"But the Heart Must Speak for the Widows"

The Origins of Life Insurance in Germany and the Gender Implications of Actuarial Science

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This chapter analyzes the collapse of two widows' funds (*Witwenkassen*) in eighteenth-century Germany. The widows' funds were the precursors of modern life insurance, and their failure constituted a precondition for the creation of viable schemes based on the accurate calculation of risk—or, at any rate, provided evidence of the impossibility of operating a life-insurance scheme without the benefit of actuarial science.[1] The episode offers important perspectives on eighteenth-century middle-class life and particularly reflects the central place in modern society of the idea of insuring against risk and of the practice of assessing risk in terms of normative expectations derived from collective experience.[2] Viewed in historical perspective, the invention of life insurance schemes designed to cover large numbers of individuals represents a logical response to conditions of emerging modernity, since the purpose of such schemes is to counteract the insecurity endemic to an increasingly mobile and individualized society, while their operation depends on the displacement of trust from individuals to collectives, from local to remote, and from particular and experience-based to abstract or expert knowledge.[3]

It has become a commonplace among historians of gender relations that the emergence of such "modern" social and economic relations depended on the active exclusion of women from public life and civic or academic institutions. At the same time, scholars argue, the diffusion of characteristically modern forms of rationality required that qualities marked as feminine—the irrational, the particular—be deval-

ued or marginalized in favor of ways of thinking that relied on systematic generalization and abstraction. Mary Poovey has argued of double-entry bookkeeping, for example, that "in the translation of narrative into numbers, [its] apologists . . . effaced the contribution that women made to early modern business."[4] The crisis of the widows' funds provides an opportunity to reexamine the wider hypothesis, as it applies to the gendering of economic practices, in terms of the statements and actions of concrete individuals and the operation of social institutions.

The resolution of the crisis involved the implementation of a new way of understanding and describing the world of human relations: statistical thinking.[5] The success of the new and reformed institutions that emerged from the crisis depended on the public—or key sections of it—accepting that the calculation of risk on the basis of past experience could provide a firm (indeed, the only legitimate) basis for future action. This acceptance in turn implied a confidence in the authority of mathematics as a way of representing the world and in the credibility of those individuals—men—who adopted the title *mathematician.* And the object at the center of all the labors of the widows' funds was marriage itself, the touchstone for defining the respective needs, rights, and obligations of men and women, its contradictions thrown into relief by the practice of the widows' funds as the point at which love and money combined. The crisis of the funds thus precipitated both men and women into an extended reflection on the respective claims of mathematical rationality and obligation grounded in sentiment and/or inequality of power, under circumstances of considerable emotional and material stress. As a moment of institutional innovation in a period of shifting values, the story of the widows' funds is one in which discourse (in the limited sense of what people said about the world and their actions in it) and practice (in the limited sense of the actions they took) were continuously tested against one another.

The Crisis of the *Witwenkassen*

The widows' funds existed to provide pensions for surviving dependents on the death of an individual, with the pensions paid out of contributions made by living members of the funds. The earliest of these funds were founded in England and the Netherlands in the late seventeenth century, and a number of German funds were created at the beginning of the eighteenth century but disappeared by the 1720s. The

funds under consideration here belong to a second wave that began in the 1740s and intensified in the second half of the century. In the German lands, widows' funds always stood under state license, and many enjoyed the direct patronage of the *Landesherren.* Forward-looking but parsimonious princes saw in the funds an instrument for promoting marriage and population growth, guaranteeing the civic education of orphans, and/or providing death benefits for civil servants. Indeed, the widows' funds were designed expressly to meet the needs of respectable men who had an income but little or no property—that is, the urban professional and service middle class.[6] A key feature in the rise and fall of these funds was that they (unlike funds created by and for particular occupational groups) depended on the continuous recruitment of new subscribers (*Interessenten*) from the public at large.

Each of the widows' funds created at midcentury faced a crisis within twenty years of its founding, as the size of its pension commitments outstripped its income from subscribers' contributions. The first of the funds whose collapse is considered here is the Wittwen- und Waisen-Casse der beeydigten Christen-Mäkler, a fund for widows and orphans set up by a group of brokers on the Hamburg exchange in 1758. By 1777, more than 700 subscribers had been members at one time or another, but only 389 living *Interessenten* currently participated, and their contributions did not match the demands of the 121 living widows.[7] A second, better-known case is that of the Calenberg widows' fund (Calenbergische Wittwen-Verpflegungs-Gesellschaft), founded in 1766 and administered by a subcommittee of the Estates (the governing body) of the Hanoverian Duchy of Calenberg. The Calenberg was based in Hanover but recruited subscribers from all over Europe; in its first fifteen years, more than 5,000 subscribers passed through its ranks. When the crisis broke in 1779, the fund had had more than 3,700 living *Interessenten* (and their wives) on its books and owed pensions to 723 widows.[8] In terms of its scale, complexity, and geographical extent and of the range of social groups involved, the Calenberg case contrasts sharply with the Hamburg fund. In fact, however, the two cases were linked, sharing to some extent a cast of characters and played out in the pages of the pamphlet press, intelligencers, and the learned weeklies before a single national public. Moreover, the general patterns of the crises and the issues involved were very similar. In both cases, the crisis began with protests from subscribers as premiums began to rise. In both cases, fund administrators responded by seeking the advice of "experts" while entering into formal discussions

with subscribers, which spilled over into a wider public debate. And in both cases, what was at issue was the extent to which present and future subscribers (on the one hand) or the widows (on the other) could be expected to make sacrifices to get the fund back on its financial feet. In the end, both funds were reformed on the basis of arrangements involving severe reductions in the pensions of the living widows—60 percent, in the case of the Calenberg fund—as well as significant increases in premiums.

Mathematics and Masculinity

From the beginning, the public debate occurred among men, and the widows' fund project was marked in both style and content by the acting out of masculine agendas. The funds collapsed because their administrators failed to act systematically on a calculation of risk. All of these failures could not have been solved with mathematical expertise. To some extent indeed, the operation of the funds seemed designed to make advance reckoning unnecessary; however, some elements of risk management were involved. The funds generally excluded very old men and required proof of good health. The funds introduced a method of adjusting income to future commitments by scaling capital contributions and premiums according to a formula based on the ages of the husbands and the gap between the ages of husbands and wives. In the case of the Calenberg fund, the formula was based on estimates of life expectancy drawn from the tables of mortality drawn up by Johann Peter Süßmilch, and the founders of the fund also used census-based expectations about the maximum possible proportion of widows to subscribers to reassure themselves regarding the outside limits of their future commitments.[9] In short, although the founders of the widows' funds did not face up to the problem of creating a pension fund on sound actuarial principles, their half measures signaled the agenda for those with the courage to embark on such a project. Accurate and relevant vital statistics had to be collected, and on that basis fund managers could calculate how soon and for how long pension commitments would be incurred. These calculations in turn would form the basis for working out how much any individual *Interessent* would need to pay during his lifetime to cover his future widow's portion of the total pension bill.

