

Katrin Steffen

<https://orcid.org/0000-0002-1338-3309>

School of Media, Arts and Humanities, University of Sussex

OCCUPATION AS SOCIAL PRACTICE
AND AMBIGUOUS SPACE:
THE LIVES OF LUDWIK HIRSZFELD
AND JAN CZOCHRALSKI IN WARSAW, 1939-44*

Abstract

This article evaluates the situation of two renowned scientists in Poland, namely the microbiologist and serologist Ludwik Hirszfeld (1884–1954), and the metallurgist Jan Czochralski (1885–1953), during the time of the German occupation from 1939–45. Both scientists strove to continue their scientific work even under the conditions of occupation but faced substantially different treatment by the occupiers: Hirszfeld was forced to live in the Warsaw Ghetto, while Czochralski was allowed to stay in his home and work at the former Technical University of Warsaw. The article takes a comparative approach and will analyse the life situation of both scientists. This means looking at the limits of action for both scientists on one side, and on the other, at the room for manoeuvre, which, under the conditions of a brutal occupation, either emerged for the two of them or they actively created.

Keywords: Ludwik Hirszfeld, Jan Czochralski, *Eigensinn*, Nazi occupation 1939–45, Warsaw Ghetto, clandestine teaching

* This article is an extract from my double biography *Blut and Metall. Die transnationalen Wissensräume von Ludwik Hirszfeld und Jan Czochralski im 20. Jahrhundert* (Göttingen, 2021). This book is based on my habilitation, which Włodzimierz Borodziej was one of the reviewers of – and it has been the greatest pleasure to work and discuss many aspects of the life of both scientists and Polish history in general with him.

I

INTRODUCTION

With the German Army's invasion of Poland in September 1939, for most women and men in Poland, the daily routines that included having a professional life, an economic outcome, as well as maintaining cultural and personal relationships, changed fundamentally. The German occupiers spread terror, limited mobility and the scope for action, although to varying degrees for different groups of people, they shut down schools and institutions of higher education and many other places where Polish men and women used to meet and interact. Large parts of the population were subjected to extreme constraints. This holds true especially for the Jews in Poland and for those who were regarded as such by the Germans since, for them, the Germans knew only one destination: extermination. Many non-Jewish Poles suffered substantially from the policies of the occupation regime as well. Every single family in Poland was affected by the policies of the occupier. Under the conditions of a state of emergency and disruptions in daily routines, it was difficult to continue in previous professional and private roles. This also holds true for men and women of science. And yet, many tried to do precisely that – they continued their research, searched for a new framework or even initiated new projects.¹

In this article, I would like to take a closer look at the lives of two renowned scientists who lived in Warsaw before and during the occupation.² They faced substantially different treatment by the occupiers, as one of them, the microbiologist and serologist Ludwik Hirszfeld (1884–1954), was of Jewish descent (though he had converted to Catholicism in 1918 together with his wife, Hanna, this made no difference to the racist worldview of the Germans) and was forced to give up his position at the State Institute of Hygiene [Państwowy Zakład Higieny, PZH] in Warsaw and live in the Warsaw Ghetto. The second one, the metallurgist Jan Czochralski (1885–1953), was a Catholic. He was allowed to stay in his home during the occupation and, as far as we know, to attend his workplace regularly, the former Warsaw

¹ For more specifics on this, see Friedrich Cain, *Wissen im Untergrund. Praxis und Politik klandestiner Forschung im besetzten Polen* (Tübingen, 2021).

² I would like to thank two anonymous reviewers for their valuable comments.

University of Technology [Politechnika Warszawska, PW].³ Both scientists tried to continue their scientific work during the occupation, which meant conducting research, in the case of Czochralski to produce various kinds of material, and in the case of Hirszfeld, to also get involved in the clandestine teaching of medical students in the Warsaw Ghetto. In a comparative approach, this article will take a closer look into how they were able to do this, how they succeeded in doing so, and what limited them in their work. This means analysing the scope for action or the room for manoeuvre, which, under the conditions of brutal occupation, either emerged for the two scientists or which they actively created, albeit under the fundamentally different conditions that the occupier had created for them.

Under the conditions of occupation, spaces like this were almost without exception characterised by an asymmetrical relationship between the occupier and the occupied. Nevertheless, they were also accompanied by a necessity or willingness to compromise. Therefore, the conditions of occupation will be understood here as a social practice, as a space in which a dynamic relationship between the occupiers and the members of the occupied society develops. Between the rulers and the ruled, contradictions and inequalities appear and are revealed, and this is also valid for relations amongst the ruled themselves. This means that the social practices of occupation can be full of ambiguities. And sometimes, those ambiguities cannot be resolved into a dichotomous opposition of resistance and cooperation or ‘collaboration’.⁴ On the contrary, they reveal a broad spectrum of various forms of behaviour, which allows for the existence of obedience and resistance at the same time.⁵ Given the many different situations in which people found themselves in confrontation with

³ Since we have a remarkably smaller number of sources at our disposal on the life of Jan Czochralski than for Ludwik Hirszfeld, it is unavoidable to concentrate more on the institutional framework than the personal life of Jan Czochralski in this article.

⁴ Tatjana Tönsmeier, ‘Besatzung als europäische Erfahrungs- und Gesellschaftsgeschichte: Der Holocaust im Kontext des Zweiten Weltkrieges’, in Frank Bajohr and Andrea Löw (eds), *Der Holocaust. Ergebnisse und neue Fragen der Forschung* (Frankfurt am Main, 2015), 281–98.

⁵ Alf Lüdtke, ‘Einleitung: Herrschaft als soziale Praxis’, in *id.* (ed.), *Herrschaft als soziale Praxis. Historische und sozial-anthropologische Studien* (Göttingen, 1991), 9–63, 49–50.

the occupier, the fear for their lives and those of their families, for them, there was not always a clear-cut divide between ‘good’ or ‘bad’ behaviour, especially from an ex-post perspective after the war.

To grasp those ambiguities, the concept of *Eigensinn*, introduced into everyday history by historian Alf Lüdtke, seems to be especially helpful.⁶ The desire to know something about the attitude and the reasons for the actions that individuals take in the system of rule that they live under, often contains the implicit imperative to “Tell me where you stand!”, as Thomas Lindenberger has noted. The observer’s perspective in the concept of *Eigensinn* then “takes into account that this question cannot or cannot always be answered so easily”.⁷ With this in mind, I would like to ask if we can find something like *Eigensinn* in the behaviour of Ludwik Hirszfeld and Jan Czochralski during the occupation, being a “third behaviour, one that does not follow the either-or logic of domination or resistance”, as Alf Lüdtke has put it.⁸ Thereby the fundamental differences under which both scientists lived during the occupation will always be considered.

II

TRANSNATIONAL LIVES AS SCIENTISTS AND EXPERTS

The two scientists focused on here, the bacteriologist and serologist Ludwik Hirszfeld and the metallurgist Jan Czochralski, belonged without a doubt to the European scientific elite of their time. They lived almost parallel lives – starting with their shared experience of being born on the peripheries of Russia and Prussia in partitioned Poland at the end of the nineteenth century.⁹ For educational reasons, both migrated to the German Empire. Hirszfeld began studying medicine

⁶ Thomas Lindenberger, ‘Eigen-Sinn, Domination and No Resistance’, in *Docupedia-Zeitgeschichte*, 3 Aug. 2015, http://docupedia.de/zg/lindenberger_eigen-sinn_v1_en_2015. DOI: <http://dx.doi.org/10.14765/zzf.dok.2.646.v1>.

⁷ *Ibid.*

⁸ Alf Lüdtke, ‘Geschichte und Eigensinn’, in Berliner Geschichtswerkstatt (ed.), *Alltagskultur, Subjektivität und Geschichte. Zur Theorie und Praxis von Alltagsgeschichte* (Münster, 1994), 139–53 (here 146 f.).

⁹ For a more detailed account, see Katrin Steffen, ‘Transnational Parallel Biographies: The Lives of Ludwik Hirszfeld and Jan Czochralski and their Contribution to Modern European Science’, *Jahrbuch des Dubnow-Instituts/Dubnow Institute Yearbook*, xvi (2017), 391–418.

in Würzburg in 1902 and finished his doctorate in Berlin. In 1907, he took a position in the prestigious and modern Institute for Cancer Research in Heidelberg, where he and his mentor, Emil von Dungern, demonstrated the heritability of human blood groups and introduced the classification of blood types A, B, AB, and O. With the publication of these findings, Hirszfelf established himself in the field of blood group research, which developed very dynamically at the time. With the outbreak of the First World War, Hirszfelf and his wife Hanna, also a physician, who contributed a great deal to his works, offered their service to the Serbian state to help fight epidemics in the Eastern theatre of war. Under those conditions, the Hirszfelfs were confronted with many soldiers from all over the globe. They used this situation to continue research on human blood groups. While analysing the distribution of blood groups related to geographic descent, they established a new, dynamically developing research field – seroanthropology, the correlation of blood groups and ‘race’ that was an excellent fit in the research trends of their time, in which questions of heritability were of high actuality.¹⁰ After the war, Hirszfelf first moved to Belgrade, where he expected to be given an appropriate position. After this failed, the Hirszfelfs decided to move to Poland. There he quickly established himself as one of the leading experts in the world on blood group research and immunology and maintained a broad network of contacts with scientists around the globe.

