

War after War

Wilhelm Krelle, 1916-2004

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Abstract: Wilhelm Krelle (1916-2004) had two careers; one before 1945 as an officer in the German Army (*Wehrmacht*), and a second after 1945 as an economist in West Germany. After retirement, he was honored as the economist who brought modern modeling techniques, Lawrence Klein's macro-econometrics in particular, from the U.S. to West Germany. After his engagement in the reform of East German economics, however, his person was discredited as his early career became public. This essay reconstructs Krelle's career in his attempt and struggle to maintain moral integrity in and between the various domains of his troubled life as officer, economist, political adviser, father, and husband.

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“Suffering ceases to be suffering at the moment it finds a meaning, such as the meaning of a sacrifice” (Viktor Frankl).²

Total War

Germany, October 1944. The National Socialist movement had reached its ultimate delirium. On all fronts, in the East and in the West and in many cities, more and more troops were being called up and summoned to fight for the final victory. As the losses mounted, the pressure to mobilize all remaining resources intensified. Social differences no longer mattered. Civilians and soldiers, lower class and upper class, the old and the young, men in battle and women on the home front—everyone available was drawn into the ultimate battle “until the last man”, an absorption that brought good and evil as close as never before.

And one of the established differences that was erased in these months was that between the *Wehrmacht*, the Defense Force, and the *Schutzstaffel* (SS), the Protection Squadron. The Wehrmacht, though sworn to Hitler’s cause, drew its spirit from the *Reichswehr*, the Imperial Defense that had fought for the German Reich in WWI – the honorable losses of which WWII was to rectify. The SS, instead, initially Hitler’s guards, was the military core of the NS movement, was united by racial doctrines, fought for the unique cause of the Third Reich and

was ready to commit the war crimes for which Nazi Germany became known. But as more and more battles were lost, and as more and more soldiers fell, the thinner the line became that separated these two armies. While at the beginning of the war, SS recruits were voluntary and exclusively Aryan, during the last months of the war, Wehrmacht soldiers as well as ethnic Germans (*Volksdeutsche*) were forcefully recruited into the SS. And this is what happened to the Wehrmacht officer Wilhelm Krelle.

Krelle, born in Magdeburg in 1916, slim, physically fit, and with an energetic appearance, was 27 years old at the time and had just completed the training program for Generals. He could look back at an impressive career.³ After school and a disappointing period in the Hitler Youth, he joined the Wehrmacht as an ensign in the engineer battalion Riesa in April 1935. He soon became Lieutenant, and shortly before the Invasion of Poland, Higher Lieutenant in April 1939. In Poland, becoming active in battle though only in an engineering troop, he captured a bridge, which won him the Iron Cross Class II. In 1941, as a company commander of the 21st tank division in Greece, he was wounded in a bunker attack and received Hitler's deed of honor as well as the Iron Cross Class I. In February 1942, he was promoted to Captain (*Hauptmann*), and became the commander of an engineering and then a tank battalion with Rommel in the African corps. Again, he was seriously wounded. While recuperating in Frankfurt, he took the occasion to attend several lectures at the university on the history of Rome and the ethics of Kant. In January 1944, he was ordered to the General Staff training in Hirschberg. He married in the summer of 1944, after which he got the order to join as 3rd General Staff Officer – "Ic", the "scout" officer in charge of information – the newly formed 13th SS-Corps under the command of General Hermann Priess. The staff was in charge of tens of thousands of soldiers on the Western Front.

Krelle was proud of his career and appreciated the career opportunities the war provided. On February 25, 1945, he reported to his comrades from the General Staff training who, like him, had been trained to uphold the belief in the final victory. He was not the only one who had been recruited to an SS corp. He expressed concerns about his rank, about the lack of opportunities to prove one's worth, and about the lack of clarity regarding the difference between the SS and the army. Field letters were censored.

“There is not much to say about me ... Early in August 1944, I received the draft order to report to the deputy general command in Breslau, where I learned that I had been assigned to a newly formed SS corps. At first I was Ia [1st General Staff Officer], but the chief magistrate apparently felt that an old SS man belonged there and ordered Sturzbrecher ... as Ia, degrading me to Ic. After 1 1/2 months, however, Sturzbrecher was ordered away and I took his place. Since early January, I have been in an SS Panzer Grenadier Division and get along well with my young and fresh Division commander. It is a pity that there will be no more wide-ranging attacks, and thus no more real use of the division. We have a front almost 30 km wide! So we will be glad if we can hold the position against the superior enemy attacks ... The status of our service (whether Army or SS) is still unclear. All officers of the SS corps were ordered to use the SS ranks, but we are still led by the Army Personnel Office. But in this phase of the war, this might not matter” (Memoir I, appendix).

However, it did matter to him. He later recalled and emphasized an inner struggle to be associated with the SS. Krelle was a very conscientious and righteous soldier when being

responsible for so many men under his command: “The war is bitter and hard,” he wrote in October 1945 to his wife); “Hopefully, I will always find the right path. And if not, then please know that I always wanted to do the best” (Memoir II: 89). In fact, he questioned the order to join the SS. For him, the difference between the Wehrmacht and the SS was of a moral kind - the difference between an orderly Prussian institution and a corrupt party system, between German nationalism and Aryan racism, between the reason of military strategy and the mania of political power, and in particular between an institution that draws from Christian values and atheism. In retrospect, in 1993, he recalled a conversation with his wife Alix:

“In consternation, Ali and I sat in our apartment and discussed the situation. Should I ask the Army Office for a different post? (...) After a long discussion, two reasons kept me from doing so. First, I believed that I’m in God’s hands. If he thinks that such a strange task is right for me, I cannot know better. His will must be done. (...) The second reason, however, was probably more decisive - in any case, I recall my arguments with Ali very precisely. During the war, (...) I had to give commands that put soldiers in critical situations that were at least as unpleasant as the command I got (...) Now that I’m in such a situation and have received an unpleasant order, should I then try to evade it?” (Memoir II: 82)

These two reasons are worth comment. First, Krelle was deeply protestant. His maternal grandfather was a Protestant priest, and throughout his life Krelle tried to view himself and his activities in a Christian light. In Prussian culture, faith in God and Emperor, nationalism, militarism, obedience, and sacrifice and hard work for the common good were all closely knit

together. Being dutiful was to worship, and to show being worthy of, God. And so did his Protestant belief help him to make sense of the war and, in particular, help him to accept the fear of death when taking cover in trenches under Artillery attack or moving under hostile fire. He had the 15th Gospel of John in mind: “Greater love has no one than this: to lay down one’s life for one’s friends” (Ibid: 68). Rather than being driven by hate, war, he believed, was God’s way of showing who, as individuals or nations, had a further task on earth. If he were killed, his life would be fulfilled by dying for his country; if he survived, it would be his duty to meet his further task in the light of all those who had given their lives. Such construed notion of religious faith might explain his letter to his parents on August 29, 1944: “Do not worry that I became a different person by wearing a different uniform. I believe that, also in the SS, I can act for the good in accordance with my religious principles” (Ibid.: 86).

After he accepted the post with the 13th SS corps in Bernau, General Priess asked him to resign from the army and become a formal member of the SS. While his Protestant faith made him accept the order to transfer to the SS, the same faith made him refuse to formally become a member. He recalled long discussions with Priess about the existence of God and his role in the war. In particular, he did not share the anti-Semitism of the Party because he thought that “the hate against what is Jewish also affects Christianity” (Memoir II: 93). Having declined in writing on October 29, it might have influenced Priess’s decision not to recruit him for the Battle of the Bulge in December 1944, the last German offensive in France that Krelle would have loved to join - fortunately, because he might have been held responsible for the so-called Malmedy Massacre. One hundred U.S. prisoners of war were executed for which Priess would later be convicted. Instead, on January 4, 1945, Krelle was transferred as 1st General Staff Officer – partaking in and translating the strategic decisions of the commanding general – to the 17th SS-

Panzer Grenadier Division, nicknamed Götz von Berlichingen, that was engaged in *Operation Nordwind*. At the same time, he was promoted to Major, the equivalent of the SS *Sturmbannführer*. He commanded around 12,000 soldiers, who had to fight “until the last man” in order to hold the last line separating the enemy from German territory, the Siegfried Line. The division included ethnic Germans from Croatia and the Black Sea who would cross the Line in the hope to be “rescued” by the enemy, just as one of his commanders, Hans Lingner, did. Heroic willingness to die in battle and coward suicide became indistinguishable.

Conscientious and righteous, Krelle was not aware of war crimes, even if several people around him – be they higher or lower rank – did commit them. When the Siegfried Line was abandoned in January, and the remaining troops of his division moved southeast into German territory, isolated war crimes are recorded – shootings of lost concentration camp prisoners and of civilians who prepared white flags for the arrival of U.S. forces.⁴ Krelle, in charge of more than 10000 soldiers, was not aware of these events. In contrast, he thought that the courage of his soldiers deserved respect: “The whole world has to respect the German soldiers who in the fifth year of war, outnumbered in weapons, equipment and soldiers, always do their duty and never give up”, he wrote to his wife on October 9, 1944 (Memoir II: 72).

This leads to the second reason for which Krelle accepted wearing an SS uniform. Being an officer requires absolute *obedience* to orders – that is to act without questioning their meaning, without feeling responsible for the overall political goal, and to accept casualties. In Africa, as a commander, he sent eleven soldiers to a meaningless death,⁵ and in *Operation Nordwind* thousands of soldiers died under his command – the record reports that only 800 out of the 12,000 soldiers in his division survived.⁶ While he would say about the latter losses that he

prevented more casualties from occurring, the former would gnaw at his conscience for years to come as a symbol of the tragedy of war.