The question of how to make the widows' funds work appealed to two key elements of the Enlightenment mentality. As an occasion for

collecting and analyzing vital statistics, the widows' fund provided a welcome test bed for those men who expressed their devotion to promoting civic well-being—their patriotism, in contemporary terminology—by amassing socially useful knowledge. At the same time, such funds offered a new object for the exercise of ingenuity in the solving of mathematical puzzles.[10] Almost as soon as the first funds were founded, a public exchange of treatises and polemics began, examining questions of principle and of information about the experiences of individual funds. Most of the best-known mathematicians of the 1780s were involved in some capacity in the crisis discussions, some in more than one capacity and in the service of conflicting interests.[11] In many cases, personal ambition fueled these conversations. The mathematics of widows' funds was a field of scholarly enterprise very much in the public view within a branch of learning that had yet to establish clear lines of disciplinary authority or a professional career structure. Some of the university-based mathematicians involved in the reform of the widows' funds were simultaneously engaged in an effort to transform mathematics from a mainly practical and vocational subject into a "scientific" discipline.[12] But while the boundaries between scientist and scholar remained uncertain, both academics and amateurs had something to gain from a debate about what was mathematically correct. Public scholarship of the kind on display in the pamphlet and periodical literature on the widows' funds offered an attractive way for an educated enthusiast to fulfill his intellectual and material aspirations. Johann Augustin Kritter, city treasurer of Göttingen, tirelessly promoted his statistical nostrums, producing dozens of articles and pamphlets and unsolicited reports from the 1760s onward. He began as the most acerbic critic of the Calenberg fund, having predicted its downfall as early as 1768; by the mid-1780s, the Calenberg administrators were paying him a generous retainer for his advice.[13]

The widows' fund project offered scope for self-realization and public achievement, thereby making it attractive but also stressful and resulting in more or less permanent controversy. The public discussion revealed very little agreement among the would-be experts about how to proceed at any point in the construction of a pension scheme. Moreover, the tone of the debate ranged from sardonic to irritable to positively abusive.[14] Participants at times ritually disclaimed any intent to provoke controversy. In this spirit, the honesty, honor, personal integrity, and civility in debate of those involved were often invoked as criteria for evaluating the policies of the fund administrators or the

arguments of the experts.[15] Honor and civility belonged to the vocabulary of masculine self-legitimation, and the same kind of rhetoric was mobilized in the crisis. *Interessenten* expressed their self-reproach in terms of men's obligations to exercise rational judgment under conditions of free association: "Who forced us to join the society? Weren't we free, before we bought in, to do the calculations for ourselves, and to stay out if we discovered errors?"[16]

At the same time, the basis for intellectual consensus about methods clearly was weak in Germany, in spite of the fact that workable techniques for calculating pensions had for decades been in circulation elsewhere on the Continent and notably in Britain.[17] The lack of disciplinary coherence among university-trained experts was answered by ignorance of matters mathematical among the general public, even among those who were enthusiastic about the widows' fund project.[18] But the difficulties of persuasion faced by the advocates of a new, statistical approach to the calculation of pensions reveal a more deep-seated problem. A gap existed between mathematics as a way of representing and managing reality and the way that most people understood the world. In the early years, widows' fund organizers tried to assess how many widows a fund could expect to have to support by looking at the number of widows in various recorded populations and asking which population most resembled the membership of a fund.[19] As time went on, some observers, most prominently Kritter and Oldenburg civil servant Georg Christian von Oeder, began to insist on proceeding probabilistically. Instead of looking for comparators, they treated the members of the widows' fund as a microcosm of a global population subject to universal laws of motion. Age-specific life expectancies derived as averages from past experience (as represented by mortality tables) could then be used to predict not only how long husbands or wives would live but also how long the marriage—the point at which the life risks of both partners and the financial risk of the fund coincided—would last.[20] This change of approach set the discussion on the path toward modern actuarial accounting and hence toward life insurance proper, though problems of information and method remained. But the probabilistic approach met with resistance from those who simply could not accept the value or possibility of calculating the future. Oeder's and Kritter's arguments were brushed off with a combination of optimism (or faith in the notion of growth) and fatalism, the conviction of the inherent unpredictability of natural processes and the ineffable uniqueness of human experience: "Say what you like

about the certain calculation of the possible number of deaths, in the end . . . the whole business by its nature rests on uncertainty."[21] A shift in mentality would be required to close this gap and to establish the authority of mathematicians to make meaningful statements about everyday life.

"The Howls of the Widows": Fantasy Females and Real Women

The masculinity of the protagonists in the public debate was thrown into relief by the presence of women at its center. Wives and widows were objects, both of the concern for their standard of living that actuated the creation of the funds and of an intensive public conversation about their life histories. For example, anyone with a widow to support needed to know how long she would remain a widow. The question of when and under what circumstances a widow might remarry was material to the design of the funds and to all attempts to explain why so many more widows existed than had been anticipated.[22] The question of how long a widow would live—or sex-specific life expectancy—was also relevant to this discussion. This question was not answered by Süßmilch's tables, on which all the widows' funds relied and which made no distinction between men and women. But nearly all observers agreed that women lived longer than men, and even if the task of quantifying the difference seemed too difficult, commentators speculated at length on the reasons for it, offering treatises on the costs and benefits of spinsterhood, childbearing, breast-feeding, and menopause.[23]

In mathematicians' conversations, then, women provided the point of reference for arguments about particularity and difference and how they could be accommodated within the project of accounting for humanity in abstract and general terms. Oeder displayed an almost postmodern awareness of this issue when he faulted Kritter for an attempt to update Süßmilch's mortality tables. Kritter had introduced a calculation for female mortality alongside the original figures; Oeder argued that Kritter ought to have produced a new calculation for men as well.[24] As Oeder's comment suggests, however, difference itself was not necessarily a problem for the overall statistical project. The terms in which the more self-conscious innovators dealt with the problem of incorporating women into a general account of humanity illuminates what is most characteristic in their approach to statistics: the attempt to maintain a dialogue between the "ordinary experience" observable in everyday life

and subject to commonsense explanation and the representation of general processes in numbers and tables, or "collected experience."