Czochralski’s path to becoming an established expert in metallurgy developed in a slightly different way. Since he had not finished high school in his hometown Kcynia, in the Prussian part of Poland, he could not enter university. When he went to Berlin in 1904, he began to train himself on more practical grounds, first in a pharmacy, then in a small chemical company. This way, he accumulated valuable capital as an autodidact and acquainted himself with the chemical composition of different substances and metals. This practical capital turned out to be of high value and enabled him to find employment in the extensive research laboratories of the metal industry in Germany. He started in Berlin at the General Electricity Company [Allgemeine Elektrizitäts-Gesellschaft, AEG], a very innovative workplace at that time, where he advanced quickly, particularly during the First World War, when

¹⁰ See Katrin Steffen, ‘Ludwik Hirszfelf, the Great War, and Seroanthropology: Expectations and Unfulfilled Promises’, *Ab Imperio*, 2 (2016), 125–52.

he successfully developed desperately needed substitute materials for specific metals, especially copper. Already in 1917, he continued his journey in Frankfurt am Main, where he became the head of a large, newly established and very modern laboratory of the Metallgesellschaft Company, one of the largest trading companies for metals worldwide.¹¹ He also took over influential positions in professional metal research organisations and in the metal industry in Germany, for example, at the German Society for Metallurgy [Deutsche Gesellschaft für Metallkunde, DGM]. In 1926 he was even elected president of the society.

In 1928 however, despite being at the height of his influence in Germany's metal industry and the DGM, Czochralski moved to Poland. This choice is still a matter of speculation since there are few reliable sources. In April 1928, his employment at the Metallgesellschaft was transformed into an advisor contract, according to which Czochralski was to take over the marketing of certain metals in Eastern Europe.¹² Also, his laboratory had significantly changed its character by then from a research lab to a lab dealing mainly with contract work for the industry. This resulted, among other things, in a steep decline in research and patent applications, a change Czochralski most probably did not approve.¹³ Academic advancement in Germany was obviously difficult due to his missing degrees. At this time, he was offered a position in Poland at the Warsaw University of Technology, accompanied by an extensive research institute that he could equip with the most modern equipment and material, mainly from Germany. So, the overall factors that led to Czochralski's departure from Frankfurt were the living and working conditions in Germany and the prospects for a scientific life in Poland – this constellation constituted a complex interplay of push and pull factors.¹⁴

Although Czochralski moved to Poland some ten years later than Hirszfeld, the situation in the newly formed state was quite similar

¹¹ Günter Wassermann and Peter Wincierz (eds), *Das Metall-Laboratorium der Metallgesellschaft 1918–1981. Chronik und Bibliographie* (Frankfurt am Main, 1981), 3.

¹² Johannes Jaenicke, *Materialien zur Lebensgeschichte von Johann Czochralski*, typescript (Frankfurt am Main, 1957).

¹³ Georg Welter, *Zwölf Jahre Metall-Laboratorium* (Frankfurt am Main, 1930).

¹⁴ See on those factors in research on migration Dirk Hoerder, Jan Lucassen, and Leo Lucassen, 'Terminologien und Konzepte in der Migrationsforschung', in Klaus J. Bade *et. al.* (eds), *Enzyklopädie Migration in Europa. Vom 17. Jahrhundert bis in die Gegenwart* (München, 2007), 28–53.

for both. They knew, not least from the experiences of the First World War, that their expertise was deeply appreciated, not only in the German-speaking world, and could be of enormous significance to any state that strove to bolster its economic and social advancement with scientific knowledge. So in the newly formed Polish nation-state, both scientists and experts were most welcome since Poland, like other newborn states in the region, felt a strong need for scientific knowledge in the construction or reorganisation of its administration and institutions – for the scientists, this meant the emergence of new spaces full of opportunities, expectations and challenges, but also risks.¹⁵ Czochralski and Hirszfeld became active then not only in laboratories, universities, and research institutes but also in professional associations and in public, where they acted as political counsellors, in courts, for industry and the military. As experts, they were among the central figures of their time and most certainly belonged to the intelligentsia [*inteligencja*], which was meant to lead the newly formed nation.¹⁶ Upon their arrival in Poland, both were able to occupy a very prominent status in Poland's interwar scientific landscape until 1939 – Hirszfeld as deputy director in the PZH in Warsaw and Czochralski as a Professor at the PW and Head of the Institute for Metallurgy and Metal Research [*Instytut Metalurgii i Metaloznawstwa, IMM*], which was financed by the Ministry of Military Affairs and also located on the premises of the PW. Their expertise was highly regarded.

At some point in their lives, though, they did find themselves in an outsider position. For example, Ludwik Hirszfeld was not appointed director of the PZH, when his cousin, the internationally recognised health politician, Ludwik Rajchman, resigned from that position in 1933. Rajchman's leftist political opinions and his opposition to the politics of the Polish foreign minister, Józef Beck (1894–1944), had led to the loss of his position. Although Hirszfeld was the *de facto* scientific director of the PZH, the physician Colonel Gustaw Szulc (1884–1941) took over the institute. This reflected its

¹⁵ See on this Martin Kohlrausch, Katrin Steffen, and Stefan Wiederkehr (eds), *Expert Cultures in Central Eastern Europe. The Internationalization of Knowledge and the Transformation of Nation States since World War I* (Osnabrück, 2010).

¹⁶ Margit Szöllösi-Janze, 'Der Experte als Schachspieler. Thesen zum Verhältnis von Wissenschaft und Krieg', *Forschungsberichte aus dem Duitsland Instituut Amsterdam/Universiteit van Amsterdam*, 5 (2009), 34–47 (here 34).

growing militarisation. The Jewish descent of Rajchman and Hirszfeld added to these dynamics – as early as 1921, a representative of the Rockefeller Foundation, Selskar M. Gunn, noted “an enormous prejudice against him [Rajchman] on account of him being a Jew”.¹⁷ Also, Jan Czochralski met with some resentment after his initial enthusiastic reception in Warsaw led to him gaining control over almost all research on metals done on behalf of the Polish Army. Combined with his position as a counsellor for the armaments industry, he quickly acquired some power, which evoked suspicion, primarily because of the Prussian/German citizenship he continued to hold.¹⁸ He also acted in a somehow unfortunate manner when he tried to implement – without success – the use of certain substitute metals in Poland that he had introduced in Germany quite successfully. He did not consider the different material and cognitive conditions in Poland.¹⁹ So, on the eve of the Second World War, Hirszfeld could feel the growing anti-Semitism, not only in Germany, where he held close contact with scientific circles there, but also in Poland. Czochralski’s position also became more and more precarious because of his rootedness in German science and his colossal workload, which, it seems, he was not able to manage in a way that satisfied all his colleagues and collaborators.²⁰ Both scientists experienced a situation in which they were perceived as ‘foreign’, as competitors, as not having endured the partition period, and who represented ‘foreign’ scientific schools and knowledge. This constellation certainly created not only professional advancement but also jealousy and personal animosities.

¹⁷ The Rockefeller Archive Center, Rockefeller Foundation Archives, Record Group 1.1, 789.

¹⁸ See on this question Paweł Tomaszewski, *Powrót. Rzecz o Janie Czochralskim* (Wrocław, 2021²), 267–8.

¹⁹ See for example Zbigniew Tucholski, ‘Stop kolejowy bahnmittel prof. Jana Czochralskiego i jego zastosowanie w kolejnictwie’, *Zeszyty Historyczne Politechniki Warszawskiej*, xvi, 2 (2014), 41–61, 47. On the significance of materiality for the transfer of knowledge see Katrin Steffen, ‘Stoffe auf Reisen: Die transnationalen Akteure Jan Czochralski und Ludwik Hirszfeld und die lokale Bedingtheit der Entstehung von Wissen’, *Berichte zur Wissenschaftsgeschichte*, xliii, 1 (2020), 74–95.

²⁰ See on this also Mariusz W. Majewski, ‘Prace Instytutu Metalurgii i Metaloznawstwa przy Politechnice Warszawskiej i Jan Czochralski’, *Studia Historiae Scientiarum*, 17 (2018), 89–117.

III OCCUPATION RULE, SCIENCE AND *EIGENSINN*

1. JAN CZOCHRALSKI AND THE WARSAW UNIVERSITY OF TECHNOLOGY

For most scientists in Poland, the occupation meant a profound rupture in their professional lives, for, as a rule, they were stripped of their previous positions and could no longer fulfil their public roles as experts, teachers, reviewers and researchers. It was the declared aim of the occupational regime to shut down all institutions of higher education in Poland since the German occupier believed that there was no need for well-trained Polish specialists in the future. Nevertheless, many of them continued their work, often in a different framework, and so did Jan Czochralski and Ludwik Hirszfeld. Here the questions arise, since they had been quite privileged researchers during the interwar period, were they able to use further those privileges acquired due to their expertise and rootedness in local and international science? If yes, how did these affect the possibility of agency, of being acting subjects, not passive victims? Or were they, after all, mainly victims of the occupation policy as so many other people living in Poland were? And what happened to their self-understanding as scientists, their scientific practice and their epistemic ideals, such as objectivity or the pursuit of independent research?

