

Chapter 2

Mathematics and Mysticism

2.1 Teachers and Study

Let us go back to the starting point of Brouwer's university life and the years of study. When the young boy enrolled in the University of Amsterdam, that university treasured a few great men in the sciences, the most outstanding amongst them being the physicist Johannes Diederik van der Waals and the biologist Hugo de Vries.¹ In mathematics there were no stars of the same order, but on the whole the students were in competent hands. Lectures in mathematics were given by Diederik Johannes Korteweg, A.J. van Pesch and in physics by Van der Waals and Sissingh. Korteweg, in a manner of speaking, had saved nineteenth century Dutch mathematics from an inglorious historical record. When the zoologist Hubrecht was presenting a survey of fifty years of exact sciences in the Netherlands at the occasion of the Inauguration of Queen Wilhelmina in 1898, only two lines of his 11 page essay were devoted to mathematics, and it was Korteweg's work that was referred to.²

Brouwer was doubtlessly influenced most by his mathematics professor, Korteweg (31 March 1848–10 May 1941), a man with a remarkable career, which was in a way characteristic of the first generation of scientists of the new era. The second mathematician in the faculty, Van Pesch, cut a rather poor figure compared to the impressive Korteweg. His lectures did not always measure up to the standards of his students. Wijdenes, one of Brouwer's contemporaries, told that when Van Pesch got into one of his muddles, Brouwer would get up, go to the blackboard, take over the chalk, and in his precise manner steer the lecture past the cliffs where Van Pesch had been stranded.³ He did, however, not have the audacity to take liberties with Korteweg.

The mathematics training at the Dutch universities in the nineteenth century was in the hands of well-meaning professors, who followed at a safe distance the developments in the prominent centres. Apart from the well-known Stieltjes (who did

¹The Nobel prize winner Van het Hoff had already left Amsterdam for Berlin.

²Ritter (1898), p. 70 ff.

³Communication of L. van den Brom.

Fig. 2.1 Diederik Johannes Korteweg. [Brouwer archive]



not teach in Holland) there were no men of stature who could inspire the new generation of students. The rise of physics, and the sciences in general, in Holland, however, called for strong mathematics departments. But mathematics was still trying to catch up with the international developments. In the absence of outstanding pure mathematicians, who could have influenced the academic opinion, there was a general tendency to consider mathematics rather in her role of a handmaiden of the sciences, than that of the Queen of Science.

In this climate Korteweg started his studies at the Polytechnic School of Delft. As he was not particularly technically minded, he chose to break off his studies at the engineering school; not, however, without obtaining a certificate for teaching mathematics.

The situation in teacher training in Holland, before the wholesale reorganisations after World War II, requires some explanation. In Holland there were two roads to a teaching position at one of the nation's high schools (HBS) or gymnasiums: one could either obtain the normal degree of doctorandus⁴ at one of the universities, or one could study individually a particular subject, ranging from the languages to the sciences, and get a special teaching diploma. The examinations for these subjects were conducted by a state committee, the diploma was called the *middelbare acte* (*MO-acte*) (secondary certificate), and the subject and level was indicated by a code in letters and numbers. The first secondary certificate for mathematics was the *MO-KI* acte and the second and higher one the *MO-KV* acte.

With this *KV* diploma in his pocket, Korteweg found a teaching position, and from 1869 until 1881 he taught at high schools in Tilburg and Breda, towns in the southern part of the Netherlands. In the meantime he prepared himself for the academic entrance examination, in order to study mathematics at a university. In quick succession he passed the entrance examination in 1876, the candidate's examination in 1877 at Utrecht and the doctoral examination in 1878 at Amsterdam, and without loss of time he defended in that same year his dissertation, *On the speed of propagation of waves in elastic tubes*; the doctorate was awarded 'cum laude'. At the age of thirty he was the first doctor of the young university of Amsterdam. His Ph.D. adviser was the physicist J.D. van der Waals. Three years later, in the same year

⁴Literally 'a person who should become a doctor'; a prerequisite for being admitted as a candidate for a doctorate.

that Brouwer his student-to-be was born, Korteweg was appointed a full professor in Amsterdam, holding the chair of mathematics, mechanics and astronomy from 1881 until 1913. From 1913 to 1918 he was an extraordinary professor.

