner-Jauregg's University Neurology and Psychiatry Clinic, circa summer 1925. Gerstmann is sitting just to the right of Wagner-Jauregg, and Paul Schilder is to the right of Gerstmann. Hans Hoff is in the second row, second from the right. Otto Kauders is furthest to the right in the first row. By 1938, Schilder, Gerstmann, Hoff, and Kauders had all been dismissed or left Austria. Also Erwin Stengel (1902-1973), second row first on the left, was dismissed for racial reasons in 1938 and immigrated to Britain, later becoming Psychiatry Chair at Sheffield in 1957 (Mühlberger, 1993; Pilowsky, n.d.). From: [http://ihm.nlm.nih.gov/luna/servlet/detail/NLMNLM~1~1~101433214~192445:-Vienna,-Universita%CC%88t-?qvq=q:B027397;lc:NLMNLM~1~1&mi=0&trs=1].