Shortly after the German invasion in September 1939, it became clear that it was not the goal of the German administration of the General Government to “turn Poland into a model province or a model state according to the German order”, as District Governor Ludwig Fischer put it. He added: “The Polish intelligentsia must be prevented from forming a ruling class. The standard of living in the country is to remain low; we only want to draw labour forces from there”.²¹ Following this policy, the intelligentsia was declared a threat to form a resistance movement and was particularly targeted, although it was never exactly defined who belonged to this group. This definition and

²¹ German original: “Es muss verhindert werden, dass eine polnische Intelligenz sich als Führungsschicht aufmacht. In dem Lande soll ein niederer Lebensstandard bleiben; wir wollen dort nur Arbeitskräfte schöpfen”, ‘Protokoll der Besprechung Hitlers mit Keitel vom 17.10.1939’, in Christiane Eberhardt, *Geheimes Schulwesen und konspirative Bildungspolitik der polnischen Gesellschaft im Generalgouvernement* (Frankfurt am Main et al., 2003), 41; English: https://avalon.law.yale.edu/imt/chap16_part08.asp [Accessed: 1 June 2022].

the form of the specific procedure were given to the commanders of the *Einsatzgruppen* of the SS that marched into Poland in September 1939 and operated in a zone of permitted violence.²² In this zone, it was allowed to incarcerate or even shoot all representatives of the intelligentsia. This extremely violent policy differed quite clearly from the practices of German occupation regimes in Northern or Western Europe.²³ The Second World War was there more of a conventional war, whereas in Eastern Europe, the Germans perpetrated war crimes in the frame of an ideologically-motivated and racist war of annihilation on a previously unknown scale.²⁴ Nowadays, it is assumed that the *Einsatzgruppen* and police forces as well as units of the German Army, the Wehrmacht, murdered more than 40,000 people of the intelligentsia during the war. Consequently, 30 per cent of all Poles with a high school diploma and 37.5 per cent of those who held a university degree during the interwar period were killed during the German occupation.²⁵

Under this policy, the science administration of the General Government pursued the aim to close all universities and research institutes in the country and banned the use of academic titles. However, the National Socialists' approach to questions of science policy in the General Government did not follow a clearly formulated

²² See on this, Daniel Brewing, *Im Schatten von Auschwitz. Deutsche Massaker an polnischen Zivilisten 1939–1945* (Darmstadt, 2016), 165.

²³ The families of Jan Czochralski and Ludwik Hirszfild were directly affected by this policy. During the first days of the occupation, one of Jan Czochralski's brothers, the teacher Kornel Czochralski, was murdered in Poznań. The Germans also arrested the husband of Hanna Hirszfild's sister Izabela, Stanisław Kielbasiński, in his home at Zegrze near Warsaw, as a member of the intelligentsia and deported him to the Dachau concentration camp, from which he was later released.

²⁴ Tatjana Tönsmeier *et al.*, 'Fighting Hunger, Dealing with Shortage. Everyday Life under Occupation in World War II Europe – An Introduction', in *Fighting Hunger, Dealing with Shortage: Everyday Life under Occupation in World War II Europe: A Source Edition*, ed. Tatjana Tönsmeier, Peter Haslinger, Włodzimierz Borodziej, Stefan Martens, and Irina Sherbakova (Leiden–Boston, 2021), IX–LVIII (here X); Dieter Pohl, 'Herrscher und Unterworfenene. Die deutsche Besatzung und die Gesellschaften Europas', in Dietmar and Wilfried Süß (eds), *Das "Dritte Reich". Eine Einführung* (München, 2008), 267–85, 270 ff.

²⁵ Those figures, published by Tomasz Szarota in the 1970s, are repeated in Marcin Zaremba, *Wielka Trwoga. Polska 1944–1947. Ludowa reakcja na kryzys* (Kraków, 2012), 96.

plan before the invasion – this policy developed primarily in practice. This way, the implementation of ideological guidelines was inconsistent and sometimes even contradictory – the destruction of the higher education system took place differently from place to place. There was no precise planning “behind the general program of destroying the ruling class and degrading the Poles to the status of a Helot people”.²⁶ This lack of regulation also applied to the policy of dealing with scientific institutes, universities and their equipment, as Rudolf Mentzel, the influential head of the Office of Science in the Reich Ministry of Education, complained in October 1939.²⁷ During the first phase of the occupation, numerous uncontrolled confiscations, robberies and destructions of research equipment took place.²⁸ Czochralski’s workplace, the Warsaw University of Technology, was also affected by this. For example, one of the most powerful and influential physicists and science functionaries in Nazi Germany, Erich Schumann, had ordered the theft of the entire equipment of the ballistics laboratory at the Institute of Physics, equipment from the Institute of Higher Geodesy and the Institute of Mineralogy.²⁹ In addition, physicist Wolfram Eschenbach, from the Technical University Berlin, took part in theft from the PW – due to a shortage of trucks, he was *only* able to take the most valuable apparatuses.³⁰ In total, most of the equipment from the Institutes of Physics I and II, Astronomy, Geodesy and Mineralogy was looted, as well as the entire inventory of the ballistics laboratory, numerous books and journals from the main library and other institutes.³¹ Following the founding of the General Government

²⁶ Christoph Kleßmann and Waclaw Długoborski, ‘Nationalsozialistische Bildungspolitik und polnische Hochschulen 1939–1945’, *Geschichte und Gesellschaft*, xliii, 4 (1997), 535–55 (here 542).

²⁷ Bundesarchiv Lichterfelde (hereinafter: BA Lichterfelde) R 4901-687, Bl. 48, Bericht von Amtschef Menzel an den Reichserziehungsminister, 31 Oct. 1939.

²⁸ Eugeniusz C. Król, ‘Szczątkowe formy jawnej egzystencji polskiego życia naukowego w Generalnej Guberni (1939–1945)’, *Przegląd Historyczno-Oświatowy*, xix, 2 (1986), 167–98 (here 179).

²⁹ Archiwum Państwowe Warszawy (hereinafter: APW), Amt des Distriktchefs Warschau 1030-1945, 1284, Rektor Drewnowski an die Abwicklungsstelle, 13 Dec. 1939.

³⁰ *Ibid.*

³¹ Dział Rękopisów Biblioteki UW, Spuścizna St. Pieńkowskiego 2586, Zestawienie strat Politechniki Warszawskiej spowodowanych wypadkami wojennymi za okres od IX 1939 r do 30 VI 1941; *The Nazi Kultur in Poland*, by several authors of necessity temporarily anonymous, Polish Ministry of Information (London, 1945), 65.

at the end of October 1939, though, General Governor Hans Frank wanted to keep the equipment and as many of the objects in the research institutes and universities in their original places – his aim was to exploit them for the armaments industry and the Wehrmacht in Poland, rather than to transfer them to universities in the Reich.³²

When the ethnologist and sociologist Heinrich Harmjanz³³, who had been appointed a General Trustee for the securing of German cultural property in Poland, visited the PW on 4 November 1939, he reported that the research institutes had been damaged by bombing during the invasion and the buildings destroyed to degrees varying from 15 to 50 per cent.³⁴ Institutes were used to quarter troops, and the main building was entirely occupied by units of the Wehrmacht, which later stole all of the furniture, electrical equipment and other equipment, such as typewriters. Harmjanz was led through the buildings by Kazimierz Drewnowski, the rector of the PW. Harmjanz described this tour as “accommodating and friendly, which can also be said of the heads of the institutes visited, most of whom were present”. His language thereby signalled a kind of normality and, at the same time, power and control over what was happening.³⁵

Harmjanz provided a relatively detailed description of the institutes of the University of Technology. In Czochralski’s institute, he observed the following: “A large institute, excellently equipped with the most modern devices and equipment 85 paid staff and assistants. The director, who speaks fluent German, has worked in the German industry for years and knows numerous German companies from his own experience”. And Harmjanz claimed that Czochralski had offered his services to the Warsaw district head of the German civil administration, Ludwig Fischer, in cooperation.³⁶ Whether Czochralski made this offer, and whether voluntarily or under coercion, is unknown.

³² Andrzej Mężyński, *Kommando Paulsen. Organisierter Kunstraub in Polen 1942–1945* (Köln, 2000), 37.

³³ See on his person, Friedemann Schmoll, ‘Heinrich Harmjanz. Skizzen aus der nationalsozialistischen Wissenschaftspolitik’, *Jahrbuch für Europäische Ethnologie*, 3 (2008), 105–30.

³⁴ Piotr Majewski, *Wojna i kultura. Instytucje kultury polskiej w okupacyjnych realiach Generalnego Gubernatorstwa 1939–1945* (Warszawa, 2005), 154.

³⁵ BA Lichterfelde R 4901-688, Bl. 72–75, Bericht über die nicht zerstörten bzw. arbeitsfähigen Forschungsinstitute der Technischen Hochschule Warschau.

³⁶ *Ibid.*

However, what is known is that he reopened his institute after the end of the fighting in Warsaw. In the context of a lack of planning or disinterest, a period began from the invasion until the autumn of 1940 that Tadeusz Manteuffel called a “semi-tolerant period” with regard to Polish science – a time in which scientific work was still possible to a limited extent.³⁷ Additionally, a few months of practical experience had also taught the local civil administration and Hans Frank that it would be in the interest of the Reich to allow educational opportunities on a low level. This thinking was based on the interests of the Reich or considerations of the war economy, not on any concessions to Polish society.³⁸

This also applies to Jan Czochralski, who reopened his institute during this period. Though destroyed in part, the employees were quick to make it work again.³⁹ The reopening date is not fully clear – it might have been as soon as October 1939, as Czochralski himself declared after the war, and without formal permission of the University of Technology. Others assume that the institute started to work again in December 1939, January 1940 or February 1940, as the so-called Metal Testing Institute [Zakład Badań Materiałów].⁴⁰ It is possible that initially, Czochralski worked without the permission of the University of Technology but with the permission of the occupation administration because the legal status of the precursor institute IMM was so unclear that it could not be assigned to the University of Technology.⁴¹ Besides that, the situation arose (as remembered by the son of the physicist Mieczysław Wolfke, who also taught at the University of Technology)

³⁷ Król, ‘Szczątkowe formy’, 178.