“One cannot give a soldier at the front or a lower officer the right to decide case by case if a command is “good”... Otherwise you would risk the cohesion of the troops: no one could rely on one another. However, after all, everyone will be responsible for what he has done, if he had insight into all of the activities or not. And if he is not prosecuted, so remains one’s own conscience as a prosecutor” (Memoir I: 89).

Absolute obedience, the acceptance of casualties, the suppression of one’s doubts, and the irrational fact that others die next to him while he survives, clearly require strategies to deal with feelings of *guilt*. Krelle’s most important strategy is deeply rooted in Prussian culture: *hard work*. It is by means of utmost obligation, utmost effort, utmost strain, that is by means of a sacrifice that he could make up for those who sacrificed their lives. “I am glad, my dearest,” he wrote to his wife on December 6, 1944, “that I can relieve the guilt for all soldiers on the front lines by hard work” (Memoir II: 96). Hard work is both the cure for guilt and the means of keeping on.

Next to work, another important source for psychological stability during war was the intense love that he shared with his wife, Alix Scholz. They met after the war had already started, and married in May 1944, which made that year one of the happiest of his life. Alix came from a fine family, was brash and free-spirited, outspoken, and politically opinionated. Krelle loved her effervescent kind. The wedding was not unproblematic because Ali’s father had committed suicide in 1936, which could have been grounds for the authorities to prohibit the marriage. The

correspondence between Alix in Berlin and Wilhelm at the front is full of references to art and literature, through which they expressed and deepened their intimate and profound connection. Through the ideals of love as described by Plato, Goethe, and Mörike, they created an alternative world that protected them from the horrors of war.

“The war, the omnipresence of death and thus solitude, perhaps despair, surely the breaking down of all hopes for the future, gave our love a depth, related to its concealed suffering, that nobody today living in secure circumstances can feel or understand” (Memoir II: 98).

Their love, though built up in absence during the war, would be strong enough to survive the many shared struggles after the war.

But the underlying motivation for accepting the delirium of war was a deep desire that remained present throughout Krelle’s entire life, the desire to achieve something extraordinary and noble. His nationalism was a manifestation of the wish to enter historical memory. When thinking of Germany, he thought of Frederick the Great and compared himself to Carl von Clausewitz as well as to Ernst Jünger. On Christmas Day 1943, he wrote to Alix: “When the New Year begins, we will toast with a full glass of champagne and vow to never be frivolous (*kleinmütig*), never to be frightened, and even if it looks bad to always believe in our fatherland and our future” (Memoir II: 49). Reading, at the front line, Esther Meynell’s *Little Chronicle of Magdalena Bach*, he wrote to on September 29, 1944: “I hope that, like Bach, I can bring about something that goes beyond the mere demands of daily life” (Ibid.: 106). Krelle loved the war because it meant an absolute break with the ordinary and the daily, and it gave meaning even to

what was otherwise so pointless – death. War elevates and intensifies meaning. This was what he enjoyed. In fact, despite the idea of sacrificing oneself, this exceptionalism was a manifestation of an elevated sense of his self, or even of vanity (*Eitelkeit*), as his daughter Heide called it.

And this desire for the noble and the exceptional, in turn, was a fear of weakness, a fear of failing at the simple task of daily life. This fear, which he projected on the opprobrium of the Weimar Republic, had its origin in his family - someone he had been ashamed of during his entire childhood: his father. Willy Krelle was a bank clerk. He was bullied by his boss, and had a hard time during the Great Depression to whom to grant or to deny credit. Always in danger of losing his job, he suffered from stomach ulcers and pneumonia. The entire family continuously worried about his health and rank, and little Wilhelm despised him for that. “Imagine that! He failed because he was not able to deny credit during the crisis”, his son-in-law recalled him saying about his father (Georg Schumacher). Krelle’s exceptionalism was the inversion of the contempt of his father.

In early May 1945, his tank division ended up at the Austrian border. Krelle was ordered to hand over the entire Division to the U.S. Army. Just before that, he was promoted to *SS-Obersturmbannführer*, the equivalent of Lieutenant Colonel (*Oberstleutnant*). This must have been related to the fact that his commander, Georg Bochmann, refused to hand over the division and decided to flee. Later, Krelle would question the legal validity of this promotion. That is, at the end of his faithful career, he held the same rank as, for example, Adolf Eichmann – an unjust comparison, as Eichmann held that rank for most of the time of the NS regime and had been strategically passed over for promotions. But would this be known by those who would decide on his further fate? In an adventurous plan, he managed to hand over the division in front of TV cameras to the American army, and yet flee and avoid capture – the nightmare of all officers.

After a three-week harrowing journey from the Bavarian Alps to Saxony – searching civilian clothes, then arrest and flight, sick bay and jaundice, and long marches – he arrived on May 31 in his family’s village Schönebeck, where he saw his two-month-old son, Rainer, for the first time.

The German surrender in May 1945 meant multiple disappointments: that his sacrifices (and those of so many others for which he had to make up) were pointless; that nobody was celebrating his courage; and worst, that the NS regime had not fought for the noble goals for which he had fought – as the full truth of what he knew only from rumors was revealed, the Holocaust. And since the SS would become a symbol, not only of so many war crimes but also of the genocide, Krelle, poised to be a hero before the end of the war, faced to be a pariah after the war. Note, however, that the less he identified with the crimes that became public, the less he had to question his noble motivations described in this chapter. Having survived the war, God must have a further task for him on earth. And he had to take on this task in obligation towards all those whom he sent to death and who died beside him in the trenches. And this task, he would soon understand, would be to *modernize German economics in the image of the United States*. God’s ways are inscrutable.

The Post-War Struggle

Back home, worried to be arrested when registering at the police for new documents, he called himself a “business man” - referring to an internship he took in 1935 at a bank - and thus got a new identity card. When the family understood that they now lived under Soviet occupation, his sister Erika decided to go west to Tübingen, where her husband had family. Krelle, who might

have anticipated more serious controls of his identity when registering with the Soviet forces, decided to follow his sister. His parents joined them, but his second sister, Gisela, stayed. After another odyssey, the young family arrived in Tübingen on August 3, 1945.⁷

How to make a living? Housing, heating, and the health of little Rainer being his first concerns, there was no immediate employment opportunity. In search for a new profession, the university offered itself as the best alternative. He chose, rather than history and philosophy as in 1944, the most promising degrees in terms of future income and study time: physics and economics. However, universities were bound to investigate the histories of any applicants. Would he be accepted? “October 15, the university reopened. We were anxiously awaiting if the admission would be accepted after the questionnaires had been filled out. But initially it went all right” (Chronicle 1945). In addition to physics, mathematics, and public finance, Krelle was introduced to mathematical economics by Hans Möller, Heinrich von Stackelberg’s former assistant. Stackelberg was unique for being both an ardent Nazi until the early 1940s *and* an ardent neoclassical economist. The imprint of Stackelberg’s economics would be visible in Krelle’s work until the end of his career.⁸

But he could not go deeper into these studies, as in the spring term 1946, the questionnaires had to be filled out anew. This time the committee decided *not* to grant admission to Krelle. He knocked on the doors of all committee members, explaining the circumstances of the ending war that led to his high SS rank. He got a verbal acceptance from all of them, including Rector Hermann Schneider. But when Schneider was replaced by Theodor Steinbüchel, his admission was declined. Thus, in early May, he took his bike and cycled one hundred and fifty kilometers southwest in order to try his luck at the University of Freiburg. He took no risks, and changed his military title; he now was no longer *Oberstleutnant*, but merely

Leutnant. It worked. In summer term 1946, he enrolled in physics and economics in Freiburg. He learned to be discreet about his past.

Separated from his family, he studied with utmost determination, driven by the pressure of earning an income for his family, by the awareness of having to catch up years of education, by the ambition to become an achieving member of the new society, and by the humiliation from being supported by his father's money. He passed more than ten classes per term. Next to mathematics and physics, public finance and business economics, he also heard lectures by Walter Eucken, Constantin von Dietze, and Clemens Bauer. These were the thinkers of the so-called Beckerath circle that, in the last years of the war, developed ideas for the post-war economy, ideas that pushed West Germany into what came to be known as a social market economy. Though more open to conceptual abstraction than the German historical school in which these economists grew up, they were, in contrast to Hans Möller in Tübingen, fully nontechnical. In his later war memoirs, Krelle would project back into their ordoliberal teachings a eureka moment regarding his nationalist upbringing:

“If at that time (of National Socialism) I had understood something of economic science, the scales would probably have fallen from my eyes: I would have seen the advantages of the division of labor (also internationally), the working of the ‘invisible hand’, and that peaceful trade is better for everyone than conquest and exploitation (...) With some good sense in the economic and political arena, I could have understood the absurdity of nationalism. Thus the officer's profession would have lost the quasi-religious connotation which it had for me” (Memoir II: 135).

Back then in his chronicle, however, he noted no more than the fact of hard work. In November 1946, when he was in the midst of writing his diploma thesis in Freiburg, a telegram arrived announcing his father's death. The notice came too late to attend the funeral in Tübingen.

In March 1947, a year and a half after he entered university, he passed his diploma exams in economics with grade 2 – the equivalent of a B. Nine months later, the day before Christmas when he turned thirty-one, he submitted his PhD thesis to Eucken.⁹ It was on Say's law, thus initiating himself into Keynesian economics. Eucken could not help him develop that interest, but he was well connected with Erich Preiser in Heidelberg, next to Erich Schneider one of Germany's leading theoretical minds in Keynesian economics.¹⁰ Through this connection, Krelle's future took shape. By October 1947, he had known that starting May 1948 he would begin as an assistant to Preiser. Before moving to Heidelberg, he graduated in physics, where his grades were not good enough for a career.