The outbreak of the crisis generated a rhetorical arena in which women were increasingly located in opposition to the project of mathematical rationality. In the pamphlet and periodical literature of the crisis years as in the files of the funds, the widows to whom pensions were owed appear as an anonymous mass, numbered, sorted, and subjected to various kinds of hypothetical calculations. Like characters in a fairy tale, the Calenberg administrators were haunted by the complementary nightmares of an army of widows and the "many casks of gold" that the government stood to lose as a result of the fund's misadministration.[25] Here women represent a threat to be overcome: they embody the fact of failure and everything that threatens future success. This vision was anticipated as early as 1766, when Johann David Michaelis, professor and secretary of the Göttingen Scientific Society, warned against the overly ambitious scope of the proposed Calenberg fund. Should the fund fail, he said, "all the widows could join together and enter into a common suit against the Estates." Although he thought it unlikely, the possibility that the widows might win their suit conjured up a vision of general disaster: the "total ruin" of cities forced to raise taxes to cover the compensation claim as well as of any well-meaning city father who had approved the fund and of his sons.[26]

In this early text, Michaelis offered another image—the picture of the young wife or couple—that formed an important component of public understanding of the widows' funds even before the crisis. For Michaelis, young love militated against the success of the fund: too few young, healthy men were likely to join because "a young husband rarely gives any thought to death, and it would seem like a lack of delicacy and decency or the tenderness of young love if [his bride] urged him to join. And she rarely knows the state of his accounts."[27] Michaelis's statement implies that an older and better-informed wife would encourage her husband to buy her a pension, and that supposition became explicit during the crisis. In one of his treatises, Kritter cited a letter he had received from one of the members of the Hamburg brokers' fund:

> If a woman heard that her best friend, neighbor, sister-in-law, etc. was in the brokers' fund, she gave her husband no peace until he, too, joined. . . . [W]ho can resist the entreaties of a beloved wife? I joined the society against my better judgment.[28]

Kritter's wheedling wife and doting husband seem to have stepped out of the pages of a contemporary tract against luxury consumption, and the message appeared quite explicitly in a commentary on Süßmilch published shortly after the crisis had blown over. According to the author, the passion for widows' funds quite simply represented a symptom of the taste for "luxury and the tyranny of fashion."[29] There is good reason to see the buying of widows' pensions as a form of consumerism that followed the rhythms of fashion. But in the context of the crisis, the figure had a clear rhetorical function: The image of woman as the embodiment of or spur to folly was clearly related to the shame and embarrassment suffered by male *Interessenten* who knew they should have known better. More particularly, the association set up between transgressive femininity and the old widows' funds can be read as a discursive strategy directed at legitimating the project of "rational" reform.[30]

The rhetoric of luxury or feminine excess was problematic because it clashed with the key legitimating image of the funds: the figure of the poor widow. Every project for the establishment of a widows' fund had started from the presumption that in the absence of organized provision, middle-class widows were doomed to destitution. In his handbook for the founders and administrators of institutions for the support of widows, Carl Daniel Küster painted in the gloomiest colors the situation of the army of underpaid civil servants destined to tremble in horror at the prospect of death, "which will surrender [their] loved ones to poverty, expose them to contempt and make them prey to the sorry insufficiency in which [the servant] daily sees widows and orphans helplessly sighing."[31] During the crisis, this image was overshadowed in the rhetoric of *Interessenten,* resentful of being asked to pay more to keep the funds afloat, by the picture of widows grown rich on their "excessive" or "disproportionate" pensions: "Let us say now and never again, with a pity completely unsuited to the times, the poor widows. . . . It is precisely in the advantage enjoyed by the earlier widows [those in the first cohort of *Interessenten*] that the damage lies which touches the society so nearly." Even these men, however, strove to retain the title of defenders of women by foregrounding their duty to their wives: "The poor widows, the poor widows! Well, to be sure, the poor widows, future ones as well as the present ones, and maybe the former more than the latter; [the wives] should join in the debate and try to secure some kind of sufficiency for themselves."[32] The vision of

the crisis as a conflict of interest between wives and widows is present also in the account of the reform of the Calenberg fund given by Kiel professor of mathematics and moral philosophy Johann Nicolaus Tetens, but in his hand it signals genuine ambivalence, because he was implicated both as an expert adviser and as spokesman for a large group of *Interessenten.*[33] For men suspicious of any reform, the threat to widows' livelihoods provided a persuasive moral argument that they did not hesitate to mobilize against the schemes of the mathematicians. In his account of the Hamburg brokers' fund, Kritter describes "the howls of the widows and the slanders of ill-informed citizens" as the chief obstacles to reform.[34] Experts such as Tetens were at a loss to respond to such reproaches, for their involvement placed them in a genuine dilemma: as men of reason, they found themselves called on to act against their duty and inclinations toward helpless women. "That is what justice strictly demands," Carl Chassot de Florencourt would write in his treatise on the calculation of annuities, "but the heart must speak for the widows."[35]

Even those men who admitted no pangs of conscience were apprehensive about the "ferment and . . . general excitement" that might be precipitated by the appearance of injustice to the widows. In March 1781, the secretary of the Calenberg administration reported that a suggestion for cutting pensions had met with approval among the Estates: however, "the only worry is that the widows will set up a mighty howl."[36] It was indeed to be expected that the widows would have something to say. In the Hamburg case, the fund administrators circulated the published reform plans to widows as well as *Interessenten* and encouraged the widows and other pensioners to take part in meetings regarding the various schemes. The Calenberg administrators made no such overtures but acted at each point on the prompting of *Interessenten* and publicly invited the widows to respond to decisions once made; unlike the organized *Interessenten,* however, the widows had no formal input into deliberations. But the response came uninvited. Within a week of the issuing of the notice that announced an initial one-third reduction in pensions, protests reached Hanover. The first on record came from Lüneburg over the signatures of Sophia Dorothea Boje, Lucia Margaretha Feise, Charlotte Justine Hartje, Catharina Regina Lamprecht, Freya Elisabeth Wilhelmina Sarnighausen, F. E. Reineke, and Magdalena Elisabeth Gaden. Over the years followed a series of petitions and lawsuits to which the widows, the fund administration,

and groups of *Interessenten* were party in various configurations.[37] As of 1789, when the last suit was still pending, 568 named widows or their heirs had empowered four lawyers to act on their behalf.[38]

With very few exceptions, the widows' submissions employed legal language and argued for the restoration of the pensions as a consequence of rights flowing from the contract between their husbands and the fund, a contract that they argued was equally binding on living *Interessenten.* The widows abstained from speaking for themselves, both in the sense that the arguments were probably—though not certainly (many of the women had been married to men with legal training)—formulated not by them but by their lawyers and in the sense that the rights they claimed derived from those of their husbands. Even the long-winded and Latinate lawyers' statements, however, contained justificatory statements about the women that echoed the widows' signed statements, and the documents employed rhetorical strategies that played on male interlocutors' anxieties and fantasies.