³⁸ Christoph Kleßmann, *Die Selbstbehauptung einer Nation. Nationalsozialistische Kulturpolitik und polnische Widerstandsbewegung im Generalgouvernement 1939–1941* (Gütersloh, 1971); Werner Präg and Wolfgang Jacobmeyer (eds), *Das Diensttagebuch des deutschen Generalgouverneurs in Polen 1939–1945* (Stuttgart, 1975), 151.

³⁹ Archiwum Akt Nowych (hereinafter: AAN), A /771/85, Archiwum Zakładu Historii II Wojny Światowej Instytutu Historii PAN, Jan Czochralski, Życie i działalność okupacyjna Prof. Jana Czochralskiego. Dyskusja na posiedzeniu Senackiej Komisji Historii i Tradycji Uczelni PW w dniu 26.III.1984, 12.

⁴⁰ Tomaszewski, *Powrót*, 319. Also APW, Amt des Distriktchefs Warschau 1282, Bericht über die Besichtigung der Prüfanstalten der ehemaligen technischen Hochschule Warschau im Mai 1941; as well as *Politechnika Warszawska, 1915–1965* (Warszawa, 1965), 98.

⁴¹ APW, Amt des Disktriktchefs Warschau 1284, Kazimierz Drewnowski do Komisja Likwidacyjna, Ministerstwo WROF, 18 Jan. 1940.

that various small companies and institutions spontaneously emerged at the university to secure the livelihood of the staff. This way, at the Faculty of Chemistry, cooperation with cosmetic companies was initiated; elsewhere, alcohol was distilled.⁴² In 1984, a former employee of Czochralski's, Ludwik Szenderowski, who had been delegated to the IMM in 1934 from one of the laboratories subordinated to the military, stated at a hearing at the University of Technology that Czochralski had therefore sought permission from the German authorities to open his institute. This way, he prevented his employees from being deported for forced labour.⁴³

At this time, Czochralski tried to establish the normalcy of everyday working life, but in doing so, he disregarded (the initially unwritten) rules within the occupational society not to cooperate with the occupiers under any circumstances.⁴⁴ Others remembered that the reopening had been coordinated with Rector Drewnowski. In this version, the reopening of Czochralski's institute appears as a kind of test to prevent further removal of equipment and valuable instruments. Moreover, the opening was seen as a precedent for reopening other institutes.⁴⁵ In addition to its function as an experimental laboratory, Czochralski's institute subsequently developed into a commercial and industrial workshop where the cosmetic company 'Bion' was established, which Czochralski continued to run after the war.⁴⁶

From May 1940 onwards, eight institutes of the PW resumed operation as testing units with official permission and under the supervision of the German Liquidation Office for the Polish Ministry of Religious Affairs and Education [Abwicklungsstelle]. The physicist Mieczysław Wolfke, also headed such a testing institute.⁴⁷ Those who worked there received a permit from the German Administration

⁴² *Politechnika Warszawska*, 212; Tomasz Szarota, *Okupowanej Warszawy dzień powszedni. Studium historyczne* (Warszawa, 2010⁴), 84.

⁴³ AAN, A /771/85, *Życie i działalność okupacyjna Prof. Jana Czochralskiego*.

⁴⁴ This was mentioned by Prof. Eugeniusz Olszewski, AAN, A /771/85, *Życie i działalność okupacyjna Prof. Jana Czochralskiego*, 25.

⁴⁵ Stanowisko Senackiej Komisji Historii i Tradycji Szkoły w sprawie uchwały Senatu z dnia 19 grudnia 1945 r. dot. prof. Jana Czochralskiego, 25 Feb. 1993, <https://www.pw.edu.pl/Uczelnia/Profesor-Jan-Czochralski-patronem-roku-2013/Dokumenty> [Accessed: 11 March 2021].

⁴⁶ AAN, 203/III-8, *Armia Krajowa, Komenda Główna*, 252.

⁴⁷ APW, Amt des Distriktchefs Warschau 1333, 113.

to enter the grounds of the PW.⁴⁸ The German occupiers, whose goal had been to close all scientific institutions, justified the reopening of the testing institutes by saying that they did not want the facilities to lie idle and aimed at reducing the costs of their maintenance. All capacities had to serve their interests. Teaching and research activities were forbidden.⁴⁹ Only technical orders from authorities, Wehrmacht services or private persons were allowed to be carried out and were paid for.⁵⁰ The directors of the testing units received 10 per cent of the net income of their institutes. Because of numerous orders, the Liquidation Office noted a great demand for such institutes, “especially since many industrial testing laboratories in the Warsaw district had been destroyed during the war”.⁵¹ The draft for the budget of the General Government for the 1940 year stated on this:

The universities, the Technical University in Warsaw, and Poland’s scientific institutes are basically closed. However, this is not strictly carried out everywhere. Some of the scientific institutes continue to operate. Partly it is only a matter of maintaining the most necessary operations or continuing work already begun, partly it is a matter of new tasks assigned to the institutes by the German authorities or the Wehrmacht agencies. The latter applies especially to several institutes of the Technical University in Warsaw, which have been put back into operation as materials testing institutes.⁵²

In Czochralski’s institute during this period, mainly repairs, investigations of alloys and services for Polish industrial companies in Warsaw were carried out, some of which he had already cooperated with before the war and now had to operate for the German armament industry.⁵³ From 1941 onwards, he also fulfilled direct orders from the Wehrmacht. In subsequent years, the occupation regime in Warsaw was confronted with a dilemma of conflicting interests. On the one side, the Ministry of Education in Berlin wanted to strictly avoid the impression that the former University of Technology continued to work as a place of higher education and emphasised the need

⁴⁸ *Ibid.*, 49.

⁴⁹ APW, Amt des Distriktchefs Warschau 1284, 11: Abwicklungsstelle am 9. Mai 1940 an den Rektor der Technischen Hochschule Warschau.

⁵⁰ Präg, Jacobmeyer, Diensttagebuch, 326.

⁵¹ *Ibid.*

⁵² AAN, Regierung des Generalgouvernements 671, Hauptabteilung Finanzen, 54.

⁵³ AAN, A /771/85, Życie i działalność okupacyjna Prof. Jana Czochralskiego, 35.

to place Germans in all leading positions.⁵⁴ On the other side, the Germans in Warsaw felt the need for educated personnel and qualified workers. In this situation, in May 1941, Wilhelm Lührs from the Technical University of Breslau was sent to Warsaw to clarify to what extent the Wehrmacht wished to continue using the institutes.⁵⁵ Lührs demanded that the leadership of the institutes be taken away from the Polish professors and given to German representatives. The Polish professors, he suggested, “could be exploited as assistants at institutes in the Reich. In any case, it is advisable to end the present situation, in which some of the Polish professors act at the same time as directors of technical schools, with or without the permission of the General Governor”.⁵⁶ What struck Lührs about Czochralski’s metal testing institute was the overwhelming amount of modern German equipment that he saw there. He praised Czochralski’s merit for having created the first substitute metals for Germany and claimed that he had been known as “German-friendly” even before the war. In the institute, Lührs met eight scientific employees, eight civil servants and technicians and twenty-nine unskilled workers who produced different items for the Wehrmacht,⁵⁷ observing that: “Work on substitute metal alloys is continuing”. Thus Czochralski ignored the ban on research activities.⁵⁸ This apparently had no consequences, so it can be assumed that Czochralski’s controllers either sanctioned this work or were unable to assess it adequately.

An evaluation of the testing labs followed this visit from the Reich. In July 1941, they merged into one single Technical Testing Institute Warsaw [Technische Prüfanstalt Warschau], with several departments.⁵⁹ In addition, it was decided to set up a Technicum in Warsaw after the winter of 1941 to train a new generation of Polish and Ukrainian technical specialists since the war against the Soviet Union had

⁵⁴ BA Lichterfelde, R 4901-690, 37–38, Herbert Scurla, Bericht über den Stand des Problems wissenschaftliche Einrichtungen im Generalgouvernement, Juli 1941.

⁵⁵ *Ibid.*, 4–5, Bericht über die Besichtigung der Prüfanstalten der ehemaligen technischen Hochschule Warschau.

⁵⁶ *Ibid.*, 6.

⁵⁷ APW, Amt des Distriktchefs Warschau 1282, Bericht über die Besichtigung der Prüfanstalten der ehemaligen technischen Hochschule Warschau, 8.

⁵⁸ *Ibid.*

⁵⁹ APW, Amt des Distriktchefs Warschau 1282, 24–28, Kurator an den Verwalter der Technischen Hochschule am 22. Juli 1941.

dramatically increased the need for skilled workers.⁶⁰ This State Higher Technical School [Staatliche Höhere Technische Fachschule, Państwowa Wyższa Szkoła Techniczna, PWST] began to work on 20 April 1942 with four departments: Civil Engineering, Mechanical Engineering, Electrical Engineering and Chemistry. Teaching was carried out by Polish professors.⁶¹ Now, the German administration in the General Government evaluated the graduates of those schools as vital and decisive to the war effort.

In July 1942, the initial number of students was to be increased from 500 to 1,000–1,200.⁶² Far more than that, 3,000 were interested, which shows that there was a strong demand for education in Warsaw, even under the conditions of occupation (but under Polish teachers). In total, the university took in 1,500 students. The attempt to exploit the assets and the teaching staff for the purposes of the occupiers worked particularly well at the PWST because its curriculum corresponded to the needs of the German war economy for qualified, skilled workers.⁶³ Anything that could give the School the ‘appearance of a university’ was to be avoided, but this did not prevent clandestine teaching.⁶⁴ Czochralski’s institute was not affiliated with the PWST, but continued to function as an independent unit.⁶⁵ Whether the decision not to become part of the PWST was made by Czochralski, the Polish administrator or the Wehrmacht Armament Command in Warsaw cannot be determined. It has been interpreted as a protest and an attempt to preserve the Polish character of the institute by not becoming part of a German school.⁶⁶ Whether Czochralski really had such freedom of choice is not known but is unlikely.⁶⁷ Instead, he found himself in a predicament where the occupiers wanted to sub-

⁶⁰ APW, Amt des Distriktchefs Warschau 1550, 264, Berichte der Abteilung Wissenschaft und Unterricht 1939–1944, Bericht für Oktober 1941.