Only three years after the war, Krelle had made it. He had a regular income and a new profession as a civil servant at the university, and he could take his place in the generation that carried the hope to build up the institutions of the new state. Christmas 1948, the family was united for the first time in their own home; his second child, Axel, born in January 1949, was on his way, followed by his first daughter, Heide, three years later in January 1952. As secure as his situation seemed, his mind would not calm down. Driven by the duty to seek higher, material security was occasion for renewed ambition, for aiming at higher goals, for becoming a better human being. His resolution for 1951 that he promised to his wife reads like this:

“Again, we have made good progress, internally and externally. But let us take the resolution to live even more “essentially”, not to come to a halt at external matters and to

work on ourselves, so that we become righteous human beings. Both of us could do it if we only put enough effort. That's what we want to promise to ourselves for the New Year, don't we?" (30.12.1950)

For him, the occasion to work on himself was to foster his academic career; for his wife, it was to be a mother and housewife.

The Battle of Equations I

In November 1951, Krelle defended his habilitation with Erich Preiser, and his academic rank changed from *Assistant* to *Privatdozent*. His thesis was published as a book in 1953 and was entitled *Theory of Economic Behavior*.¹¹ It is a book in standard neoclassical microeconomic theory starting with a theory of choice, applied to consumers and producers, combined in a general equilibrium, as the foundation for further macroeconomic research. Technically, it was on the level of Hicks's *Value and Capital*, and lagged behind the international literature, access to which was difficult in post-war Germany. But Krelle tried to catch up. His first other publications included a review of Paul Samuelson's *Foundations of Economic Analysis* that would be foundational for his further work.¹² It was not only a review, but also a statement in favor of the use of mathematics in economics. He clearly appreciated the engineering approach to economics, which met his preference for simple mechanical reasoning, which in turn resonated well with his Prussian mode of viewing moral and political life as a matter of rules, protocols, and duty rather than sentiments and affections. Thus, the kind of economics he bet on

was clear: U.S. economics of a neo-Keynesian kind. A research trip suggested itself. He applied for and won a Rockefeller fellowship for the 1953-54 academic year.

In order to be allowed to travel to the U.S., Krelle had to report his military career. Apart from denying the legality of the promotion in May 1945 from Major to Lieutenant Colonel (*SS-Obersturmbannführer*), he explained his activities in the SS. He no longer concealed but explained — and apologetically.

“Regarding the last two positions, I note that since the beginning of 1944, when the losses at SS divisions were too great due to military mistakes, General Staff Officers of the Wehrmacht were being sent to SS divisions against their will. None of them was a member of the SS. When I received the command, I wrote to the SS leader that I did not intend to join the SS. But at that time we felt obliged to prevent useless human sacrifices by being responsible officers – for also the soldiers who had been conscripted to the SS were human beings” (Krelle to Combined Travel Board, January 5, 1951).

In addition to his publications in economics, in 1951, he also wrote a non-technical pamphlet concerning the question of the rearmament of West Germany, called *Militarism*.¹³ He argued for the importance of the army though limited to defense, the virtue of obedience though limited to “strict” rather than “absolute” obedience, which applies to the military though not to the rest of the society – as if his professional ethos as officer had always fitted better a democratic society! Regarding the contested Oder-Neisse border between Poland and Germany, Krelle, like many, still considered the possibility of WWIII that would correct the injustice of WWII, just as WWII was to correct the injustice of WWI.

In August 1953, Krelle embarked on the *Queen Mary* in Cherbourg. On his way, in Belgium, he visited the battlefields of WWI as well as those he himself knew from 1940. He spent most of the Rockefeller year until April 1954 at Harvard and MIT, then visited for some weeks Michigan and Chicago, followed by a touristic trip with his wife, and a summer in Los Angeles at UCLA and the RAND Corporation. He thus visited the most important of those institutions associated with the transformation of the discipline of U.S. economics during the 1950s, when several branches of technical social science research became channeled into a new “neoclassical” hegemony.¹⁴ Taking part in this arrival of a new economics clearly brought about the impression that it was here that things happened, and that Germany was sorely behind. In particular, ordo-liberal discourse that dominated German economics appeared to be a forlorn form of thought. This impression was reinforced by the presence of those emigrants from Germany who in the 1920s advanced mathematical economics and now made great careers in the U.S. (such as Marschak, Haberler, Morgenstern, and Schumpeter).

Krelle socialized easily in Cambridge. He organized hikes with other German-speaking colleagues, notably the Austrian economist Gottfried Haberler, but also Hans Möller, his teacher back in Tübingen who visited Boston. In his first report to the Rockefeller Foundation (October 7), Krelle noted that facilities were better, that financial pressure on students was lower, that relationships with professors were closer, but also that conformism in American society was greater, that students had less choices over classes, and that the academic quality of undergraduate classes was lower. In graduate classes, however, the quality was incomparably higher than in Germany. He singled out the econometrics classes of Walter Chipman and also Paul Samuelson’s graduate seminar at MIT, where he was introduced to a theory that was about to take shape in those days, optimal growth theory. Yet, there were also seminar debates that

clearly went above his head – as the Patinkin controversy regarding his PhD topic, Say’s Law¹⁵: “The whole discussion ... is rather sophisticated and I do not feel very satisfied with the outcome (*sic*)” (Report, November 10). But most importantly for his further career, he got into the approach popularized by Wassily Leontief, input-output analysis. With his interest in neo-Keynesian economics and econometrics, he was right at the front of the most popular branch of technical economics at the time. He tried to “dynamize” input-output analysis in a Keynesian fashion, that is, include monetary questions and business cycles, and then apply it to growth (Report, November 10). He wrote a draft of a paper and presented it in Leontief’s and Haberler’s seminar. The intention to become the missionary of what he learned in the U.S. back in Germany took shape. He anticipated the battle he had to fight:

“It will be my first duty in Germany when I am back to try to put these things further there. But tradition is not very favorable for that. Economics descends from history and political science. Therefore the accent lies more on the philosophical and ideological side of the economic problem and the pure pragmatism as best represented by statistics and econometrics is often regarded with suspicion” (Ibid.).

In early April, he left to go to the University of Michigan. He had conversations with Richard Musgrave on public finance and George Katona on consumer psychology, and he was impressed by the “exceptional personality” of Kenneth Boulding. He also became friends with the Austrian-born economist Wolfgang Stolper, a friendship that would lead to a positive review of Krelle’s habilitation.¹⁶ But most importantly for his future, he met Lawrence Klein, several years younger than Krelle but already the leading figure in Keynesian macroeconometrics. As Klein later recalls: “I was impressed by his knowledge of modern economics at the time of his American

visit and by the enthusiasm with which he embraced the subject” (Faculty Archive (FA), “Krelle”).¹⁷ Moving on to Chicago in June, Krelle met Jacob Marschak, Gérard Debreu, Lloyd Metzler, and, as he reports, “the impressive” Tjallingis Koopmans at the Cowles Commission in Chicago, the perhaps most vibrant site of the transformation of economics during these years. He also got to know another young German research fellow, who had been, like him, a PhD student of Eucken in Freiburg, Martin Beckmann, now at the very front line of programming techniques.¹⁸ In late June, Krelle’s wife arrived, and they plunged into a memorable four-week trip into culture and nature between the East and West Coasts. They knew where their home was.

Spending August in Los Angeles, he expanded his network further by meeting Karl Brunner and Tibor Fabian at the Institute of Numerical Analysis. He also visited the RAND Corporation, where he met John von Neumann, George Dantzig, Marvin Hoffenberg, Harry Markowitz, and Lloyd Shapley, *the* mathematicians and economists working on programming techniques far beyond the context of national accounting. Oskar Morgenstern noted in his diary about Krelle’s visit: “Dr. W. Krelle (and his wife) showed up (at RAND). He stays for four weeks and wants to see me often. He studies the Games and understands that his habilitation is totally outdated. But his knowledge of the literature, etc. is rather patchy”.¹⁹

Lagging behind the front line of research in the U.S., the opposite was true in Germany. Some days after returning to Heidelberg in September 1954, fueled with new ideas, he reconnected with what would become his new intellectual home base: the theoretical section of the *Verein für Socialpolitik* (VfS). After its intermission during the NS period, the section was relaunched in 1949 by Erich Schneider. Krelle already had given a talk at its first official meeting in January 1953.²⁰ It was there that he would find an audience, allies, followers, recognition, and a place to move things ahead. Krelle was younger than those who remained of

the pre-war generation (such as Andreas Predöhl, Erich Gutenberg, Erich Schneider, and Walter Adolf Jöhr), and older than those who began studying, like him, in the post-war years (such as Rudolf Richter, Alfred Eugen Ott, Karl Brandt, Rudolf Henn, Gottfried Bombach, Carl Christian von Weizsäcker, and Jürgen Kromphardt). Now, at the second official meeting, his German-speaking contacts from the U.S. were also present, such as Haberler, Gerschenkron, and Beckmann. Krelle knew personally those economists whose works others struggled to barely understand. Compared to the older generation of German theoreticians, he was technically far ahead; and for the younger generation, he became an example of rigor and discipline (Rudolf Richter, e-mail to author, December 2016). Even if his profile was to represent U.S. standards, the region where he applied data and intervened in political debates, and specifically his preferred language of publication, was German. Throughout his career, he published mostly in the three leading German journals: the *Schriften des Vereins für Socialpolitik*, the *Zeitschrift für die gesamte Staatswissenschaft*, and the *Jahrbücher für Nationalökonomie und Statistik*. He thus published in the same journals as other economists critical of both Keynesianism and its technical level. Confrontation was unavoidable. The president of the VfS asked Krelle to remove from one of his first manuscript submissions several graphs and the formulas.²¹ Thus, early on, Krelle wrote methodological pamphlets for mathematical economics; next to the physics-like exactness, he argued for ideological neutrality in contrast to literary economics, against the legitimacy of those who do not understand mathematics, and for a peaceful co-existence of several approaches.²²

Economists were not the only group interested in Krelle's U.S. experiences. In October 1954, he was invited to talk at the *Gesellschaft für Wehrkunde* (today the *Gesellschaft für Sicherheitspolitik*), founded by the American military forces and connected to the U.S. military

complex. In May 1955, he spoke about his experiences at the local group of the German Africa Corps, whose board he was a member of. In this group, memories were shared, facts gathered, orders re-evaluated. The past continued working within him, and he sought preservation and understanding, if not recognition, for what he did. In 1959, he wrote an anonymous novel about the tragic bunker attack at *Hir el Ksiba*, using fictional names (Memoir II: 26 ff.). He sought a literary form, describing the unreal world of the desert, the morale of his troops, the conflicts of leadership, and the moral tragedy of that, once successful, turned out strategically irrelevant. Questions of the responsibility of leadership and obedience to orders, but also bravery and honor in combat, continued occupying him, all the more since these issues became absent from the public mind. He did not publish the novel, not even anonymously.