The widows' claims were calculated to reinforce the old funds' central legitimating arguments: at every opportunity, the women pointed out the hardships that they and their children were suffering or could expect to suffer. Unlike the founders of the widows' funds, however, the widows refused to present their poverty as a natural consequence of femininity. While invoking the moral power of the stereotype of the poor widow, they explained their predicament in terms of discriminatory social arrangements. They acknowledged that the living *Interessenten* and their wives had also made sacrifices and stood to lose still more but pointed out that male antagonists at least had the right and the opportunity to make up their losses by earning more money: "We are losing . . . our livelihood in the truest sense, which the strictest judge would not demand even from a malicious bankrupt but is due to be taken from us without any imputation of guilt."[39] A petition from four widows for the restoration of full pensions dating from some years after the crisis made the point that the women were living in poverty only because their husbands, having joined the fund, refrained from making the more conventional provisions for security on which the widows could otherwise have relied.[40] And finally the widows turned against the *Interessenten* the same reproach with which the men had castigated themselves:

> If the defendants . . . , before joining a fund of their own free will . . . , failed to undertake an examination of its operations them-

> selves, or—lacking sufficient knowledge—to arrange for an examination by experts . . . given that, by their own . . . account, the unsafety of the fund was being claimed in the public press before and soon after it was opened, . . . the loss they are suffering is the fruit of their own guilt.[41]

The nature of the crisis demanded that the widows take a position on the question of principle, the competence of the mathematicians, and the plausibility of their reform proposals. In practice, the question of how to treat the widows was one for the lawyers—a question of respective obligations—but the claims of the mathematicians were always implicated in the way in which justice was defined. The mathematicians placed themselves on the side of those arguing for a reduction in pensions by confirming retrospectively that the pensions had always been disproportionate or excessive (if in a strictly arithmetic rather than moral sense—that is, in relation to the premiums paid in). The mathematicians were also skeptical about any emergency measures that might rescue the widows at the expense of a long-term technical solution to the crisis. It was therefore easy to see the injurious features of the reform as the mathematicians' project, and it is not surprising to find widows describing the reduction of pensions as a consequence of the "stringency of correct mathematical principles."[42]

In other contexts, widows directly addressed the question of whether it was possible in principle to ground a fund on mathematical or scientific principles, apparently placing themselves on the side of the opposition. Arguments of this kind were adduced in connection with the concept of hazard, or a game of chance, already a key term in the emerging science of probability. The law defined games of chance as aleatory contracts, defined by the absolute uncertainty of its outcome. People entered into such contracts aware that each party might equally well gain or lose: the loser therefore had no legal claim in respect to his (or her) loss. Insurance contracts and other contracts whose outcome depended on the life or death of an individual were universally treated as aleatory contracts in law. The mathematicians aspired to reduce the impact of sheer chance (and the actual risk to both parties) by both developing an accurate calculation of life expectancy and distributing the risk over the largest possible number of individuals. Such was the promise of a properly operating fund.[43] In the crisis, however, this vision was overshadowed by the fact of the incompetence of the actual funds. Because the widows were perceived as the party that had gained

from this incompetence and that must lose by a reform, the notion of an aleatory contract or game of chance was almost always invoked in their favor. In support of the view that the widows should not now be penalized for the overly generous terms on which their husbands had joined, the Law Faculty at the University of Leipzig explained that a widows' fund depended "on the length of human life, and so on a completely uncertain outcome."[44] The widows' submissions became increasingly explicit and aggressive in using this argument, so that the latest one in the Calenberg files (dating from July 1789) reads as a frontal attack on mathematical probability: The *Interessenten,* the widows argued, "knowingly entered into an insecure transaction," for the Calenberg is "an essentially insecure enterprise . . . because everything depends on the calculation of mortality."[45]

From Widows' Funds to Life Insurance: The Emancipatory Potential of Numbers

The attitude adopted by articulate women in the crisis thus appears to confirm a paradigm in which the discourse of scientific rationality reduces women to the embodiment of unreason. Hardly silenced, women were nonetheless maneuvered into a rhetorical position from which they could speak only against reform. A closer look at the institutions themselves—and at some of the ideas surrounding them—suggests a more complicated and ambivalent gender politics. In the widows' funds of the 1750s and 1760s, women were objects rather than subjects. The ulterior purpose of the funds—explicit in the case of the Calenberg and still apparent in Küster's work of 1772—was not to meet the needs of the widows but to guarantee the peace of mind of husbands and thereby serve the public good. The pension essentially embodied the extension of the husband's will and the guarantee of his ethical interest after his death. Accordingly, only married men could be *Interessenten,* and only married women could be pensioners, while *Interessenten* enjoyed rights of disposition over their interests in the fund that widows were denied. From this point of view, the widows' funds were patriarchal institutions in the classic sense. At the same time, the particular vision of the helplessness of middle-class women deployed to legitimate the funds can be seen as a manifestation of the neopatriarchical ideology of the nuclear family. The claim that any middle-class widow was poor unless actively assisted depended on naturalizing the presumption that middle-class women could not earn liv-

ings for themselves. Repetition then turned this presumption into fact.[46]

The contemporary reception of the widows' funds had utopian elements, however, that point to an awareness that the technology of insurance had the potential to release individuals from ascribed social roles and relationships based solely on economic dependency. In a humorous 1772 essay deploring the fact that spinsters had nothing like a widows' fund to save them from humiliating dependency on unwilling relatives, essayist and civil servant Justus Möser presented a cheerful updating of cameralist logic: according to his female speaker, people insist that widows' funds encourage marriage because they make it possible for good men without property to find happiness in love matches.[47] However satirically, Möser was signaling a process whereby capital, in the liquid form of cash payable in installments, was loosed from its function as the material foundation for patriarchal power relations and permitted to be invested at will in new kinds of relationships.[48]

The actual theme of Möser's text—for whom do the widows' funds exist?—was eagerly discussed at every stage in the history of the funds. In the 1770s, a number of funds began to allow men to insure their lives for the benefit of women other than their wives.[49] A critical step toward genuine democratization of the funds—as well as the first step in the institutional development of modern life insurance—came out of the crisis in Hamburg. In 1778, the Hamburgische Allgemeine Versorgungsanstalt (HAVA) opened for business. Created under the auspices of the Hamburg Patriotische Gesellschaft, an association that represented a coalition of members of the Hamburg patriciate as well as intellectuals, professional men, and jobbing scholars such as Johann Georg Büsch (an *Interessent* active in the Calenberg case), the HAVA was not only uniquely successful but also unique in offering a range of services for people of all classes.[50] More particularly, any individual, regardless of sex, who could pay the premium could contract for a pension for himself or herself or for anyone else, and even people with dangerous occupations could be taken on under the secure umbrella of a calculated risk adequately distributed.