⁶¹ Maciej Bernhardt, ‘Szkoła Wawelberga i Politechnika Warszawska w latach 1940–1944’, *Zeszyty Historyczne*, cxviii (1996), 95–108.

⁶² AAN, Regierung des Generalgouvernements 1277, Hauptabteilung Finanzen, 8.

⁶³ Majewski, *Wojna*, 169.

⁶⁴ APW, Amt des Distriktchefs Warschau 1283, 43, Hauptabteilung Wissenschaft und Unterricht, 27 Jan. 1942.

⁶⁵ *Politechnika Warszawska*, 102.

⁶⁶ *Ibid.*, 149.

⁶⁷ Such a conclusion was also drawn by the historian Tomasz Strzembosz, see AAN, A /771/85, *Życie i działalność okupacyjna Prof. Jana Czochralskiego*, 21.

ordinate his knowledge and practical skills (the resource 'Czochralski') to their purposes.

We can reconstruct the jobs Czochralski carried out from 1941 onwards from various sources. Two reports from the Home Army show that fifty workers and twenty-three employees worked there in a research laboratory, a mechanical workshop and a foundry. The monthly production of the foundry was estimated by the Home Army to be significant: 6000 crank rods, 2000 kg of pistons for cars, 2000 kg of special parts, 400 kg of foundry products made of bronze, aluminium and other materials; additionally, 900 kg of stock metals were said to have been produced by the institute as of January 1944. The report also listed chemical investigations, strength tests and metallographic examinations, which again indicates that Czochralski not only produced materials but also conducted research.⁶⁸ So the testing facility worked as a research and expert laboratory for the Wehrmacht's Armament Command. For production, the plant received allocations of petroleum and petrol – of which there was the greatest shortage at the time.⁶⁹

Besides those activities in Warsaw that led to discussions about Czochralski 'collaborating' with the occupier,⁷⁰ Czochralski cooperated with the Polish underground, providing information about German industry, equipment, and sharing his petrol supplies. He also issued certificates to individual members of the Home Army.⁷¹ Some memoirs reveal that he helped various people to get out of the concentration camps to which they had been deported, especially at the beginning of the occupation.⁷² For example, after the University of Technology employee Stanisław Porejko was arrested and taken to the Sachsenhausen and Gusen camps, he was released thanks to Czochralski's efforts.⁷³ We know very little about Czochralski's personal contacts

⁶⁸ AAN, 203/III-7, Armia Krajowa, Komenda Główna, 32, Przemysł Wojenny, Raport na styczeń 1944.

⁶⁹ AAN, 203/III-6, Armia Krajowa, Komenda Główna, 447, Materiały wywiadowe o sytuacji w przemyśle 1944.

⁷⁰ See Cain, *Wissen im Untergrund*, 425.

⁷¹ AAN, 203/III-8, Armia Krajowa, Komenda Główna, 252, 253. See also Tomaszewski, *Powrót*, 247–57.

⁷² *Politechnika Warszawska*, 214.

⁷³ *Politechnika Warszawska 1939–1945. Wspomnienia pracowników i studentów* (Warszawa, 1990), 148.

with the German occupation authorities, and his contacts with Germany during this time are also hard to trace. However, what is known is that he continued to be in occasional contact with the Frankfurt Metallgesellschaft about financial matters, but these contacts were more formal.⁷⁴

Overall, Jan Czochralski maintained quite a privileged position during the occupation, thanks to his expertise, since the ‘Czochralski’ resource was highly appreciated and therefore exploited by the German occupier. Thanks to his familiarity with German culture and science, communication with the occupier was made much easier as well. After the war, Czochralski was accused of collaborating with the enemy, and although he was not formally sued, he lost his job and moved back to his hometown of Kcynia. The accusation of having ‘two fatherlands’, which in interwar Poland was already clearly associated with him by his enemies, characterised by indecisiveness, wavering loyalty and potential betrayal of the fatherland, extended from that time into the occupation period. It was potentiated under the occupational policy of violence and then after the war. This distinguished Czochralski’s situation from that of other Poles who also cooperated with the Germans – not all of them lost their jobs and their (moral) standing after 1945.⁷⁵ Czochralski, though, had not been able to establish himself in a stable scientific milieu, and then he was stuck in the dilemma that parts of Polish society demanded a clear stance from him where the ‘good’ was linked to an unequivocally resistant attitude. Due to the pre-war discussions about his German citizenship, his ‘Germanised’ knowledge, the power he had accumulated in a short time in Poland and the personal animosities this evoked, his actions after 1939 should have been unmistakably linked only to the resistance

⁷⁴ Hessisches Wirtschaftsarchiv 119, Kasten 26, Metallgesellschaft an Czochralski am 9. August 1940.

⁷⁵ The question, why Czochralski was condemned after the war in a way others were not, has also been on the mind of Włodzimierz Borodziej. In one of our mail-exchanges from May 2021 he came to the conclusion that alludes to what has been said here earlier: “Chodzi o samca alfa: wie lepiej, zna więcej wpływowych osób, potrafi załatwić środki na swoje badania, żyje dobrze z władzą. Ale brakuje mu tzw. środowiska, bo go za jego sprawczość nie znoszą” [It is about the alpha male: he knows better, he knows more influential people, he can arrange funds for his research, he lives well with the governors. But he lacks the so-called ‘milieu’ because he is hated for his proficiency].

movement – in that case, he might have faced less attention after the war, just as others who also cooperated with the occupiers. He made compromises, though, to be able to work, to protect his employees and his German-speaking family.

Regardless of all the difficulties and dilemmas involved, he must nevertheless be considered privileged compared to many other academics in Poland during the occupation – but this again does not imply any moral judgement. For him, there was no simple bipolarity of ‘obedience-or-resistance’, as Alf Lüdtke mentioned above called it. For Czochralski, the dynamics of the German occupation meant cooperation with the Polish underground, resistant behaviour in the form of help for the persecuted and scientific work, which he continued, as well as contacts with and cooperation with the German occupiers. The question – from the point of view of Polish society and his colleagues, who condemned him for his actions after 1945 and excluded him from their circles – of whether he contributed to the stabilisation of National Socialist power relations by his actions, or the moral imperative that he should have resisted, possibly misses the point of Jan Czochralski’s everyday experience in the coercive situation of the occupation.

2. LUDWIK HIRSZFELD IN THE FORCED COMMUNITY OF THE WARSAW GHETTO

Ludwik Hirszfeld’s scope for action during the occupation was much more limited than Czochralski’s, since his Jewish origins determined his life from 1939 onwards. For him, every confrontation with the occupier – in contrast to Czochralski – could be life-threatening.⁷⁶ Nevertheless, he tried to continue his work as well. During the fighting in September 1939, he first organised a centre for blood donations for injured soldiers and civilians in the Ujazdowski Hospital in Warsaw. His workplace, the PZH, had been considerably damaged at the start of the war. Many staff members had left it; some had been evacuated eastwards to Łuck/Lutsk with their director Gustaw Szulc at the beginning of September 1939. After Soviet troops invaded eastern Poland on 17 September 1939, the group received permission

⁷⁶ Lüdtke, ‘Einleitung: Herrschaft als soziale Praxis’, 9–63 (here 47).

to return on 2 October 1939. The buildings were quickly repaired, and the institute resumed its work on 1 November.⁷⁷ In autumn 1940, Rudolf Kudicke, who, like Ludwik Hirszfelf, had worked at the Cancer Research Institute in Heidelberg, took over as head of the institute. And from 1942, the typhus department was headed by the physician Rudolf Wohlrab, who had previously worked at the health office of the General Government.

Like the PW, the PZH was now exploited for the goals of the German occupation regime, in this case, above all, in the fight against the spread of epidemics – for which the expertise of Hirszfelf could have been of great interest and help. But Ludwik Hirszfelf lost his position in early November 1939, when Gustaw Szulc informed him that he had to dismiss all Jewish employees. For the first time in his scientific life, Hirszfelf found himself without institutional ties and without an income – a situation he described as extremely difficult.⁷⁸

The Hirszfelfs' house in the Saska Kępa district of Warsaw, where he worked from then on, developed into a meeting place for various relatives, friends, academics and scientists during the period from September 1939 to February 1941, some of whose houses had been destroyed or who had fled their previous place of residence for various reasons. Because German soldiers occupied the house of his brother-in-law, Stanisław Kielbasiński, who had been deported to Dachau, Hanna Hirszfelf's sister, Izabela Klocman (née Belin) and her daughter, Hanna Klicka, also lived with the Hirszfelfs.⁷⁹ From the invasion until February 1941, Ludwik Hirszfelf worked at home, with the support of his long-time assistant, Róża Amzel, who also had to leave the Hygiene Institute. They researched the heritability of blood groups' transitional forms, and Hirszfelf also worked on a textbook on immunology.⁸⁰

When the German occupiers ordered all Jews in Warsaw to move into the area of the Warsaw Ghetto in 1940, the Hirszfelfs were still allowed to stay in their house. They were thinking about fleeing

⁷⁷ Marta Gromulska, 'Państwowy Zakład Higieny w czasie wojny 1939–1944', *Przegląd Epidemiologiczny*, 62 (2008), 719–25 (here 720).