Korteweg's mathematical production was impressive and wide-ranging, he published on such topics as theoretical mechanics, thermodynamics, the theory of voting, algebra, geometry, theory of oscillations, electricity, acoustics, kinetic theory of gases, hydrodynamics, astronomy, probability theory, actuarial science, philosophy, ... He was to a large degree the man who dealt with the mathematics behind the physical theories of his Ph.D. adviser, Van der Waals. Nowadays he is mainly known for the famous *Korteweg–de Vries equation* (1895), which he published together with his Ph.D. student, the mathematics teacher Gustav de Vries.⁵ The equation describes the propagation of a solitary wave in a rectangular canal. The success of this equation should, however, not obscure his research on the folding of surfaces and on the Van der Waals surface.

As the chief editor of the collected works of Christiaan Huygens, (1911–1927) he combined his mathematical and historical interests; he solved the riddle of Huygens' sympathetic movement, concerning coupled oscillators.⁶ Korteweg was a noble and generous man, who played a central role in the national institutions of learning—the Academy, the Mathematics Society, the Senate of the University of Amsterdam, and, of course, the faculty of Mathematics and Physics. We will meet his name again, when we reach Brouwer's dissertation.

The second person to exert a profound influence on Brouwer's career was Gerrit Mannoury (17 May 1867–30 January 1956), a man who had also come to mathematics via the detour of a teacher's career. Mannoury was the son of a captain of the merchant navy. He finished high school in Amsterdam in 1885 and obtained his teacher's diploma three months after the final high school examination. For comparison: the regular study for a teacher's diploma took 4 years! In 1886 he got an appointment at an elementary school in Amsterdam, and in 1888 he moved to a private educational institution at Noordwijk.⁷ Three years later he obtained a position at a high school called the Public Business School (*Openbare Handelsschool*) at Amsterdam, this position was combined from 1893 until 1902 with an appointment as a private tutor of the son of Mrs. Henri Tindal (the widow of a newspaper tycoon). Between 1902 and 1905 the school society at Bloemendaal (*Bloemendaalse Schoolvereniging*) hired him; in 1905 he obtained a position as a teacher in Helmond. Finally, in 1910, he got a position at the high school in Vlissingen, where he taught bookkeeping, mathematics and economics. He also became the headmaster of the new evening school for business. On top of all that he worked from 1894 onward as an accountant.

While fully occupied as a teacher, he passed the numerous examinations that marred the life of many a school master (the so-called *acten*, discussed earlier). In

⁵The equation also occurred in the dissertation of De Vries. A recent book of Willink cites evidence that the role of De Vries was modest, to say the least; cf. Willink (1998).

⁶*sympatisch uurwerk*, Korteweg (1905).

⁷*Instituut Schreuders*.

Fig. 2.2 Gerrit Mannoury.
[Courtesy, J. Mannoury]



particular he obtained the diplomas for teaching mathematics in secondary schools, the *KI* and *KV* diplomas.

Even before passing these examinations he published original papers in mathematics. His paper *Lois cyclomatiques* (1898) introduced the new discipline of *topology* in Holland; it was followed by two more papers in the same area.⁸

The paper treats a generalised form of the Euler–Poincaré formula. Mannoury proved in this paper a theorem which Van Dantzig has called ‘Mannoury’s duality theorem’. In Hopf’s words, ‘The theorem expressed by the [indicated] formulas, which you correctly call ‘Mannoury’s duality theorem’, belongs completely to the area of modern duality theorems, and the fact that Mannoury knew it in 1897 shows how far he was ahead of his time. It is a pity indeed, that he did not continue this work. He was very close to the duality theorems of Alexander’.⁹