This system was the work of Georg Christian von Oeder. As his published and unpublished notes make clear, his scheme for the HAVA reflected a combination of faith in systematic calculation and a critical approach to gender relations. He claimed that by the 1760s, he had begun to wonder why only married men could be insured, though

he did not dare to mention his doubts outside a very limited circle until the 1780s and never published them. In his notes for the HAVA, he was quite insistent that a fund armed with reliable mortality data and an accurate table of premiums need have no interest in any aspect of an individual's life or character except the capacity to sign a contract.[51] In 1781, Oeder set up a life annuity scheme as an extension to the widows' fund that he had previously created for his employer, the Duke of Oldenburg. This scheme was designed to help the needy—in particular, respectable women, of whom Oeder wrote perspicaciously that they were at risk of poverty because "to be sure they may be healthy and capable of earning a simple living by work, but according to our constitution they cannot take up that kind of work."[52]

Oeder told the duke that in response to a request from a widow, he had decided to propose the extension. This widow represents a positive counterpart to the critical and satirical figures of women cited earlier in the chapter. Read against the grain, the starry-eyed bride, wheedling wife, and worried spinster of male fantasy can stand alongside this widow as evidence of the way in which women's demands for services fueled innovation in this sphere and were perceived as doing so. Similarly, when real women took action to obstruct reform of the old widows' funds, they were defending an innovative institution that had served their needs, sometimes granting them a degree of independence not envisaged by the funds' founders.

Oeder's new foundation provoked a comment from one of his better-known contemporaries, historian and publicist August Ludwig von Schlözer, whose work represents another point of contact between mathematical politics and gender politics. Life annuities—pensions purchased by individuals for themselves during their lifetimes—were morally controversial in a way that widows' pensions were not. Most critics saw life annuities as a temptation to selfishness and luxury, a means of diverting to one's own enrichment resources that ought to be devoted to the support of a family. Schlözer also disapproved, but his critique bore a peculiar emphasis. In illustration of the dangers, he adduced the example of a man whose purchase of a life annuity had undermined family life. He could now afford to pay strangers to care for him in times of trouble, but he had to rely on their services, because in translating his capital—a potential inheritance—into a pension, he had also alienated the affections of his nieces: "The fine capital leaves the family, and the man is dead to his relatives." In a negative version

of the process satirically celebrated by Möser, the cash flow had washed away the amalgam of love, duty, and material interest that held together the patriarchal household.[53]

Schlözer's emphasis on the degenerative rather than the liberating features of this development bears some relation to the position he held in the developing controversy about the proper shape and uses of statistics. In Germany, this dispute would come to a head at the turn of the century between a group of "university statisticians" and the representatives of a "tabular statistics" based mainly in state administrations. The university statisticians, who preferred to gather qualitative data and compile narrative descriptions, accused the "common tabulators" of being soulless and mechanical in their approach. In the wake of the French Revolution, the tabulators perceived this charge as a reproach to the democratic spirit. They saw quantitative representations of social reality—numbers—as universally accessible and therefore politically empowering. For their part, the tabulators accused the statisticians of elitism and of being subject to arbitrary manipulation (*Willkür*) in the interests of despotic regimes.[54] Schlözer was one of the founders of university statistics, and his resistance to the individualizing effects of new insurance technologies in the 1770s seems to anticipate the conservative integralism of 1800.

Conclusion

To some extent, the democratization of the pension funds, with its capacity for empowering women, represented an artifact of immature actuarial technology. Ascribed functions—wife, daughter, widow—that constrained women's opportunities for self-development disappeared when people became numbers, and the larger the numbers employed to derive (for example) average life expectancy, the less important differences among individuals became. The only variable that remained relevant was physical constitution: age and health. But this in itself meant that in the longer term, actuaries would have to turn their attention to identifying distinct risk groups within the population. As early as the 1780s, the discussion about the differences in life expectancy between men and women, married and single, was beginning in earnest. In practice, the modern life insurance operations that became firmly established in Germany from the 1820s on cultivated a patriarchal vision not very different from that of the widows' funds.

These insurance schemes directed their publicity at anxious husbands and fathers, although they never again excluded women from buying pensions in their own right solely on grounds of sex.

It would therefore be an exaggeration to argue that life insurance liberated women. In any case, a generation's feminist critique of Enlightenment individualism has taught us to be wary of promises of emancipation held out by institutions or forms of representation that deny the power and meanings of difference. A system that denies the relevance of ascribed differences can prove unresponsive to real needs that grow out of those differences. The crisis of the widows' funds exposes the late eighteenth century as a critical moment in the formation of both class and gender consciousness but also makes clear that many aspects of experience and mentality were simultaneously in flux and that a range of outcomes remained possible. What emerged from the ferment was often unexpected and always ambiguous. The defining feature of the period is the way in which a combination of changing lifestyles and Enlightenment thinking made new social arrangements conceivable. The widows' funds were new in their time, a bold experiment in providing a new answer to an old problem. The emergence of the first life insurance scheme represented a step down the road toward modernity that involved a self-conscious move away from the endorsement and reproduction of historic forms of patriarchy. In the thinking of a consistent *Aufklärer* such as Oeder, this suggested the option of political and social individualism and allowed for the application of new technologies that in principle accorded women a new status as active agents rather than simply objects of policy. The more familiar story is the one in which historic patriarchal arrangements were replaced by the new patriarchalism of the nuclear family based on an essentialized polarity of sexual characters. The rhetoric surrounding the widows' funds bears evidence of an interplay between the old and the new patriarchy as well as of the ways in which the notion of marriage based on affinity or sentiment could ally with utopian visions of self-fulfillment in a money economy. How women were placed or placed themselves in relation to the multiplicity of visions on offer always constituted a function of circumstance as well as ideology. But the noisiness of the debate over the reform of the widows' funds suggests this generation's willingness to consider how circumstances might be transformed if people could dare to rethink the relationship between past and present and seek ways of taking power over the future.[55]

Notes

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1. Peter Borscheid, *Mit Sicherheit leben: Die Geschichte der deutschen Lebensversicherungswirtschaft und der Provinzial-Lebensversicherungsanstalt von Westfalen* (Greven, 1989), 1:13.

2. Space does not permit a full accounting of the recent historiography on life insurance, most of which focuses on the British case. Key works covering this period include Lorraine J. Daston, *Classical Probability in the Enlightenment* (Princeton, 1988); Lorraine J. Daston, "The Domestication of Risk: Mathematical Probability and Insurance, 1650–1830," in *The Probabilistic Revolution,* vol. 1, *Ideas in History,* ed. Lorenz Krüger, Lorraine J. Daston, and Michael Heidelberger (Cambridge, 1987), 237–60; Geoffrey Wilson Clark, *Betting on Lives: The Culture of Life Insurance in England, 1695–1775* (Manchester, 1999).