In Heidelberg, he became the driving force of the Institute for Econometric Research (*Institut für ökonomische Forschung*), founded in October 1954. Its formal head was Helmut Meinhold, but Krelle practically ran the institute. He now put to work what he had learned in the US: he created the first effective input-output national account for Germany. The institute provided results for the *Wirtschaftswissenschaftlichen Beirat über Volkswirtschaftliche Gesamtrechnung*, and its tools were used by the statistics office for their national accounts.²³ This was the beginning of a research program that Krelle pursued until retirement. Data analysis, in those days, was a matter of diligence, routine, and discipline that fitted well his work spirit and, among his younger collaborators, evoked comparison with his known military background. He was called the *iron Wilhelm*, and also the *jet fighter*, working 14 hours a day at a minimum and doing head stands to fight tiredness.²⁴

His efforts paid off. In 1956, he received a “call” as extraordinary professor for econometrics and theoretical economics to the University of Commerce (*Handelshochschule*) in

St. Gallen, Switzerland. The decision was not easy, as the family had to leave Germany: “Don’t we lose the connection to our country, which we do not want to leave and to which we intimately belong?” (Chronicle 1956). He accepted the call. There, he introduced operations research not only as a field of study, but also applied it to airport optimization at Swiss Air.²⁵ His engineering approach to questions of economic organization and policy took material shape when he built a mechanical simulator of the economy, not unlike the Phillips machine, for the World Exhibition in Brussels in 1958.²⁶

Switzerland was a memorable time for the family. In December 1955, their fourth and final child, Gabriele, was born. Everyone was in good health, the children were promising, and the Alpstein Mountain was close. Krelle was a glowing alpinist, a passion that his children would inherit. The family was very active to the point that they could appear quirky to outsiders. Being stingy regarding housekeeping allowances or dispenses for the children’s clothes, Krelle loved extraordinary leisure activities. No destination was too far, no church or museum would be missed on one’s way, and no rain could stop the hikers from arriving just in time for the opera in the evening. Later, on Christmas Eves, the family would go again and again through the photos taken during the years in St. Gallen.

A first fright came from Axel, his second son. While the parents were traveling, baby Axel became sick, and the sitter brought him to a doctor who diagnosed an ear inflammation. It turned out to be a brain fever. Without penicillin and with the late diagnosis, the fever had long-term effects. That happened in 1950, and in Switzerland it was clear that Axel would not develop as other children did. He was plagued by severe headaches and epileptic seizures, and he had difficulties focusing. Conscious of his disability but still aspiring to the values of his father, Axel

was tormented from knowing that he would never become an achiever. He would require help for the rest of his life.

Science War I

After three years in Switzerland, in 1958, Krelle received a call from the University of Bonn. This time the decision was not difficult. In Bonn, the family would no longer be strangers, and he would have a “chance to have greater influence” (Chronicle 1958). He saw the opportunity to turn Bonn into a modern, U.S.-oriented economics department. When he signed into the Army Supply Office in Bonn, he registered with actual his last rank of *Oberstleutnant a.D.* There was nothing to hide any more, as no one was interested any more.

Bonn’s economics department was a stronghold of ordoliberalism. Krelle replaced the prominent Erwin von Beckerath, a central visionary of West Germany’s social market economy. Beckerath’s chair was the chair for economic theory, the meaning of which was wide open in the early 1960s – descriptive theory in the sense of the historical school, conceptual theory in the sense of ordoliberalism, and technical theory in the sense of Keynesian economics. Indeed, among other candidates who refused offers for the position Krelle accepted were Alfred Müller-Armack and Heinz Müller, both from the Beckerath circle. Beckerath being retired, Fritz W. Meyer and M. Ernst Kamp remained as the representatives of ordoliberal thought. In two decades, however, Bonn would become a stronghold of technical economics and the first department in Germany from which literary, non-model-based economics would disappear completely. The increasing number of students in the 1960s certainly gave occasion to more

specialization, but without Krelle's active hiring strategy in an increasingly competitive market for academic economists and specifically personal network – he became president of the theoretical section of the VfS in 1962 – the change would not have happened the same way. His network was a significant factor all the more given that only since 1972 had formal hiring procedures with application documents and job talks been required.²⁷ The battle took place on two fronts: he had to convince the established literary economists that the new hires he proposed could pass as economists, and he had to convince the hires who came mostly from mathematics departments that they fit into an economics department. His overall argument was to favor “research quality,” as if there was only one standard that could be applied to both literary and technical economists. He played down the conflict between standards of quality to the point that what in fact was an imperial mission appeared as a competition between equals.

The first three hires were decisive: a new chair in statistics and in sociology, and a new hire in business economics. As a young dean, age 42, Krelle orchestrated all three hires. After consulting Erich Gutenberg in Cologne, an old member of the theoretical section, Krelle could place Gutenberg's promising pupil and son-in-law Horst Albach in the chair for business economics. Albach quickly became familiar with the methods of operations research, as well as friends with Krelle (they served as godfathers of one another's children). The close connection between business economics and general economics, excluding traditional business studies, has contributed significantly to the economics brand in Bonn.

For the chair of statistics, Krelle tried to persuade a German-speaking econometrician from the US to return to Germany. Gerhard Tintner, a student of Oskar Morgenstern since 1938 at the Cowles Commission, was listed first; Martin Beckmann, by now at Brown University, was listed second; and Krelle's colleague from St. Gallen, Hans Paul Künzi, was listed third. After

Tintner declined, Krelle tried to convince Beckmann, who expressed concerns that he was not enough of a statistician: “My main concern is that I am not a statistician and do not even have formal training in it. That is why I do not feel at home in the statistical branches of econometrics” (FA, “Sociology”, August 9, 1960). But when Krelle promised a separate institute for operations research and allowed him to continue his post at Brown, Beckmann accepted. Beckmann’s research on optimization problems in transportation fitted well with what Albach did in business economics, as well as with what Krelle had done in Switzerland.²⁸ Linear (and non-linear) programming brought together the new triumvirate of Krelle, Albach, and Beckmann, a critical partnership of young, like-minded, research-oriented economists. Jointly, they founded the German Society for Operations Research in order to draw other departments into their new economics.²⁹

Importing new expertise into economics, at the same time a spin-off of traditional elements of economics took place: notably, a chair for political science and another for social and economic history were created in the philosophy faculty. In a strategic fashion, Krelle argued that the same should *not* happen to the chair of sociology. The segregation of sociology, he wrote, would

“promote the tendency of a division of economics and social science disciplines at the University of Bonn (...) Such a division can only be a detriment to sociology and to political science, which attains the character of a historical science, and is likewise a detriment to economics, which would be deprived of its sociological and political elements” (FA, “Sociology”).

This commitment to sociology, rather than an expression of genuine pluralism, was an effective valve for his claim to freedom of choice in other positions. After a systematic search, they hired Gottfried Eisermann, a specialist in Pareto's sociology. Eisermann, however, would play no role whatsoever in the department. "He was a foreign body, isolated and frustrated" (Schönfeld). He could not alter the further separation of sociology and political science, which founded their own institutes at the faculty of philosophy in the course of the seventies. The segregation of economics in the social sciences became an irreversible reality.

In 1962, the Ministry approved of a second chair for economic theory, which opened up the divisions between the old literary and the new technical style of economics. After lengthy discussion, the committee put Beckerath's former assistant and Eucken's successor in Freiburg, Heinz Müller, and Krelle's successor as an assistant to Preiser in Heidelberg, Alfred Eugen Ott, both on the first place of the hiring list. This caused the literary league – Meyer, Kamp, Eisermann, and the retired Beckerath – to submit a "special vote" (*Sondervotum*) against the decision (FA "New Chairs 1963"). They opposed the "institutional-legal approach" to the "mathematical-quantitative approach" in economic theory and asked for a balance between the two. The latter, they argued, lacks policy relevance, which requires "a close and, to date, not yet smooth cooperation of economists with scholars in law, sociology and other humanities" (Ibid.). They asked for a candidate who covered "those fields of applied economic theory, which are not covered by the modern approach of mathematical research". They added:

"The (mathematical-quantitative) approach is much based on very specific research methods developed in non-biological natural sciences, in military research and in business administration, which have led to successes in solving operational problems.

Whether these methods turn out useful when being transferred to the economy as a whole is still controversial in spite of the optimism of their representatives” (Ibid.).

Krelle’s reply contains almost every aspect of his hiring strategy, including the reference to the ideological motivation of the opponents:

“(The opponents) basically say that Müller, in contrast to Ott, represents neoliberal economic policy ... The fact that one’s theoretical work serves one or the other political position, however, is as irrelevant, to quote Stackelberg, as the question to print one’s books in *Antiqua* or in *Fraktur*. In economic theory, the normative aspects are largely absent. It’s only a matter of right or wrong ... In this respect, German theoretical economics lost its connection with the international development. I cannot notice any “directions” and “tensions” mentioned by the special vote. The mentioned “directions” are ... normal problems between generations, as they always occur everywhere” (Ibid.).