At roughly the same time he familiarised himself with the new symbolic methods of Giuseppe Peano.¹⁰ The latter had introduced a symbolic language for mathematics. From 1888 onwards, Peano had studied and advertised a formalism that is fairly close to our present-day logical notation. Although Frege preceded him by almost a decade, Peano’s notation was a great improvement in terms of readability. Peano’s best-known publication of the symbolic language was his *Formulaire de mathématiques* (1898), and he went so far as to publish his result on the solution of differential equations in the symbolic notation. Brouwer later somewhat scathingly remarked that Peano’s paper was not read until someone translated it back into common language! Mannoury quickly saw the theoretical value of Peano’s language, but he was sensible enough not to write his own papers in Peano’s formalism. Thus, curiously enough, this schoolmaster without a formal mathematical training not only introduced topology in the Netherlands, but also symbolic logic.

He enrolled at the University of Amsterdam to study mathematics; unfortunately, in view of his daily teaching duties, he could not attend the lectures, so the study was far from simple.

⁸Mannoury (1898a, 1898b, 1900).

⁹van Dantzig (1957), p. 7.

¹⁰Peano (1895).

Korteweg, who recognised Mannoury's ability, gave him for some time private tutorials at home, on Sundays, and allowed him the use of his private library. Nonetheless, the limits of the combination of working and studying were reached before long; Mannoury gave up and never got a formal degree in mathematics. In view of his exceptional performance as a free-lance mathematician, Korteweg tried to further Mannoury's career. As a result he was appointed in 1903 *privaat docent* in the logical foundations of mathematics at the University of Amsterdam.¹¹

The formal appointment to any of the positions of *privaatdocent*, *lector* (lecturer) or professor, required the appointee to give a public inaugural lecture. This was a formal occasion, attended by members of the senate in gown and cap. Mannoury presented his inaugural lecture with the title *The Significance of Mathematical Logic for Philosophy*, on 21 January 1903.

Brouwer has sketched the decisive role of Mannoury in his life, in the formal address, delivered at the occasion of the awarding of an honorary doctorate in 1946 to Mannoury:¹²

As happens so often, I began my academic studies as it were with a leap in the dark. After two or three years, however full of admiration for my teachers, I still could see the figure of the mathematician only as a servant of natural science or as a collector of truths:—truths fascinating by their immovability, but horrifying by their lifelessness, like stones from barren mountains of disconsolate infinity. And as far as I could see there was room in the mathematical field for talent and devotion, but not for vocation and inspiration. Filled with impatient desire for insight into the essence of the branch of work of my choice, and wanting to decide whether to stay or go, I began to attend the meetings of the Amsterdam Mathematical Society. There I saw a man apparently not much older than myself, who after lectures of the most diverse character debated with unselfconscious mastery and well-nigh playful repartee, sometimes elucidating the subject concerned in such a special way of his own, that straight away I was captivated. I had the sensation that, for his mathematical thinking, this man had access to sources still concealed to me, or had a deeper consciousness of the significance of mathematical thought than the majority of mathematicians. At first I only met him casually, but I at least knew his tuneful name, which guided me to some papers he had recently published in the *Nieuw Archief voor Wiskunde*, entitled *Lois cyclomatiques*, *Sphères de seconde espèce* and *Surface-images*. They had the same easy and sparkling style which was characteristic of his speech, and, when I had succeeded, not without difficulty, in understanding them, an unknown mood of joyful satisfaction possessed me, gradually passing into the realisation that mathematics had acquired a new character for me. For the undertone of Mannoury's argument had not whispered: 'Behold, some new acquisitions for our museum of

¹¹The position of *privaat docent*, similar to *Privatdozent* in Germany, brought the bearer of the title a nominal fee. Its main attraction was that it enabled one to keep a foothold in academic life, in the hope of a promotion.