3. For a recent definition of modernity in these terms, see Anthony Giddens, *The Consequences of Modernity* (Cambridge, 1990).

4. Mary Poovey, "Calculating Merchants: Accounting, Civility, and the Natural Laws of Gender," *Differences: A Journal of Feminist Cultural Studies* 8.3 (1996): 1–19. See also Mary Poovey, *A History of the Modern Fact* (Chicago, 1998), chap. 2. The literature on gender and modern science, including that on women and mathematics, is now extensive: see Ceranski, this volume.

5. Theodore M. Porter, *The Rise of Statistical Thinking, 1820–1900* (Princeton, 1986), focuses on the British and French cases. For the peculiarities of German statistical practice in the nineteenth century, see Theodore M. Porter, "Lawless Society: Social Science and the Reinterpretation of Statistics in Germany, 1850–1880," in *Probabilistic Revolution,* ed. Krüger, Daston, and Heidelberger, 351–75; Ian Hacking, "Prussian Numbers, 1860–1882," in *Probabilistic Revolution,* ed. Krüger, Daston, and Heidelberger, 377–94. In practice, the German experience of successful life insurance schemes mirrored that of other countries in that the advantages provided by refined actuarial techniques were hedged by extreme caution in amassing and managing the capital fund. For the British case, see Daston, *Classical Probability,* 180–81; Theodore M. Porter, "Precision and Trust: Early Victorian Insurance and the Politics of Calculation," in *The Values of Precision,* ed. N. M. Wise (Princeton, 1995), 173–97.

6. Bernd Wunder, "Pfarrwitwenkassen und Beamtenwitwen-Anstalten

vom 16.–19. Jahrhundert: Die Entstehung der staatlichen Hinterbliebenenversorgung in Deutschland," *Zeitschrift für historische Forschung* 12 (1985): 429–98; J. C. Riley, "'That Your Widows May Be Rich': Providing for Widowhood in Old Regime Europe," *Economisch- en sociaal-historisch jaarboek* 45 (1982): 58–76.

7. *Sammlung verschiedener Aufsätze die Hamburgische beeidigte Christen-Mäckler Wittwen- und Waysen-Casse betreffend zum Besten sämmtlicher Interessenten und Pensionisten zum öffentlichen Druck befördert von den jetzigen Vorstehern gedachter Casse* (Hamburg, 1777). See also William Boehart, *Nicht brothlos und nothleidend zu hinterlassen* (Hamburg, 1985).

8. The most detailed account of these events in the literature is provided by Reinhard Oberschelp, *Niedersachsen, 1760–1820* (Hildesheim, 1982), 1:230–37. The records are deposited in Niedersächsisches Hauptstaatsarchiv Hannover (hereafter cited as HStAHann), Dep. 7B (Landschaft Calenberg).

9. For a detailed account of the operation of the Calenberg fund, see Eve Rosenhaft, "Did Women Invent Life Insurance? Widows and the Demand for Financial Services in Eighteenth-Century Germany," in *Family Welfare: Gender, Property, and Inheritance since the Seventeenth Century,* ed. David R. Green and Alastair Owens (London, 2004), 163–94.

10. On the contemporary interest in vital statistics, see Herwig Birg, *Ursprünge der Demographie in Deutschland* (Frankfurt, 1986). On the eighteenth-century uses of *patriot* and *patriotism* and on the development of what would become the social sciences in this context, see most recently Marion W. Gray, *Productive Men, Reproductive Women: The Agrarian Household and the Emergence of Separate Spheres during the German Enlightenment* (New York, 2000); esp. 129–31.

11. The following men with reputations for mathematical expertise or who published mathematical works have so far been identified as being involved: Philip Peter Guden (1722–94), Johann Augustin Kritter (1721?–98), D. Leporin (dates unavailable), Georg Christoph Lichtenberg (1742–99), Georg Christian von Oeder (1728–91), Matthias von Drateln (1742–1802), Johann Nicolaus Tetens (1736–1807), Thomas Bugge (1740–1815), Christian Carl Lous (1724–1804), Abraham Gotthelf Kästner (1719–1800), Andreas Böhm (1720–90), Wenceslaus Johann Gustav Karsten (1732–87), Carl Friedrich Hindenburg (1741–1808), Carl Chassot de Florencourt (1757–90), and Leonhard Euler (1707–83).

12. Herbert Mehrtens, "Mathematicians in Germany circa 1800," in *Epistemological and Social Problems of the Sciences in the Early Nineteenth Century,* ed. H. N. Jahnke and M. Otte (Dordrecht, 1981), 401–20.

13. Kritter to Calenberg administration, 17 December 1787, HStAHann, Dep. 7B, 359:49. On Kritter, see Bernhard Fabian, ed., *Deutsches biographisches Archiv: Eine Kumulation aus 254 der wichtigsten biographischen Nachschlagewerke für den deutschen Bereich bis zum Ausgang des neunzehnten Jahrhunderts,* Microfiche-Edition (Munich, 1982–86), fiches 215–31; Hans-Jür-

gen Gerhard, *Diensteinkommen der Göttinger Officianten, 1750–1850* (Göttingen, 1978).

14. See the comment of Ng [pseud.] in a review of P. P. Guden's *Gründliche Theorie und practische Vorschläge zu Witwen-Cassen* published in *Allgemeine deutsche Bibliothek* 54 (1783): 221–24.

15. See, for example, Georg Christian von Oeder's "admonition to tolerance" in his reply to Kritter, "Erinnerung, veranlasst durch Herrn Kritters Aufsätze im Göttingischen Magazin," *Göttingisches Magazin der Wissenschaften und Literatur* 3.4 (1783): 487; *Sammlung verschiedener Aufsätze,* 70, 92–93. On civility as a touchstone for credibility among seventeenth- and eighteenth-century scholars, see Steven Shapin, *A Social History of Truth* (Chicago, 1994); Anne Goldgar, *Impolite Learning: Conduct and Community in the Republic of Letters, 1680–1750* (New Haven, 1995).

16. *Sammlung verschiedener Aufsätze,* 95–96. See also the shamefaced comment of Johann Georg Büsch, *Allgemeine Uebersicht des Assekuranz-Wesens,* in his *Sämmtliche Schriften* (Vienna, 1813–15), 5:327. This is the only reflection in all of Büsch's published work on the Calenberg episode, although he was deeply involved at every stage in the fund's development and crisis.

17. Johann Nicolaus Tetens commented on this phenomenon in *Einleitung zur Berechnung der Leibrenten und Anwartschaften, die vom Leben und Tode einer oder mehrerer Personen abhängen* (Leipzig, 1785–86), 1:ix–xi. Tetens exaggerated the backwardness of his compatriots in comparison to the English: only during the 1760s did a British life insurance firm, the Equitable, adopt mathematical calculations as the basis of its actuarial practice, and only in 1769 were the principles on which it operated published (Richard Price, *Observations on Reversionary Payments* [London, 1769]).