Again, in a highly conflictual situation, Krelle played on the difference between political mania and scientific reason, downplaying the existing conflict between epistemic standards. Since the rector of the university felt unable to decide whom to hire, the committee was changed, followed by three years of repeatedly failed hiring attempts. In the face of a difficult market for economists, the faculty agreed on an in-house hire, Krelle’s assistant in Heidelberg and in Bonn, Ernst Helmstädter.

The further hires in the 1960s were more peaceful, showing pragmatic respect between the two powers of the department. At the end of the sixties, two important replacements of

Helmstädter and Beckmann were smoothly made. Krelle's strategy was again to favor "quality" over predetermined fields of speciality, allowing him to hire scholars who had no degree in economics (FA, "Chairs 1969-1971"). Since 1966, there has been a center for economics in Belgium, which has housed European economists with a U.S. orientation, thus guaranteeing "quality" in Krelle's sense: the Center for Operations Research and Econometrics (CORE).³⁰ Two important appointments, Werner Hildenbrand and Peter Schönfeld, were previously associated with this center. At their arrival, about a decade after Krelle's appointment, they no longer felt anything of the science war of the sixties. The ordoliberal economists passively "lived towards their retirement" (Schönfeld).

"I stood in the shadow of Krelle, and had nothing to do with those [old economists]. There were no more fights ... Albach, Krelle and Beckmann had prepared the terrain. The others had no more say; they did not dare to utter anything at faculty meetings" (Hildenbrand).

Battles for Rationality

Apart from shaping department policy, Krelle took over the task of adding his share to Germany's national cause. The public image that he established in the 1960s and 1970s was that of a Christian economist representing the values of justice and rationality. What we now know as hydraulic Keynesianism became popular in Germany during the 1960s, leading up to the politics of the social democrats' minister of economic affairs, Karl Schiller. In Krelle's research, during

this period, Keynesianism was the driving factor.³¹ Out of his work in national accounting sprung an interest in the field of growth theory.³² But for the general public, he became specifically known for his contributions on wealth and income distribution, motivated not only by Keynes but also the bible.³³ It was this policy-oriented research that brought him the reputation of a left-wing economist and opened the door to political and also to business consulting. Since 1973, he had been a member of the *wissenschaftliche Beirat beim Bundesministerium für Wirtschaft*, the leading dozen economists consulting the government in economic policy. There he was known for arguing for reducing the non-wage labor costs that were relatively high in Germany. He also became active in questions of the so-called co-determination of workers in entrepreneurial decisions of big companies, on which he advised the government (1968-1970). His 1968 report on the ‘corporate rent shareholding of employees’, known as the Krelle-report, caused public debate.³⁴ In the same vein, he was active as a consulting member of the board of directors of the Krupp consortium (1972-1990). There he argued against the labor unions and their autonomy in wage bargaining. He took part in the decision to close down plants - the *Hüttenwerke Rheinhausen*. “As bitter as it was, it (the decision) was not difficult for me. It was clear that this had to be done in order to save the whole (enterprise). (...) If you can only survive by the amputation of one limb, one has to decide for the surgery, as deplorable the loss might be” (family letter 1988).³⁵ When Krelle was in a field hospital in April 1941 after the attack in Greece, he refused to have his leg amputated, as he did not trust the medical doctor. He simply ran away, and, luckily, the leg healed over the next several months (Memoir I: 127).

Krelle viewed the economic policy of Germany as a locus of competition between nations, in which one can gain advantages by a heightened sense of rationality and evidence-based fine-tuning. He represented the same rationality in two other contexts: in the military and

in the Protestant church. While he refused to take part in military consulting in the immediate post-war period, between 1970 and 1972 he advised the government in a reform of the structure of the army (*Wehrstrukturkommission*). The engagement with the church was steadier. He was a member of the chamber for social order (1963-1985) and of the *Synod* (1973-1985), both of the Protestant church. Regarding peace and disarmament, he argued for the possibility of a defensive war. Regarding income distribution, he disputed the irrationality of Christian charity. He read the bible as ‘an economic guide’, as he called it in a later publication, arguing for rational measures for redistribution in the sense of Christian social ethics.³⁶ Personally, though stingy in family expenses, he donated regularly.

Like all neoclassical economists, Krelle stood for the idea of introducing rationality into policy, be it economic policy, military policy, or the social policy of the church. He wished to establish equality of opportunities, such that competition was fair, the best would win, and the weak would lose - as people without ambition did not deserve to profit from the common good. He argued, for example, for higher inheritance taxes such that “a Krupp-inheritor could no longer lead the sweet life of a slacker and playboy”.³⁷ The rationality he represented as a neo-Keynesian economist was less nourished by the sentiments one could observe in the U.S. – Cold War fear –, but was a rationality that echoed Prussian virtues of discipline and the rule-based structure of the military.³⁸

While in his professional life he had considerable success in following his sense of rationality, at home in his family, during the 1960s, he faced the limits of rational life. His wife was diagnosed with an “endogenous depression”, as it was called in those days.

“The two years of 1960 and 1961 put a strain on us: Ali often became sick; the depressions returned again and again after short breaks - fortunately interrupted by periods in which she was well and we could all breathe again. Hopefully we can now hope for a real recovery, so as to have back again the old, joyful Alix!” (Chronicle 1961)

But this recovery did not happen. Doctors thought that the cause was hyperthyroidism, and the medication that was prescribed at the time, Lithium, helped little and had strong side effects. It was a life of ups and downs. When she was in a depressive phase, Krelle would invite guests to cheer up his wife, though the social burden to represent the professor's wife might have worsened the situation. In one of her manic phases, she sold the furniture and art pieces, which, at Krelle's return, had to be bought back again. Notwithstanding, he remained supportive and was never ashamed of his wife. Their love was deeper than the circumstances of life. Difficulties only reinforced his will to accomplish, also as a husband.

His children did not all inherit his will to accomplish. While Gabriele was an ambitious gymnast taking part in national competitions, his oldest son Rainer was rather rebellious against his Über-father. Smoking, wearing his hair long, drinking with friends in his basement room, he performed poorly at school. Lacking the ambition of his father and having open conflicts at home, however, they were best comrades when hiking in the Alps. After school and two years of military service, to the surprise of all, Rainer decided to study economics in Bonn. Before doing so, in April 1968, he went on a hike with two friends to climb the *Ortler*, the highest mountain in the eastern Alps. He and his father had interrupted the same hike already twice. Arriving late at a cabin - a snowstorm was predicted - the three friends went out against the warning of the host. None of them returned. Three days later, skimming the newspapers during breakfast, Krelle read

of three German Alpinists missing at the Ortler. He went straight there to organize search troops, Italian military units included. The bodies of the two friends were found, but not Rainer's. His remains are still in the ice of the Chevedale glacier. Two years later, Krelle declared Rainer dead.

The shock left no words. For about five years, his daughter recalled, Krelle was “emotionally invisible” to anyone around him. He shut down. During the war, when he was lying in the trenches under artillery attack, there was a rule that nobody was supposed to say more than what was practically necessary; psychologically, everyone had to deal with the situation on his own. Still five years after, people would tell him that it was time to take off his black tie. What could he do? As before, so again now, work was the only therapy to live through his grief. He became a workaholic. Neglecting himself, he “whipped himself further” (Heide Krelle). Just as hard work was a way to cope with the millions of deaths during the war, so was now his work an escape from the terrible situation at home. “My father has fled ... Professor Krelle has lived a very tragic life. He had to endure a lot. Work helped, but the balance between private life and professional life was gone” (Heide Krelle). Krelle's discipline at work had its roots not only in the nationalist motive of getting Germany back on track - after the opprobrium of 1945 - but also was an escape from an intolerable family loss. Professionally, therefore, the 1970s would thus be a great success.

Battle of Equations II

Krelle's national accounting model grew and grew. It entailed 35 definitional equations, 27 behavioral equations, and 7 extrapolation equations, which were handled with the use of an IBM

7090, the best computer one could get at the time. The “colossal painting” of the economy, as he called it, became known as the “Bonn model” and was in competition with the Tübingen Model of the Institute for applied economic research.³⁹ They produced midterm predictions of four to five years, considering also structural shifts in the economy. His model was successful for being used as a basis for decisions made by the German Council of Economic Experts.⁴⁰ In 1975 Krelle became president of the VfS.

His work on the Bonn model paid off also on an international level. Starting in 1968, Krelle began to collaborate with Lawrence Klein on the so-called Project LINK. The project aimed at nothing less than a model of the global economy.⁴¹ It was based on several compatible macro-econometric models in seventeen OECD countries, eight socialist states and four developing countries with the aim of making global economic forecasts. It was the largest econometric data system in the history of national accounting – neo-Keynesian social physics at its best. “Krelle was a founding member and inspirational factor in the development of this project (LINK),” Klein would later witness in a recommendation letter (FA, “Krelle”).

The prominence of Project LINK attracted substantial funding from the German Science Foundation (DFG), the so-called Collaborative Research Center 21 (*Sonderforschungsbereich, SFB*), *Econometrics and Operations Research*, which was the first of its kind in German economics. It was a clear manifestation of the success of Krelle’s research orientation at the department. All technical economists, and none of the literary economists, were involved. Thanks to the increased resources, Bonn’s economics department soon became known as the hub of high-end research. Notably with the research areas of Werner Hildenbrand and Carl Christian von Weizsäcker, Krelle had brought colleagues to Bonn who soon took over his scientific leadership. Hildenbrand was the German representative of axiomatic general equilibrium theory

à la Gérard Debreu (who received an honorary doctorate from Bonn in 1974). One of the characteristics of this Neo-Walrasian research program, however, was to be highly skeptical of econometric analysis à la Lawrence Klein. Hildenbrand's group was purely theoretical preferring questions of mathematical structure to those of empirical applicability. Next to Hildenbrand, Weizsäcker, who for some time had held a double post in Heidelberg and at MIT, increased Bonn's reputation beyond Krelle's name. After the unsuccessful hire attempt in 1965, he accepted a call in 1973. Son of the physicist-philosopher Carl Friedrich von Weizsäcker, he was internationally known for his work on optimal growth theory, and then turned to questions of regulation and competition policy.