⁷⁸ Ludwik Hirszfelf, *Geschichte eines Lebens* (Paderborn, 2018), 188.

⁷⁹ Yad Vashem Testimonies, Record Group 0.3, File 1308, Hanna Klicka, 5 July 1959.

⁸⁰ Hirszfelf, *Geschichte eines Lebens*, 189.

Poland – Hirszfeld was offered visas by his Heidelberg colleague from New York, Arthur Coca – but he was not given permission to leave the country.⁸¹ The family then tried to obtain visas for Yugoslavia. During this time, the Hirszfelds still felt relatively safe, because as early as December 1940, after meeting personally with representatives of the health administration, Hirszfeld had received a certificate from the Warsaw Chamber of Health. This assured him help from the German health functionaries since his work was well-known in Germany. The certificate confirmed that he was about to emigrate to Yugoslavia. And “since Prof. Hirszfeld does not exercise any medical activity in treating patients, he may keep his flat outside the Jewish residential area until the time of his departure for Yugoslavia”, it said. It had been signed by Dr Arnold Lamprecht, the head of the Health Department in Warsaw.⁸² Hirszfeld believed this – he trusted in the German bureaucracy’s ‘normal’ functioning and had misjudged the constellation of absolute lawlessness for people of Jewish origin. In the end, he and other Christian Varsovians of Jewish descent were forced to move into the ghetto in February 1941, which came as quite a shock to him.

The Hirszfelds’ property was confiscated, and they moved into the clearly defined and totally overpopulated neighbourhood, with unbearable food and housing conditions, where an average of thirteen people had to share one room.⁸³ They initially stayed with friends on Grzybowska Street, an accommodation that Hirszfeld found torturous, partly because of the street noise. In September 1941, they were able to enter their own flat in the parish of the All-Saints’ Church on Grzybowski Square.⁸⁴ There, about fifty Christians of Jewish descent found shelter, which was considered a privileged accommodation in the ghetto, partly because of the better supply of food. Hirszfeld’s colleague, Henryk Makower, described this place as “so quiet and peaceful” that the feeling arose that there was no ghetto and

⁸¹ Archiwum Polskiej Akademii Nauk w Warszawie (hereinafter: APAN), Materiały Ludwika Hirszfelda i Hanny Hirszfeldowej (hereinafter: LH) III-157-109, 95, 96, Arthur Coca to Ludwik Hirszfeld, 5 July 1940, 14 Jan. 1941.

⁸² APAN, LH III-157-95, 68, Gesundheitskammer to Ludwik Hirszfeld, Ausweis, 3 Feb. 1940.

⁸³ Reuben Ainsztein, *Jüdischer Widerstand im deutschbesetzten Osteuropa während des Zweiten Weltkrieges* (Oldenburg, 1993), 279.

⁸⁴ Hirszfeld, *Geschichte eines Lebens*, 266.

no war.⁸⁵ The Hirszfelds' place of residence stood, almost paradigmatically, for a constellation that expressed itself in mutual feelings of foreignness among ghetto residents – the gap between those Polish Jews who identified as Jewish, professed Jewish culture and religion and often spoke Yiddish, and those who had dissolved this attachment, such as the Hirszfelds.⁸⁶ And the majority of the ghetto inmates looked at those assimilated fellows with suspicion.⁸⁷

For the Hirszfelds – and this applies to all ghetto inhabitants – the ghetto was a forced community that had not grown out of social, political, economic or demographic processes, but was established with the aim of isolating Jews, impoverishing them and ultimately murdering them. Terror and violence were omnipresent. Nevertheless, the ghetto inhabitants had to develop an everyday routine, they had to live and earn money if possible. Many tried to save something of their old lives and experiences as individuals or as a community. Life in the ghetto thus was situated in a permanent field of tension – on the one hand it contained numerous similarities to regular life; on the other hand, it contradicted any notions of 'social normality', as Dalia Ofer has noted in reference to Emile Durkheim.⁸⁸

From the beginning, both Hirszfelds strove precisely for this normality and to continue their medical, scientific or health-political activities from the pre-ghetto period, even though the limits of their efforts were revealed to them every day. The medical services of doctors were of great importance in the ghetto, for they were supposed to help maintain people's ability to work. And work was considered one of the most crucial survival strategies of all.⁸⁹ Testimonies convey the image

⁸⁵ Henryk Makower, *Pamiętnik z getta warszawskiego: październik 1940 – styczeń 1943* (Wrocław, 1987), 211.

⁸⁶ See on this Justyna Majewska. "Czym wytłumaczy Pan...?" Inteligencja żydowska o polonizacji i asymilacji w getcie warszawskim', *Zagłada Żydów. Studia i Materiały*, 11 (2015), 325–46.

⁸⁷ Katarzyna Person, *Assimilated Jews in the Warsaw Ghetto, 1940–1943* (Syracuse, 2014), 36.

⁸⁸ Dalia Ofer, 'Ghetto Inmates: Their Perspectives and the Historian's Craft', in Imke Hansen, Katrin Steffen, and Joachim Tauber (eds), *Lebenswelt Ghetto. Alltag und soziales Umfeld während der nationalsozialistischen Verfolgung* (Wiesbaden, 2013), 52–70 (here 52).

⁸⁹ Hansen, Steffen, and Tauber, *Lebenswelt Ghetto*; and Jürgen Hensel and Stephan Lehnstaedt (eds), *Arbeit in den nationalsozialistischen Ghettos* (Osnabrück, 2013).

of active professional lives – doctors practised, taught, gave lectures, and discussed with colleagues. The profession of doctors or other health care professions could be an advantage in the ghetto.⁹⁰ It gave meaning to life since doctors were urgently needed. Even if the work was often frustrating in the face of unmanageable tasks, it seemed to give the doctors the courage and the energy to continue.⁹¹ And if they were employed in hospitals, they had a permanent place where they could pursue their work and earn a living.⁹² Doctors had fairly frequent contacts with non-Jewish colleagues or patients on the so-called ‘Aryan side’, which enabled them to mobilise additional resources or even to flee and hide.⁹³ So overall, in the most non-privileged constellation of the Nazi occupation and its racial policies, nevertheless, doctors found themselves among the privileged occupational groups in the ghetto – in contrast to many other members of the intelligentsia, since belonging to this group in the world of the ghetto, where practical skills were quite important, was a disadvantage rather than an advantage.

Ludwik Hirszfeld tried to continue his pre-war activities in the ghetto: as an expert in health policy, a researcher and a teacher. His job as head of the Health Council at the Warsaw Jewish Council was to involve, coordinate and evaluate all health institutions in the fight against contagious diseases and improve sanitary and hygienic conditions.⁹⁴ The most critical concern of the Health Council was to combat the rampant typhus epidemic among the Jewish population of Warsaw, which had already begun before the ghetto was completely sealed off, when up to 10,000 cases with 5,000 deaths were reported from January to June 1940. Although tuberculosis ultimately caused most deaths in the ghetto, typhus played a more significant role in its history; it was considered the ‘terror of the ghetto’.⁹⁵

⁹⁰ Dalia Ofer, ‘Another Glance through the Historian’s Lens: Testimonies in the Study of Health and Medicine in the Ghetto’, *Poetics Today*, xxvii, 2 (2006), 331–51 (here 342).

⁹¹ Ofer, ‘Glance’, 344.

⁹² *Ibid.*, 348; Adam Brown, *Judging Privileged Jews. Holocaust Ethics, Representation, and the Grey Zone* (New York, 2013).

⁹³ Ofer, ‘Glance’, 344; *ead.*, ‘Ghetto Inmates’, 69.

⁹⁴ Yad Vashem Testimonies, Record Group 0.3, File 438, Dr. M. Tursz.

⁹⁵ Barbara Engelking and Jacek Leociak, *The Warsaw Ghetto: A Guide to a Perished City* (London, 2009), 280.

The Jewish population of Warsaw could not hope for any help from the German occupiers' health policy or its functionaries. The corresponding goals for the General Government had been limited by the NSDAP's Office of Racial Policy to restricting medical care "to the prevention of the transmission of epidemics into the Reich territory". The German authorities were not only "indifferent" to the "health fate of the Jews"; even their reproduction was to be prevented "in every possible way".⁹⁶ According to the doctor and head of the Society for Safeguarding the Health of the Jewish Population [Towarzystwo Ochrony Zdrowia Ludności Żydowskiej, TOZ] in the Warsaw Ghetto, Mojżesz Tursz, the ghetto inhabitants were turned into "guinea pigs on which to observe the speed and quality of the spreading epidemic, the only difference being that no one would have thought of torturing and needlessly starving the guinea pigs".⁹⁷

Ludwik Hirszfeld had already exposed German anti-Jewish propaganda in May 1940 as a manipulation, taking advantage of the fear of the disease. As one of the world's leading experts in serology, well-known in Germany, Hirszfeld was, in principle, in a good position to criticise racist German epidemiology. As early as May 1940, the American Joint Distribution Committee asked him to prepare an expert opinion on the alleged racial pathological phenomena among Jews.⁹⁸ In his *Denkschrift über die Ursachen des Flecktyphus in Warschau und Vorschläge zu seiner Bekämpfung* [Memorandum on the Causes of Typhus in Warsaw and Proposals for its Control] of 15 May 1940, Hirszfeld argued, regarding the latest research results on typhus from the years before the outbreak of the Second World War, that the Warsaw Jews were by no means in a worse condition in terms of health compared to the non-Jewish population of the city – their mortality was actually lower. He also proved that typhus, which many Germans had, since the First World War, localised mainly in the Eastern parts of Europe and there, among 'the Jews', existed independently of both the East and the Jewish group. This was confirmed by the fact that there was hardly any

⁹⁶ E[rhard] Wetzel and G[ünther] Hecht, 'Die Frage der Behandlung der Bevölkerung der ehemaligen polnischen Gebiete nach rassenpolitischen Gesichtspunkten, im Auftrag des Rassenpolitischen Amtes der NSDAP vom 25.11.1939', in *Documenta occupationis*, v (Poznań, 1952), 2–28, esp. 26–8.