18. On mathematical education in the eighteenth century, see Gert Schubring, *Die Entstehung des Mathematiklehrerberufs im 19. Jahrhundert,* 2nd ed. (Weinheim, 1991), 27–33. For examples of and comments on mathematical naïveté, see *Sammlung verschiedener Aufsätze,* x; Tetens, *Einleitung,* 1:xvii.

19. See, among many examples, Johann Augustin Kritter, *Sammlung von dreyen Aufsätzen über die Calenbergischen, Preussichen, und Dänischen Wittwenversorgungsanstalten* (Hamburg, 1777), 18–42.

20. See [J. A. Kritter], *Prüfung einer neulich herausgekommenen Schrift des Herrn Philip Peter Guden in Hannover von Witwen-Cassen* (Göttingen, 1771). The concept of average duration of marriage was current in France and the Netherlands in the 1760s and even before. An early (and perhaps the first) appearance of the term in print in German was in a translation of Daniel Bernoulli's work of 1768: "Herrn Daniel Bernoulli Abhandlung von der mittleren Dauer der Ehen," *Hamburgisches Magazin* 9.49 (1771): 484–86. See also Huib J. Zuidervaare, "Early Quantification of Scientific Knowledge: Nicolaas Struyck (1686–1769) as a Collector of Empirical Data," in *The Statistical Mind in a Pre-Statistical Era: The Netherlands, 1750–1850,* ed. P. M. M. Klep and

I. H. Stamhuis (Amsterdam, 2002), 143. For a general account of statistical probability in relation to life expectancy and the calculation of annuities drawing mainly on English, French, and Dutch sources, see Daston, *Classical Probability,* chap. 3. On Oeder, see C. Haase, "Georg Christian von Oeders Oldenburger Zeit," *Oldenburger Jahrbuch des Oldenburger Landesvereins für Geschichte, Natur- und Heimatkunde* 64.1 (1965): 1–58.

21. *Sammlung verschiedener Aufsätze,* 97. For the idea that long-term expansion would overcome all problems, see J. A. Kritter, *Beweis, daß die Männer bei einer Wittwencasse 135 Jahre alt werden* (Göttingen, 1769), 18.

22. See, for example, Kritter, *Beweis,* 10; J. A. Kritter, "Unvorgreifliche Gedanken über den von Hochlöbl: Calenbergischer Landschaft publicirten Plan einer Allg. Witwen Pflegschaft" (1766), HStAHann, Dep. 7B, 327I:179–203; letter of the administrators of the Calenberg to King George III, Hanover, 11 July 1781, HStAHann, Dep. 7B, 339:S.58–65; [G. C. von Oeder], "Prüfung des Plans der in der Kayserlichen Freien Reichs Stadt Hamburg zu errichtenden allgemeinen Versorgungs-Anstalt," 4 October 1777, Firmenarchiv der Hamburg-Mannheimer VersicherungsAG Hamburg, Altbestand HAVA (FAHM), F0001–19, bd. 3, eb. 2, no. 13; Leonhard Euler, "Des Herrn Leonhard Eulers nöthige Berechnung zur Einrichtung einer Witwencasse," *Neues Hamburgisches Magazin* 43.2 (1770): 5.

23. See, for example, G. C. von Oeder, "Theorie zu Witwenkassen und Versorgungsanstalten überhaupt," *Deutsches Museum* 2.8 (1779): 125–26; P. P. Guden, "Vom längern Leben des weiblichen Geschlechts in Vergleichung mit dem männlichen," *Leipziger Magazin zur Naturkunde, Mathematik, und Oekonomie* 2 (1781): 432–47; J. A. Kritter, "Untersuchung des Unterscheides [*sic*] der Sterblichkeit der Männer und der Frauen von gleichen [*sic*] Alter," *Göttingisches Magazin der Wissenschaften und Literatur* 2.2 (1780): 229–58.

24. Oeder, "Erinnerung, veranlasst durch Herrn Kritters." The article in question was Kritter, "Untersuchung des Unterscheides."

25. See, for example, memorandum by Otto von Münchhausen, 29 March 1781, HStAHann, Dep. 7B, 339:7–12.

26. Johann David Michaelis, *Einige Zweifel und Erinnerungen, so mir bey der Calenbergischen Witwenpflegegesellschaft beygefallen sind,* in *Vermischte Schriften* (Frankfurt, 1766–69), 2:173–77. Michaelis envisaged problems for city administrations because the Calenberg Estates included representatives of the territory's principal cities.

27. Ibid., 163.

28. J. A. Kritter, *Sammlung wichtiger Erfahrungen bei den zu Grunde gegangenen Witwencassen* (Göttingen, 1780), 6–7.

29. Johann Peter Süßmilch, *Die göttliche Ordnung in den Veränderungen des menschlichen Geschlechts, aus der Geburt, dem Tode, und der Fortpflanzung desselben erwiesen,* ed. Christian Jacob Baumann (Berlin, 1787), pt. 3, 465–66.

30. I discuss the themes of consumerism and fashion in the pension market at greater length in Eve Rosenhaft, "Thrift as Consumption: The Origins of

Life Insurance in Hamburg and the Uses of Money in Middle-Class Culture (1750–1790)," in *Wealth and Thrift: Paradoxes of Bürger Culture in Hamburg, 1700–1900 / Reichtum und Sparsamkeit: Paradoxien in der Bürgerkultur Hamburgs, 1700–1900,* ed. Frank Hatje and Ann LeBar (Hamburg, 2006). The rhetorical association of women with financial speculation was well established in Europe by the 1770s and had some basis in women's participation in the stock markets of the period; see, for example, Catherine Ingrassia, *Authorship, Commerce, and Gender in Early Eighteenth-Century England* (Cambridge, 1998), esp. 17–39. The literature on luxury and consumption in the eighteenth century is extensive, though scholarly discussion of the German case began relatively late; see the contributions in Reinhold Reith and Torsten Meyer, eds., *Luxus und Konsum: Eine Historische Annäherung* (Münster, 2003); Michael Prinz, ed., *Der lange Weg in den Überfluss: Anfänge und Entwicklung der Konsumgesellschaft seit der Vormoderne* (Paderborn, 2003).

31. C. D. Küster, *Der Wittwen- und Waisenversorger, oder Grundsätze, nach welchen dauerhafte Wittwen- und Waisensocietäten gestiftet werden können* (Leipzig, 1772), 3–4.

32. [August Georg] Uhle, pastor of St. Aegidius in Hanover, to Calenberg administration, HStAHann, Dep. 7B, 371:51–54. See also the memorandum of Land-Syndicus Meyer, secretary of the Calenberg administration, 10 November 1781, HStAHann, Dep. 7B, 368:3–4.