One would expect that shared resources and the technical integration of the department resulted in intellectual cooperation. Krelle certainly hoped that project LINK might become a joint effort of the entire department, as he considered forecasts the shared goal among all branches of economics. However, his model hardly inspired his younger colleagues who were mostly skeptical of macro-econometric modeling because of its lacking theoretical depth and overstated optimism regarding forecasts. Also, rational expectations models developed in the U.S., as well as fixed-price models developed at CORE, were attracting the minds of his young colleagues. Krelle soon had to recognize how highly specialized and little unified technical economics was. Economic theory and econometrics developed their own intellectual cultures – just like at the CORE, the big brother of Bonn's economics department. Passed were the years when linear programming combined econometrics, operations research and economic theory. Thus, Krelle had to change the title of the SFB 21 to “economic forecasts, decision-making and equilibrium models”, referring to the juxtaposition of Krelle's Project Link, of Hildenbrand's chair in axiomatic equilibrium theory, and of Albach's and Korte's chairs examining business

decisions. SFB 21 was fully neoclassical, but it was a collection of research groups without dialogue, as if they received orders from above without questioning them. One activity that could have brought them closer were the multi-day hikes of more than ninety kilometers organized by Krelle. But apart from those at Albach's chair, hardly anyone joined in this kind of challenge.

Even if hardly anyone took up Krelle's research, he was respected as the father figure of the department. His Prussian virtues of service to a higher cause, fairness, patriotism, selflessness, and full commitment to one's task were appreciated. "He was a real father, and he was able to bind the people personally" (Hildenbrand). His students, and those of his colleagues, would populate German economics departments, initiating structural changes in the discipline from which his entire network profited. Thus he received honorary doctorates, among others, from St. Gallen (1970), Vienna (1971), Karlsruhe (1976), Münster (1981) and Mannheim (1987). All of his colleagues knew of his past in the military, but nobody asked him about it. At the time, such questions were simply not broached.

"It was known that he was a soldier, since he had studied rather late. He was with Rommel in Africa, he never concealed that ... Only someone like him could show such a self-discipline. But what he had exactly done, I did not know. One would never have dared to ask. This was so in Germany. One did not talk about it. Today, I can't understand why. I even did not ask my own father" (Hildenbrand).

At one point in the 1970s, Krelle considered becoming the rector of the university, but hesitated. He thought that university officials might inquire into his past, which could be damaging to the university.

„*Semper aliquid haeret*. For this reason I have never assumed public offices, such as the rectorate of the University of Bonn. I would have had to explain beforehand to all persons all the details, and ask for forbearance. On the one hand, on my part, I do not need to do this - because given the information I had, I have done nothing wrong during this time -, but on the other hand, I would have harmed the institution that I felt connected to. So I preferred to stay in the second rank” (Memoir II: 130).

Science War II

Half-and-half was the score in the early 1970s of Bonn’s economics department: half literary economists, half technical economists. The breakthrough came with the retirement of the ordoliberal Hans Meyer and the replacement of his chair in economic policy. Initially, another new chair for economic policy with a “social-political” orientation was planned that prefigured a renaissance of the old literary school. But after a process of nearly eight years, Krelle succeeded in that technical economists held both chairs, and the department was fully taken over.

In May 1972, the two positions were announced for the first time. No less than five years of four rounds of repeatedly failed hire attempts of German-based political economists would follow. Apparently no literary economist wished to join the stronghold of scientific rigor in Bonn. In order to put an end to this search, Krelle brought up the idea to move Weizsäcker from his former chair in theory to Meyer’s policy chair, making the search into one for a replacement for Weizsäcker’s theory chair who could have been found quite easily. The sign of the changing

identity of the discipline could not have been more apparent. Ten years before, Weizsäcker's research would have been considered pure theory, but now it could be regarded as 'theoretical foundations of economic policy'. Krelle clearly changed the rules of the game to the extent that economic policy was no longer equated with literary economics, and economic theory no longer with technical economics; all economics would be technical.

This time the difficulty was not to convince the faculty but the students. After collecting signatures for a petition, the students wrote an open letter to the Senate of the university, and then, directly to the minister. It was a matter, the students wrote, of "balance" between economic policy and economic theory, whereby the "overcrowding" of economic theory would be "cemented" as a normal state (FA, "Economic Policy", "9.1.1977"). They succeeded. In August 1977, the minister of education rejected Weizsäcker's move. He invited three student representatives together with two faculty representatives to talk it over in his minister's office. After that conversation, the faculty's decision was approved and the students were asked to make concrete proposals for the future to improve the situation. Thus, Weizsäcker became a professor of economic policy. As a theoretician to replace Weizsäcker, Martin Hellwig, professor on the associate level, was asked to resign from the hiring committee and apply for the position. Despite the controversial question of whether Hellwig was an in-house placement, he was ranked first. After another student protest, the minister approved, and Hellwig succeeded to Weizsäcker's chair in economic theory.

At the end of the seventies the influence of those who did not support the new line was lost. The department had been taken over. On the occasion of his 70th birthday, Kamp declined the usual honors of the faculty explaining to the dean:

“To tell the full truth, my personal absence corresponds to my overall mood these days. This is so because, in Bonn, the development of quantitative methods, which is so important for economics, was so influential and the qualitative methods, which are indispensable to economics, have been so visibly marked down that a personal celebration becomes intolerable to me ... We all know that disagreement, also in science, can be fruitful. In order to work and live with them, tolerance and respect for the other is required” (FA “Kamp,” 14.6.1979).

Such voices being marginalized, Krelle came to be known as the modernizer of German economics. He was called the “Nestor”, that is, the guard of the warriors, of economic theory in Germany. As he would repeatedly note about his work: “I tried to align German economics with international standards after World War II. I believe that this has been successful, at least in Bonn” (FA “Krelle”, letter to dean, 29.11.1991). However, even today, it is not the case that German economists feel that they indeed have caught up. Krelle’s national motive, instead, was generalized as a structural character of a whole discipline. Still today the same feeling of lacking behind the U.S. characterizes the careers of economists and the structural decisions in research and teaching.⁴²

Krelle’s efforts and successes might have helped him deal with the sad situation at home, but they did not improve it. He lived side by side with his wife, whose mental health did not stabilize. Hyperactive as he was, neighbors could observe how he alternated between reading in the sun lounger, swimming in the neighbor’s pool, and doing pull-ups at the tree, while his wife was sitting catatonically in her chair next to him. “If mommy had not been so sick, I would not have written the one or the other book”, he would say later to his children (Gabriele

Schumacher). But they remained loving partners. Despite her disease, “we in the family, we always saw her as she really was” (family letter 1997).

Her first attempt to commit suicide was in 1972 and it would not be the last. Several times she was found by her daughter Gabriele, who took care of the situation at home. Being in the hospital, she would ask her daughter to smuggle in the pills for another attempt. In 1981, the eighth attempt at suicide was deadly. Having spent seven weeks in the hospital, doctors thought she was no longer in danger; three days later, November 7, she was dead. Rose-Alix Krelle died “after long, and serious suffering”, one could read in the newspaper. Her death was redemption. “Every soul has the right to calm down at one point” (Gabriele Schumacher). But in spite of his understanding attitude regarding her disease, Krelle kept the fact of the suicide secret.

The Final Battle

At the same time as Krelle lost his wife, he was struggling to keep the second anchor of his life, his work. A new law passed that forced him into retirement at age 65, thus in spring 1982. With the support of the department, he sued the province (his employer) against the law, arguing that he still was the head of SFB 21. He did not win, but he could stay until a replacement was found. Retirement thus did not come until the end of 1984, at age 68. In the final report of the SFB 21, he wrote: “Closing a long and, as this report shows, successful activity is, of course, also sad ... But as the death of individuals has its good sense within the overall development of a species, so is also the death of institutions ... in which science unfolds”.⁴³ Krelle was replaced by Reinhard Selten, later the first German Nobel laureate in economics.

The department celebrated his farewell and the end of SFB 21 with a two-day colloquium in December 1984. Gérard Debreu, Nobel laureate in economics the same year, gave a speech calling him the founder of “a major center of research in mathematical economics ... His authority, his judgment and his enthusiasm have been key elements in the success of the undertaking”.⁴⁴ Lawrence Klein added: “A research generation has run its course, and the entire professional world is the better for it”.⁴⁵ His student Helmstädter and colleague Albach praised his discipline and fairness, and enthused over the long hikes. Military comparisons abounded. Dean Knütel spoke about a changing of the guards (FA, “Krelle”). Krelle himself thought of a moment in the war, as he commented on the festivities in the family letter for Christmas 1984:

“I felt a bit like in 1941, when I had to give up my company in Africa to become a battalion commander, and my soldiers passed me waving on their vehicles on their way to a new mission, while I sat alone on the officers’ chest looking back into the desert and waiting for the pick-up truck” (family letter 1984).

After the celebrations, in response to all the encomiums, however, Krelle did not express the deep, heroic meaning that he assigned to his work. He merely quoted Luke 17, verse 10: “So you also, when you have done everything you were told to do, should say, ‘We are unworthy servants; we have only done our duty’” (FA, “Krelle”). Having done “only his duty”, Krelle was basking in the success of being regarded as the modernizer of German economics. His younger students, Korte among others, were so grateful for the structural change he initiated, and the career opportunities this change offered, that they nominated him for a national medal. He got it.

After all the sacrifices he endured during his life, he finally received a *national* honor: the Federal Cross of Merit in 1987.