⁹⁷ Yad Vashem Testimonies, Record Group 0.3, File 438, Dr. M. Tursz.

⁹⁸ Makower, *Pamiętnik*, 107. This was the first of three memoranda by Hirszfeld.

immunity to the disease among the Jewish population, while German doctors claimed that typhus caused more damage among Germans than among Jews because the latter had developed a higher resistance to it.⁹⁹ Thus, Hirszfeld scientifically exposed the German claim that typhus was a ‘Jewish fever’ as mere propaganda.

Already in the ghetto, he continued to write memoranda to the German health administration to improve the sanitary, hygienic, and above all, the economic conditions of the ghetto inmates.¹⁰⁰ Hirszfeld also discussed these issues with German officials, such as the German commissar of the ghetto, Heinz Auerswald, and with the head of the PZH, Robert Kudicke. While such meetings were largely ineffective, they at least led to minor modifications of some of the most draconian instructions issued by the German health administration throughout 1941. However, the German health administration remained mainly interested in preventing the epidemic from spreading to the ‘Aryan side’, not in improving the situation of the Jews who had been imprisoned.¹⁰¹ They left the fighting the epidemic to the Jewish Council, which did not have the means to do so effectively.¹⁰²

Wilhelm Hagen, who had come to Warsaw as chief physician of the city in November 1940 and became head of the health service there, repeatedly made this clear himself. Hagen, who had been a member of the Social Democrats before 1933, always tried to contrast the occupation policy of the German rulers with his own humanitarian aspirations in health policy – in fact, Hagen had on several occasions championed the health of the non-Jewish population, but remained quite indifferent to the fate of Jews. On the scene in Warsaw, his sole

⁹⁹ Myron Winick, ‘Jewish Medical Resistance in the Warsaw Ghetto’, in Michael A. Grodin (ed.), *Jewish Medical Resistance in the Holocaust* (New York–Oxford, 2014), 93–105 (here 96); Ernst G. Nauck, ‘Die Geißel “Fleckfieber”’. Die Fleckfieberforschungsstelle des Hamburger Tropeninstituts im Staatlichen Institut für Hygiene in Warschau’, in Jost Walbaum (ed.), *Kampf den Seuchen! Deutscher Ärzte-Einsatz im Osten. Die Aufbauarbeit im Gesundheitswesen des Generalgouvernements* (Krakau, 1941), 83–92 (here 84).

¹⁰⁰ APAN, LH III-157-71, 21–23, Denkschrift über die Ursachen des Flecktyphus in Warschau und Vorschläge zu seiner Bekämpfung, 15 May 1940.

¹⁰¹ Cf. Ute Caumanns and Michael G. Esch, ‘Fleckfieber und Fleckfieberbekämpfung im Warschauer Ghetto und die Tätigkeit der deutschen Gesundheitsverwaltung’, in Wolfgang Woelk and Jörg Vögele (eds), *Geschichte der Gesundheitspolitik in Deutschland* (Berlin, 2002), 225–62 (here 261).

¹⁰² Yad Vashem Testimonies, Record Group 0.3, File 438, Dr. M. Tursz.

concern was to reduce the risk of an epidemic among the non-Jewish population.¹⁰³ Like other German doctors in the General Government, Hagen accepted the racist assumption that Jews were special carriers of typhus, although he could and should have known better as a doctor.¹⁰⁴

In matters of detail in the measures against the epidemic, the Health Council was able to achieve little improvements, but Hagen remained convinced that Jews had to be ghettoised to combat the epidemic. In this context, he recommended that ‘vagabond Jews’ be shot.¹⁰⁵ How little interest there was in containing the epidemic of typhus in the ghetto, moreover, how little willingness there was to admit this, is shown by a statement of Rudolf Wohlrab, Hagen’s co-worker until 1942, who seriously claimed in a conversation after the war that there had been no epidemic of typhus in the ghetto at all. He called this a terrible exaggeration.¹⁰⁶ And while the Polish-Jewish historian Joseph Wulf, who documented the history of the Nazi crimes after the war, was convinced that Hagen was one of the perpetrators of the Nazi regime because of his ‘racial prejudice’ against the Jewish population, he was not allowed to write this because of a court settlement in 1968.¹⁰⁷ On the other hand, Hagen was convinced that he had not been a perpetrator. In the 1970s, he wrote a postcard to his former co-worker Rudolf Wohlrab, stating: “It is good, when we, the elderly, can say to ourselves that what we have experienced and done, is in accordance with our conscience. May it always be that way”.¹⁰⁸ Jewish memory and non-Jewish relief strategy could not have been at greater odds.

In addition to his rather applied scientific work for the Health Council, Ludwik Hirszfeld tried to pursue and continue research on blood groups and immunity. He spent a lot of time in the bacteriological

¹⁰³ Christian Schulze, *Wilhelm Hagen und die Seuchenbekämpfung im Generalgouvernement 1941–1943* (Kiel, 1994), 59.

¹⁰⁴ Christopher R. Browning, *The Path to Genocide: Essays on Launching the Final Solution* (New York, 1992), 155–6.

¹⁰⁵ Schulze, *Wilhelm Hagen*, 66.

¹⁰⁶ Marta Balińska, ‘Choroba jako ideologia. Tyfus plamisty w okupowanej Polsce (1939–1944)’, *Zeszyty Historyczne*, cxxvi (1998), 212–21 (here 218).

¹⁰⁷ Yad Vashem Testimonies, Record Group 0.3, File 1836/a: Dr. Hagen. Wulf an Krausnick, 5 May 1963.

¹⁰⁸ Cited after Balińska, ‘Choroba jako ideologia’, 221, from Polish.

laboratory he founded. There, relying on his experience from the First World War and the Second Polish Republic, he set up the only blood donation centre in the ghetto.¹⁰⁹ He was given five rooms for his institution in the Czyste Hospital on Stawki Street, which he shared with other doctors and bacteriologists. Initially, he was met with suspicion there, as Chaim Einhorn recalled: “One day ... Dr Milejkowski took Dr Hirszfeld to the hospital. At first, we, the younger doctors, wanted to protest against Prof. Hirszfeld and started to strike. We thought he was a stranger. Later, however, our relations normalised, and in questions of research, we worked very well together”. Einhorn recalled that Hirszfeld had led the research division in the hospital and that his assistant, Róża Amzel, helped him. Many other doctors were involved, but almost none of them survived.¹¹⁰

Equipping the bacteriology laboratory posed great difficulties for Hirszfeld and the other researchers. Some of the equipment and substances for Hirszfeld’s lab came from the ‘Aryan side’. The research work in the ghetto could only be carried out with great improvisational skills because the equipment was necessarily meagre under the prevailing conditions. In addition, like so many others, all staff suffered from hunger and disease, leading Hirszfeld to state: “I would not have believed myself that one could be scientifically active under such conditions”.¹¹¹ Hirszfeld, therefore, considered it a miracle when scientific results began to show up. Some of them were fragmentary, some of them led to new insights, and almost all of them were published. Before the war, for example, Hirszfeld had started research work with Róża Amzel on certain forms and characteristics of blood group 0 and had foreseen them, but had not been able to specify them – he only managed to do this in the ghetto, where he kept a log of his blood tests in 1941.¹¹² Despite difficult conditions, he published this work in 1946, co-authored with Róża Amzel, who had not survived.¹¹³ Furthermore, Hirszfeld

¹⁰⁹ Engelking and Leociak, *The Warsaw Ghetto*, 95

¹¹⁰ Yad Vashem Testimonies Record Group 0.3, File 1836, Dr. Chaim Einhorn, 8 May 1961.

¹¹¹ Hirszfeld, *Geschichte eines Lebens*, 225.

¹¹² Yad Vashem Testimonies, Record Group 0.3, File 1074, H. Fenigstein.

¹¹³ Ludwik Hirszfeld and Róża Amzel, ‘O postaciach przejściowych (podgrupach) w obrębie grupy 0. Doniesienie tymczasowe’, *Polski Tygodnik Lekarski*, 1 (1946), 1525–27.

proved that the blood of Jews took on the characteristics of the blood of the surrounding populations.¹¹⁴ This way, he wanted to expose the notion of a ‘Jewish race’ as propaganda. And finally, typhus had once again become one of the most important topics of his research, as it had been during the First World War. Because he had no centrifuge, he had to improvise and cultivate bacterial strains in other ways. New ways of diagnosing typhus from the urine of those affected emerged – he mainly worked on this with Tekla Epsteinówna, another one of his collaborators from the PZH.¹¹⁵ As late as 1942, Hirszfeld gave a presentation on the “serological-bacteriological identification of spotted fever” at a meeting of doctors. However, he had to interrupt this research shortly afterwards. The manuscript made it out of the ghetto, and after the war, in March 1946, Hirszfeld published it – though again, his colleague could only appear posthumously as co-author, because Tekla Epsteinówna had died in a car accident in the ghetto.¹¹⁶ In this text, Hirszfeld referred to Ludwik Fleck, who, independently of them and in a somewhat different way, had discovered a procedure in the Lwów/Lviv ghetto for diagnosing and producing a typhus vaccine from the urine of infected people.¹¹⁷

Overall, these research activities fulfilled an important function for the doctors involved, because they gave meaning to their existence. They met weekly to discuss results and this felt like the normal process of physicians working in a hospital. Chaim Einhorn emphasised that these meetings had the character of scientific discussions and were conducted “as if we were living in normal times. One can forget about all the external life, everything that was bad and cruel. That is a beautiful memory from the ghetto”.¹¹⁸ This mirrors Hirszfeld’s description of the work in the laboratory as “the most important

¹¹⁴ Ryszard Zabłotniak, ‘Wydział Lekarski w getcie warszawskim’, *Biuletyn Żydowskiego Instytutu Historycznego*, 74 (1970), 81–5 (here 85).