33. Tetens, *Einleitung,* 2:235–36.

34. Kritter, *Sammlung wichtiger Erfahrungen,* 11.

35. Carl Chassot de Florencourt, *Abhandlung aus der juristischen und politischen Rechenkunst* (Altenburg, 1781), 191.

36. J. H. Meyer to Georg Büsch, 21 March 1781, HStAHann, Dept. 7B, 370:n.p.; see also the minutes of a meeting of the Schatz-Collegium, 22 November 1781, HStAHann, Dep. 7B, 369:2–7.

37. Copies and originals of the protests and depositions appear in HStAHann, Dep. 7B, vols. 372, 374, 379.

38. *Replicae, nisi quid novi, submissivae cum petitis an Seiten der in actis genannten Wittwen, Klägerinnen wieder die in actis des Herrn Syndicus Stambke gegen löbl: Cal. Schatz-Collegium genannte, dem Vergleiche vom 14ten May 1783 nicht beygetretenen Mitglieder der Cal. WPGes, Beklagten, in puncto implementi,* 26 March 1789, HStAHann, Dep. 7B, 360:222–45.

39. Charlotte Justine Hartje and seventeen others to Königliche Regierung, 17 June 1783, HStAHann, Dep. 7B, 379:3–5. See also Magdalena Elisabeth Gaden geb. Tom and sixteen others to Landschaft, Land- und Schatzräte, Schatz-Deputierte, 10 June 1783, HStAHann, Dep. 7B, 379:25–34.

40. Maria Elisabeth Petersen geb. Eyllern et al. to Calenberg administration, Rostock and Güstrow, 22 February 1791, HStAHann, Dep. 7B, 362II:211–12.

41. *Replicae, nisi quid novi,* 234–35.

42. Maria Elisabeth Petersen geb. Eyllern et al. to Calenberg administra-

tion, Rostock and Güstrow, 22 February 1791, HStAHann, Dep. 7B, 362II:211–12.

43. See, for example, Tetens, *Einleitung,* 1:iv. On the relationship between mathematical probabilism and jurisprudence, see Lorraine J. Daston, "Mathematics and the Moral Sciences: The Rise and Fall of the Probability of Judgments, 1785–1840," in *Epistemological and Social Problems of the Sciences,* ed. Jahnke and Otte, 287–309. The contemporary point of reference for legal opinion in this context was Samuel Pufendorf, *Lex Naturae et Gentium* (1682), book 5, chaps. 5 (on aleatory contracts), 9 (on the purchase of prospects).

44. Report of Leipzig Law Faculty, November 1781, HStAHann, Dep. 7B, 342:43.

45. *Replicae, nisi quid novi,* 233.

46. This argument is developed in detail in Rosenhaft, "Did Women Invent Life Insurance?"

47. Justus Möser, "Schreiben einer betagten Jungfer an den Stifter der Witwenkasse zu **," in *Patriotische Phantasien (Justus Mösers Sämtliche Werke II)* (Berlin, 1842), 184–86.

48. The difference in social valence between money and the possessions it represents in exchange transactions is persuasively argued by Georg Simmel in his *Philosophie des Geldes* (Leipzig, 1902). See also Nigel Dodd, *The Sociology of Money* (Cambridge, 1994), chap. 3; Maurice Bloch and Jonathan Parry, eds., introduction to *Money and the Morality of Exchange* (Cambridge, 1989), 1–32.

49. Rosenhaft, "Did Women Invent Life Insurance?" 184. Where it was possible for men to buy pensions for women not their wives, the presumption was that the beneficiaries were relatives who had no other means of support, but proof of relationship was not generally required.

50. *Anordnung der in der Kays. freyen Reichs-Stadt Hamburg errichteten allgemeinen Versorgungs-Anstalt* (Hamburg, 1778). On the creation of the HAVA, see Eve Rosenhaft, "Secrecy and Publicity in the Emergence of Modern Business Culture: Pension Funds in Hamburg, 1760–1780," in *Institutional Culture in Early Modern Society,* ed. Anne Goldgar and Robert I. Frost (Leiden, 2004), 218–43. On the activities of the Patriotische Gesellschaft, see Mary Lindemann, *Patriots and Paupers: Hamburg, 1712–1830* (Oxford, 1990).

51. "Anmerkung über die neue Königlich Preußische allgemeine Wittwen-Verpflegungs-Anstalt," Staatsarchiv Oldenburg, best. 31, no. 2-46-41, pp. 418–23; "Consideranda wegen einer zu errichtenden allgemeinen Wittwen-Casse," FAHM, F0001–19, vol. 3, ea., no. 1.

52. "Unterthänigstes Pro Memoria," September 1781, Staatsarchiv Oldenburg, best. 31, no. 2-46-41, p. 81; "Verordnung wegen Erweiterung der Witwen- und Waisencasse auf Leibrenten," *Schlözers Stats-Anzeigen* 2 (1782): 38–42.

53. *Schlözers Stats-Anzeigen* 2 (1782): 40. A major figure of the North German Enlightenment, Schlözer is better known to students of gender history for having educated his daughter to be the first woman in Germany to be awarded

a doctorate; see Bärbel Kern and Horst Kern, *Madame Doctorin Schlözer: Ein Frauenleben in den Widersprüchen der Aufklärung* (Munich, 1988); Ceranski, this volume.

54. On this *Statistikerstreit,* see Karin Johannisson, "Society in Numbers: The Debate over Quantification in 18th-Century Political Economy," in *The Quantifying Spirit in the 18th Century,* ed. Tore Frängsmyr, J. L. Heilbron, and Robin E. Rider (Berkeley, 1990), 343–61; Sybilla Nikolow, "'Edle Statistiker' gegen 'gemeine Tabellenmacher': Der Streit um die statistische Methode um 1800 in Deutschland," unpublished manuscript, 1994; Andreas Hoeschen, "Die aufklärerische Universitätsstatistik und ihre romantischen Gegner," *Internationales Archiv für Sozialgeschichte der deutschen Literatur* 20.2 (1995): 56–74. *Willkür,* a term with very powerful political connotations for the Enlightenment generation, was also commonly used in the widows' fund debate to disparage "unscientific" method: see, for example, an anonymous review of the 1776 edition of Süßmilch, *Allgemeine deutsche Bibliothek* 34.2 (1778): 473–76. Oeder had lost an earlier position in the service of the Danish crown partly because of his espousal of a scheme for liberating the peasantry.

55. Lucian Hölscher, *Die Entdeckung der Zukunft* (Frankfurt, 1999) dates the discovery of the future as a characteristically modern notion from the 1770s. His study is based largely on philosophical and literary texts rather than everyday practices.