After retirement, Krelle continued working normal hours - "I do not want to steal time from God" (family letter 1993). Until 1989, he ran a project similar to project LINK on structural change of the world economy, including Eastern European countries, in collaboration with the International Institute for Applied Systems Analysis, IIASA, in Vienna.⁴⁶ Critical of the communist regime throughout his life, 1989 was a happy moment for him. Soviet scientists could now visit Bonn, but also the family of his sister Gabriele could freely visit. After the reunification in 1990, known for having set up a leading department in West Germany, Krelle was thought of when it was decided that the economics faculty at Humboldt University in Berlin should transition from a faculty ingrained in the socialist state to a competitive research faculty. Beginning in April 1991, Krelle led the committee that decided who would succeed in the new state. The old contracts, so was the political decision from above, were turned into temporary contracts, such that the local professors had to reapply and compete with western economists to regain their old posts.⁴⁷ Though it was not Krelle who was responsible for the political goal that the faculty had to adopt western standards, it was his duty to see that the goal was met. And he did so assiduously and thoroughly.

The work of the committee was impeded by unstable political decisions regarding the number of posts and legal cases on the individual level regarding work law, but also because the university sued the senate against the procedure and even won.⁴⁸ Despite these impediments, his decisions were firm and determined. He was sensitive to the social issues, but did not obsess over them. In his family letter for 1991, he compared the situation in Eastern Germany with the Silesian hand weaving of the 19th century that had to give way to machine weaving, a difficult

but necessary social change. Again, the same justice he saw in war and in economic competition applies to science. If the scientific quality of the GDR professors did not meet that of those who received their PhDs from Bonn or Boston, it was just to decide against them – ignoring the fact that Western publications, for example, were censored in the GDR. Again, what was an imperial mission appeared as competition between equals. Hardly anyone out of thirty professors of the old regime made it to the new one. One spoke of a ‘clearcutting’ (*Kahlschlag*), a ‘human drama’. Hans Schmidt, one of those who held one of the many mid-rank positions, after a long humiliating legal fight, even committed suicide.⁴⁹

The new faculty earned a respectable reputation as a new center of economic research and granted Krelle an honorary doctorate in December 1994. He was praised as someone who “as a human being is an example for all becoming scientists”.⁵⁰ Not everyone agreed. It is unclear who began the search into Krelle’s past, but soon one could read in the press: Krelle was an SS soldier and thus a “Nazi”. Military archives proved it. He suspected a planned smear campaign against the former GDR professors, though the hunt might have been launched by a former student of the faculty, who asked a private detective to look closer, who in turn found a left-wing journalist from the *Berliner Zeitung* to report about it.⁵¹ Students at Humboldt were sensitive to the issue, continued the search, and asked the university to withdraw the honorary doctorate. The university, in turn, set up a committee that commissioned a military report, which was adopted by the university Senate in June 1996: yes, Krelle was an officer in an SS corps, but most likely was never a member of the SS, and refused requests to leave the Wehrmacht. This is what mattered for Krelle, but in public his name was now associated with the SS officer who kicked out the Bolshevik economists from Humboldt University. Had West Germany done as

thorough a job of denazification as did the GDR (or as he did with the socialist economists at Humboldt), Krelle could not have had an academic career at all. Not just, many thought.

After all the struggles and sacrifices, his professional achievements seemed to be forgotten. He fought a losing battle to recover his reputation, also legally. The trial against the journalist Andreas Förster from the *Berliner Zeitung* went on for years without success, as did the student's hunt for more evidence and the bad press. All the details of the confusing moments of the end of the war returned in the public press: the transferral to the SS corps, be it willingly or under protest, the war crimes that occurred in his division consisting of thousands of soldiers, and also the orders he signed, though not formulated, were cited: "The principle: fanatic fight for every meter homeland, which will cost the enemy streams of blood ... must be our sacred duty" (February 2, 1945).⁵² That was not the Krelle whom his students in Bonn knew from classes on distribution theory or the history of economic thought. His response that he helped save lives was difficult to digest for young students. They wrote:

"It is part of a shoddy normality in the Federal Republic that even those call themselves part of the resistance who, together with their SS units, committed war crimes until the end of the war. This mocks the victims and those who actually took part in antifascist resistance" (18th Bonner student parliament, in personal archives, Heide Krelle).

Trying to remain firm in public, in private Krelle suffered the pangs of guilt from such and similar statements. In 1996, he commented in his letter to the family:

“And now to the unpleasant ... smear campaign in the SED press in Berlin against me (in vengeance for the reform at Humboldt University). I was confronted with SS membership, though I was never in the SS ... Well, I have to accept the insults. We fought badly enough for the wrong cause - in ignorance, in self-inflicted ignorance. We must bear that. Only someone who was in this situation can understand the tragedy”.

The tragedy comprises both, as the reader might understand a little more after the preceding pages, the misunderstandings of today’s generation regarding the attempts at integrity in the delirium of the end of the war, and Krelle’s own misunderstanding of the nature of the regime he fought for. There was no understanding of, let alone recognition for, what had happened at the end of the war. The belief in the honor of his soldiers separated him from anyone without memories of having fought in battle.

Battle Lost

Despite the resentment over his public image, Krelle, in the last years of his life, did not lower his ambition. He remained active in research as a member of the follow-up SFB, and taught classes on business cycles and the history of economic thought. Until 2002 he attended the theoretical section of the VfS, and until 2003, he went to meetings of the *wissenschaftliche Beirat beim Bundeswirtschaftsministerium*, the meetings of the *wissenschaftliche Kränzchen*, and those of the Rotary Club. Also, he kept organizing classical house concerts, read Shakespeare and Thomas Mann, and went hiking in the Eifel. He took care of his son Axel until 2003, when

his daughter convinced him to give up this duty to an assisted-living facility. Once a year, on Easter Monday at Rainer's birthday, he went to the Chevedale glacier at the Ortler. "Up there, I am at home, as it were, and if I could once be there with Rainer, that would be beautiful. But for now, I still have tasks on earth" (family letter 1998).

He also remained a faithful visitor of the *Hirschberg circle*, the meetings of his comrades of the military academy in 1944. There, war deeds were still analyzed in the terms in which they were carried out at the time. There, he was understood. When in 1993 he was diagnosed with cancer, not having seen a doctor regularly, he wrote an autobiographical account until the end of the war, a manuscript on which much of the first chapter of this article is based. While his memories of the Weimar Republic describing his nationalism in response to the social misrule and the opprobrium of the lost war were indeed published, he gave copies of his war memoirs only to his children.⁵³ Yet, he wrote to his nephew that the "manuscript should be as illustrative as possible, such that someone will also read it" (Krelle to Christof Huth, 30.5.1993).

His last task that he set for himself was to write a book on economics and ethics that underlined his moral ambitions as an economist. He packed his ethical concerns into a neoclassical model that he knew from the 1960s – modeling preferences of justice and of norms to be included in a general equilibrium model. In 2001, he wrote to his family, "If there is something good (in the book), our dear God will give me the time to work it out. If not, he will call me soon" (family letter 2001). The first part was published in 2003.⁵⁴ It did not find a large readership, but he continued working on the second part.

His health increasingly worsened. After suffering an embolism, he wrote at the end of 2003: "In the middle of this year, I thought that I would not survive this year - which was not a message of fright to me, but on the contrary, a recognition that I had done enough in this world

and can now leave the work to others” (family letter 2003). In May 2004, new orders that he signed were found in Czech military archives, and the press once more confronted him. “Why can’t you stop bothering me with this?”, he asked the journalist from the *Berliner Zeitung*. “I had 16,000 men in my division. Do you think that I knew everything that happened there? I was never a member of the SS. And that is what counts ... Why don’t you let me die in peace?”⁵⁵ Bedridden, he spoke of exercises to stay in shape, and continued drafting the second part of his *Economics and Ethics*, which was never finished. When the doctor told him that he had only days to live, he did not show the heroic, accepting attitude that he always had towards death. Being ready to die was a principle of his entire life; it allowed him to take risks and to be courageous in the face of abundant suffering. But ultimately, he did not want to die. He reacted viciously to the doctor.

His funeral was large, and a sense of tragedy lingered over the celebration, as the SS issue was still on everyone’s mind, making the occasion even sadder. After his funeral, his daughter Gabriele was left in charge of her father’s estate; she packed away the documents from World War II, afraid that they would reach the public. It turned out that there was no money left for the funeral, and she had to take out a mortgage. Krelle had donated much of his money, and had lost track of his finances. Adopted Godchildren from all over the world claimed to be heirs, too. This was what was left at the end his life, misunderstandings – misunderstandings that overshadowed his entire, complex life between the military, science, and family.

Every once in a while his daughters still call the alpine guards at the Ortler. The glacier is melting, and their mother had left a small case made of ivory, filled with personal wishes and a flower of Edelweiss. It shall be put into Rainer’s grave, once he is found.

Personal conversations

Martin Hellwig, June 2015, Bonn.

Peter Schönfeld, June 2015, Bonn.

Werner Hildenbrand, June 2015, Bonn.

Heide Krelle, November, 2015, Villingen.

Gabriele Schumacher (born Krelle), and Hans Georg Schumacher, June, 2016, Nördlingen.

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² Frankl, Viktor E. (2006[1945]). *Man's Search for Meaning*. Beacon Press, p. 113.

³ Krelle, Wilhelm (1993). *Erinnerungen*, Teil I 1916-1941 (Memoir I), Teil II 1941-1945 (Memoir II). Personal archive Heide Krelle.

⁴ See Rüter, Christiaan F., Dick W. de Mildt (2010). *Justiz und NS-Verbrechen*, Bd.I-XXI. Amsterdam University Press. Krelle often reported that the response to so-called *Freischärler*, irregular civilian attacks against the military, had been an issue discussed among officers since the invasion of Poland. Should they be treated as civilians or as military? (Memoir II: 48)

⁵ This took place in *Hir el Ksiba*. The deaths were related to a lack of coordination with the artillery. The casualties, 11 killed and 34 wounded, were meaningless because the British gave up the emplacement anyway.