¹¹⁵ Hirszfeld, *Geschichte eines Lebens*, 270.

¹¹⁶ Ludwik Hirszfeld and Tekla Epsteinówna, ‘Próby serologiczno-bakteriologicznego’, *Polski Tygodnik Lekarski*, 11 (1946), 329–30.

¹¹⁷ George M. Weisz and Andrzej Grabowski, ‘Medical Discoveries in the Ghettos: The Anti-Typhus Battle’, *Israel Medical Association Journal*, 13 (2011), 261–5.

¹¹⁸ Yad Vashem Testimonies, Record Group 0.3, File 1836, Dr. Chaim Einhorn, 8 May 1961.

content of my life” in the ghetto.¹¹⁹ He was equally convinced that teaching in the structures of the clandestine school for medical studies was a very important task, since for him and for the students, this was yet another attempt to lead a normal life.¹²⁰

When life in the ghetto became ever more desperate and dangerous, Hirszfeld decided to flee, shortly before or after the mass deportations to Treblinka began in the summer of 1942. He wanted to save the life of his daughter Maria, who was seriously ill. He was able to organise this because of the privileged position that he occupied within the ghetto community (and beyond its borders). Several non-Jewish friends and colleagues helped the family to escape.¹²¹ Hirszfeld survived in hiding (although he did lose his only daughter) and continued to be a scientist in postwar Poland.

His position as a Jewish convert to Christianity had not been an easy one in the ghetto community; moreover, he was also provided with the privileges of doctors: he had work, he could give meaning to his existence, he tried to remain true to his epistemic ideals, especially of ‘truth’ under the exceptional conditions, and he kept a semblance of his previous professional status. He managed to maintain his professional work as best as he could under the conditions of the ghetto. He was even able to continue research and initiate new research under the most unfavourable conditions. He communicated with the German occupiers and, because he had no other choice, adapted to the structures in the ghetto and the Jewish Council. He tried to expose the premises and actions of the German health politicians for what they were, part of a genocidal plan of extermination. He endeavoured to improve and undermine the senseless instructions of the Germans, especially in the fight against typhus – this may have made little difference to the prevailing situation, but for the inhabitants of the ghetto, every case of typhus that did not spread, mattered. In this respect, his actions in health policy, his teaching and his efforts to continue research and discussions with other doctors, were also acts of resistance that endangered his life.

¹¹⁹ Hirszfeld, *Geschichte eines Lebens*, 224.

¹²⁰ *Ibid.*

¹²¹ APAN, LH III-157-76, 12–17, Manuscript for a speech by Ludwik Hirszfeld, 25 Oct. 1947.

IV
MAKING SENSE IN THE GREY ZONES OF OCCUPATION

The goal of the German occupiers to eliminate the social role of science and scientific education in Warsaw and Poland, was achieved insofar as almost all scientific institutions were closed, and the opportunities for earning a living in this field became extremely limited. The occupiers allowed some scientific training with the participation of Polish university teachers, only when they were dependent on knowledge and specialists useful to the war economy. They sought to exploit both knowledge and equipment for their own purposes. The occupation society benefited from this to some extent, as they could continue earning a living on a low level and were protected from deportation and forced labour. Never were the occupiers and the occupied equal partners – the various institutes at the Warsaw University of Technology could continue to work, but they had to subordinate themselves to the needs of the occupiers within a framework of asymmetrical power relations. Due to the will to resist on the part of large sections of Polish society, the German occupiers were ultimately unable to control those processes completely. This applied to all forms of science and education in the underground and at the PW. Medical education in the Warsaw Ghetto must also be counted among these, even though conditions in the ghetto were even more difficult because of the ever-present threat of death. In this framework, the lives of Jan Czochralski and Ludwik Hirszfeld were marked by attempts to continue to create meaning in their lives and to maintain a daily scientific routine. Though the extent was limited, both succeeded in this. While the occupiers did not pursue any strategies regarding the Jewish society other than to murder them, with the non-Jewish community, it seems that they strove for the rule that also aimed at ‘docility’ [*Fügsamkeit*] (Max Weber) in those fields where it was useful for them, such as in the war economy – in other words, a rule that is both accepted and consented to at the same time – at least that is how the occupiers behaved at the PW.¹²²

Czochralski and Hirszfeld each wanted to defy the rules set by the rulers and, within the framework in which they were able to do so, behaved in a resistant manner in different ways and with varying

¹²² Lüdtke, ‘Einleitung: Herrschaft als soziale Praxis’, 58.

intensity. They wanted to conduct research where research was forbidden, teach when this could have been punished by death, and help others when they could. They were able to do this primarily because they were privileged, depending on the constellation in which they predominantly found themselves during the occupation, even though these privileges must be seen as relative, and this is especially true of life in the Warsaw Ghetto. Jan Czochralski, compared to other members of the intelligentsia, continued to have opportunities to earn money through contact with the occupiers, although we do not know the exact nature of these contacts, and he did not have to fear for his life. His expertise was still in demand, both from the Germans and the Polish underground. In this situation, he made the fundamental compromise of working with the occupiers – it was a situation of accepting what made sense to him, which corresponded to his *Eigensinn*, although we do not know what Czochralski may have been forced to do. It seems that he got involved with the occupiers precisely to the extent that he had to, while at the same time pursuing his own research goals, living his life and protecting his institute and family.

Ludwik Hirszfeld's expertise, on the other hand, was not in demand by the occupier. They placed their racial ideology above his knowledge, though they could have ultimately profited from it. Yet, his expertise was in demand in the forced community of the ghetto, where he tried to apply it in those areas that were familiar to him from the pre-war years. Compared to other ghetto residents, Ludwik Hirszfeld was also privileged. As a Christian, he had a comparatively good place to live, he had a 'job' in his bacteriology laboratory, he could feel needed as a doctor, expert and teacher, while so many others had been deprived of any employment opportunities and thus also of a sense of meaning. Although he felt like an object of occupation policy, he was always anxious to act as a subject and not endure his fate passively.

Both scientists met with hesitation in postwar society because of their behaviour during the occupation. Czochralski was morally condemned for violating the consensus, mainly created retrospectively, to not cooperate with the occupiers. The nuances of his actions were not recognised; instead, the conflicts and personal animosities from the period immediately before the war were transferred onto the war and the postwar world. Moreover, Czochralski's experiences under foreign occupation collided with those of other Poles who experienced violence, powerlessness and economic coercion and

life-threatening situations. These different experiences resulted in different memory practices, of suffering, as well as resistance – Czochralski's experiences were too ambiguous for those practices. In Hirszfelf's case, a part of Polish society also missed such unambiguity. He was met with moral judgement from several Jews in Poland, especially after the publication of his autobiography, in which he maintained a separation of 'you' (Jews) and 'we' (non-Jews) and sometimes spoke about 'the Jews' in a rather pitiful tone.¹²³ In addition, there was an ethical problem behind Hirszfelfs' escape, namely the question of whether it was allowed for doctors in the ghetto to leave their patients behind. Hirszfelf explained this by the wish to save both his sick daughter and his dignity. Other survivors did not accept this – they claimed that one saved one's dignity by remaining in the ghetto.¹²⁴ So there was a moral condemnation of Hirszfelf, although he also had to live in the complex situation of occupation. In this context, Italian author and Holocaust survivor Primo Levi coined the term 'grey zone', which describes the dilemma of cooperating with the authorities in the camps and ghettos in a way that could harm others but could also ensure survival. This form of forced cooperation seemed to blur the lines between 'perpetrators' and 'victims', which led to the moral condemnation of those involved after the war. Levi himself questioned whether we should judge or condemn this kind of behaviour at all, given the unimaginable coercive situation created by the occupiers.¹²⁵

Rather than evoke moral judgements, both lives highlight different spaces for manoeuvre, constraints and contradictions of social life under the conditions of occupation. The forms and norms of behaviour in an occupied society were not very clear and included cooperation as well as differences and friction, acceptance, evasion and exploitation. This is not surprising because occupation rule is always to be seen as social practice, as a field in which power is asserted, and the rule is established or doubted. Contradictions and inequalities

¹²³ Marta Aleksandra Balińska and William H. Schneider (eds), *Ludwik Hirszfelf. The Story of One Life* (Rochester, 2010), 196–7.

¹²⁴ Anka Grupińska, *Ciągle po kole, Rozmowy z żołnierzami getta warszawskiego* (Warszawa, 2013²), 139.

¹²⁵ Primo Levi, 'The Gray Zone', in Omer Bartov (ed.), *Holocaust: Origins, Implementation, Aftermath* (London, 1999), 251–71.

appear between the occupiers and the occupied, but also among the occupied themselves, which is demonstrated in the lives of Hirszfeld and Czochralski.

proofreading Nicholas Siekierski

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Katrin Steffen – history of East Central and Eastern Europe, modern Polish history, Jewish history and culture; transnational history of science; history of migration; professor at the University of Sussex in Brighton; e-mail: K.Steffen@sussex.ac.uk