⁶ Stöber, Hans (1966). *Die eiserne Faust. Bildband und Chronik der 17. SS-Panzergrenadierdivision Götz von Berlichingen*. Kurt Vowinckel.

⁷ For every year since 1945, Krelle wrote a family chronicle, an important source for this chapter (personal archive Heide Krelle). It documents shared events of the family (like travels, hikes, and cultural visits, illustrated with small drawings of landscapes, buildings, and people) as much as it is a tool for seeing things in a positive way.

⁸ For Stackelberg's influence see Krelle, Wilhelm et al. (1993). *Heinrich von Stackelbergs Marktform und Gleichgewicht: Vademecum zu einem Klassiker der unvollkommenen Konkurrenz*. Wirtschaft und Finanzen.

⁹ Krelle, Wilhelm (1947). *Das Say'sche Theorem der Nationalökonomie*. Dissertation, Albert-Ludwigs-Universität Freiburg im Breisgau.

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- ¹⁰ Blesgen, Detlef (2000). *Erich Preiser: Wirken und wirtschaftspolitische Wirkungen eines deutschen Nationalökonom (1900-1967)*. Springer; Krelle, Wilhelm (1968). "Erich Preiser: Ein Großer Deutscher Nationalökonom." *Jahrbücher Für Nationalökonomie und Statistik*, 181 (6): 490-517.
- ¹¹ Krelle, Wilhelm (1953). *Theorie wirtschaftlicher Verhaltensweisen*. Anton Hain.
- ¹² Krelle, Wilhelm (1951). "Wirtschaftstheorie als Mathematik: Bemerkungen Zu Paul Anthony Samuelson, Foundations of Economic Analysis." *Jahrbücher Für Nationalökonomie und Statistik*, 163: 1, 49-62.
- ¹³ Krelle, Wilhelm. „Militarismus,“ *Zeitschrift für die gesamte Staatswissenschaft*, 107: 698-722.
- ¹⁴ See Düppe, Till, E. Roy Weintraub (2014). *Finding Equilibrium: Arrow, Debreu, McKenzie and the Problem of Scientific Credit*. Princeton University Press.
- ¹⁵ Patinkin, Don (1951). "The Invalidity of Classical Monetary Theory." *Econometrica* 19 (2): 134-51.
- ¹⁶ Stolper, Wolfgang (1955). „Review of Theorie der wirtschaftlichen Verhaltensweisen“. *Zeitschrift für die gesamte Staatswissenschaft*, 111 (2): 382-83.
- ¹⁷ University Bonn, Faculty of law and economics, archive, Institut für Deutsche und Rheinische Rechtsgeschichte, Adenauerallee 24-42.
- ¹⁸ Koopmans, Tjalling, and Martin Beckmann (1957). "Assignment Problems and the Location of Economic Activities," *Econometrica*, 25 (1): 53-76.
- ¹⁹ Diary, July 18, 1954, Oskar Morgenstern Papers (OM). Rubinstein Library, Duke University.
- ²⁰ Krelle, Wilhelm (1955). „Der Einfluss von Lohnänderungen auf Preise und Beschäftigung.“ *Schriften des Vereins für Socialpolitik*, 11: 9-25.
- ²¹ Schefold, Bertram (2004). „Wissenschaft als Gegengabe: Neugründung und Aktivitäten des Theoretischen Ausschusses im Verein für Socialpolitik von 1949-1973,“ *Zeitschrift für Wirtschafts- und Sozialwissenschaften*, 124 (4): 579-608.
- ²² Krelle, Wilhelm (1949). „Review of Exakte Wirtschaftstheorie und Wirklichkeit, von Erich Reigrotzki“. *Jahrbücher für Nationalökonomie und Statistik*, 161 (5/6): 453-458; Krelle, Wilhelm (1952). "Die „Neue Österreichische Schule“ in der Nationalökonomie." *Jahrbücher Für Nationalökonomie und Statistik*, 164 (6), 454-65; Krelle, Wilhelm (1957). „Möglichkeiten und Grenzen der Ökonometrie,“ *Zeitschrift für die gesamte Staatswissenschaft*, 113: 415-426; Krelle Wilhelm (1960). "Mathematik in der Nationalökonomie: Zu dem Buch von Heinz B. Brand über die Fruchtbarkeit mathematischer Verfahren in der Wirtschaftstheorie." *ORDO*, 12: 349-53.
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- ²⁷ For this chapter, see also Hesse, Jan-Otmar (2010). *Wirtschaft als Wissenschaft. Die Volkswirtschaftslehre in der frühen Bundesrepublik*. Campus.
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- ³⁰ Düppe, Till (2017). “When modern economics learned French: Jacques Drèze and the foundation of CORE”, *European Journal of the History of Economic Thought*, 24 (2): 238-273.
- ³¹ For a full list of his hundreds of publications, see Plinke, Wulff (1997) (ed.). *Wirtschaftswissenschaft in christlicher Verantwortung: Ehrenpromotion von Wilhelm Krelle in der Wirtschaftswissenschaftlichen Fakultät der Humboldt-Universität zu Berlin*. Springer.
- ³² Krelle, Wilhelm (1965) (Hg.). *Theorien des einzelwirtschaftlichen und gesamtwirtschaftlichen Wachstums. Schriften des Vereins für Socialpolitik*, 34; (1985). *Theorie des wirtschaftlichen Wachstums*. Springer.
- ³³ Krelle, Wilhelm (1962). *Verteilungstheorie*. Gabler.
- ³⁴ Krelle, Wilhelm et al. (1968). *Überbetriebliche Ertragsbeteiligung der Arbeitnehmer*, Bd. I, II. Mohr.
- ³⁵ Krelle wrote year summaries to the enlarged family at the end of the year (1978-2004). Personal archive Christof Huth, with thanks to Gabriele Schumacher (born Krelle).
- ³⁶ Krelle, Wilhelm (1984). „Die Bibel ist ein Ökonomieleitfaden“, in *Rheinischer Merkur – Christ und Welt*, May 4: 20.
- ³⁷ Quoted in Bongard, Willi (1969). „Wer heute Wirtschaft lehrt: Porträts führender Nationalökonomien“ *Die Zeit*, 10. November: 87-96.
- ³⁸ Compare with Erickson, Paul et al. (2013). *How Reason Almost Lost Its Mind: The Strange Career of Cold War Rationality*. University of Chicago Press.
- ³⁹ Nützenadel (2005), cited above, pp. 117.
- ⁴⁰ See in retrospect Krelle, Wilhelm (1984). “20 Jahre Sachverständigenrat: War es der Mühe wert?” *Zeitschrift für die gesamte Staatswissenschaft*, 140 (2): 332-54.
- ⁴¹ Klein, Lawrence (1976). “Project LINK: Linking National Economic Models”, *Challenge* 19 (5): 25–29; Krelle Wilhelm, Lawrence Klein (1983) (eds.). *Capital Flows and Exchange Rate Determination. Zeitschrift für Nationalökonomie*, Supplement 3. Springer.
- ⁴² See Colander, David (2014). “Can European Economics Compete with U.S. economics? And Should it?” In Lanteri et al. (eds.): *The Economics of Economists*. Cambridge University Press: 153-173.
- ⁴³ Krelle, Wilhelm (Hg.) (1986). *Ökonomische Prognose- und Entscheidungs- und Gleichgewichtsmodelle: Ergebnisse eines gleichnamigen Sonderforschungsbereiches der Universität Bonn*, DFG-Reihe „Sonderforschungsbereiche“, VCH.
- ⁴⁴ Debreu, in Krelle (1986): v.
- ⁴⁵ Klein, in Krelle (1986): vi.
- ⁴⁶ Krelle, Wilhelm (1989). “Main Results of the Bonn—IIASA Research Project”. In: *The Future of the World Economy*. Springer: 39-82.
- ⁴⁷ This procedure was called “phasing out” (*Abwicklung*) and required a formal closing and reopening of those faculties that were “ideologically biased” – philosophy, law, history, pedagogy, and economics. Next to internal members, the external members of the commission came from his personal network: Martin Hellwig and Jaakko Honko from Helsinki, a regular visitor in Bonn.
- ⁴⁸ Düppe, Till (2015). “Border Cases between Autonomy and Relevance: Economic Sciences in Berlin - a Natural Experiment”, *Studies in the History and Philosophy of Science*, 51: 22-32; Düppe, Till (2017). “The Generation of the GDR: Economists at Humboldt University of Berlin Caught between Loyalty and Relevance,” *History of the Human Sciences*.

⁴⁹ Feldbauer, Gerhard (2006). „Die ‚Wende‘ trieb Zehntausende in den Tod: Opfer der ‚friedlichen Revolution‘“, *Icarus*, 24.11.

⁵⁰ Quoted in Fink, Heinrich (2011). „Befreit, entseucht, reinegemacht“, *Ossietsyky*, 14 (13).

⁵¹ *Berliner Zeitung*, 6.2.1996.

⁵² Quoted in *Junge Welt*, 17.02.2007: 8. His last promotion in May 1945, though, was not unknown to the reporter.

⁵³ Krelle, Wilhelm (1993). „Als ich den Youngplan erläutern musste,“ in Rudolf Pörtner (ed.), *Alltag in der Weimarer Republik: Kindheit und Jugend in unruhiger Zeit*, DTV.

⁵⁴ Krelle, Wilhelm (2003). *Economics and Ethics I: The Microeconomic Basis*. Springer.

⁵⁵ In Förster, Andreas (2004). „Grenzen der Erinnerung“, *Berliner Zeitung*, 15. Mai, p.3.