¹²Brouwer (1946).

immovable truths', but something like this: 'Look what I have built for you out of the structural elements of our thinking.—These are the harmonies I desired to realise. Surely they merit that desire?—This is the scheme of construction which guided me.—Behold the harmonies, neither desired nor surmised, which after the completion surprised and delighted me.—Behold the visions which the completed edifice suggests to us, whose realisation may perhaps be attained by you or me one day.'

2.2 First Research, Four-Dimensional Geometry

Brouwer's relation to mathematics remained ambiguous for a number of years, only when the success of his work in topology blocked his retreat, did he definitely resign himself to a mathematician's life. As the laudation at Mannoury's honorary doctorate tells us, mathematics initially did not at all fulfil his expectations, mathematics as a clinical, sterile subject consisting of theorems and exercises did not in the least appeal to him.

At any rate, he decided to make the best of it; he had joined NEWTON, the club where students and their professors freely mixed. In 1899 he also became a member of the venerable *Wiskundig Genootschap*, the national mathematical society, founded in 1778, in the era of Progress and Enlightenment. Like all the venerable institutions of the Enlightenment the society had a motto: *Een onvermoeide arbeid komt alles te boven* (*Labor omnia vincit*, An untiring labour overcomes everything). The Mathematical Society, usually referred to as WG, traditionally met on the last Saturday of the month somewhere in Amsterdam. It was at these meetings that Brouwer fell under the spell of Mannoury, and it was there that he got to know the leading personalities in Dutch mathematics, if not personally then at least by sight. In spite of his earnest quest for the true living mathematics, he could not easily shake off his doubts. Nonetheless, he could not renounce his talent for mathematics. Even before his final examinations he had done original research in geometry. Wiessing reports that Brouwer gave a talk at a meeting of the science club NEWTON of the Student Corps:¹³ 'only eighteen years old, he presented to the company at a meeting attended by Professor Korteweg, some theorems of four-dimensional geometry, found by him. Korteweg was completely confounded: "I don't know what to think of it", the professor said reflecting, "it is a great and ingenious discovery, or it is a mystification!"'

The content of Brouwer's talk unfortunately is unknown, but it is fairly certain that it contained the germs of three papers that were submitted to the Dutch Royal Academy by Korteweg:¹⁴

- *On a decomposition of a continuous motion about a fixed point O of S_4 into two continuous motions about O of S_3 's,*

¹³Wiessing (1960), p. 142.

¹⁴Communicated respectively at the meetings of 27 February 1904, 23 April 1904, 23 April 1904.



Fig. 2.3 Brouwer (standing, left) at a dinner of a fraternity, probably NEWTON. The bald man on the right is Korteweg. [Brouwer archive]

- On symmetric transformations of S_4 in connection with S_r and S_l ,
- Algebraic deduction of the decomposability of the continuous motion about a fixed point of S_4 into those of two S_3 's.

The above papers, and a considerable number of his later papers, were published in the Proceedings of the Royal Dutch Academy of Sciences. Most of these papers were in fact published twice, one version in Dutch and one in English or German. There were actually two series of publications, the *Verslagen van de Koninklijke Nederlandse Akademie van Wetenschappen* and the *Proceedings of the Koninklijke Nederlandse Akademie van Wetenschappen*. Names have changed since then; when Brouwer started submitting his papers, the Academy was called the *Koninklijke Akademie van Wetenschappen te Amsterdam* (Royal Academy of Sciences at Amsterdam), during World War II the name was changed to *Nederlandse Akademie van Wetenschappen* and after the war a synthesis was arrived at: the *Koninklijke Nederlandse Akademie van Wetenschappen*. The institution itself was founded by the first King of Holland, Louis Napoleon, the brother of the Emperor Napoleon. At that time there were already a number of 'learned societies', such as the Dutch Society

for the Sciences (*Hollandse Maatschappij van Wetenschappen*), the Utrecht Provincial Society (*Provinciaal Utrechts Genootschap*). These local academies were the fruits of the Enlightenment; they provided a platform for the scientific and commercial upper class of the Dutch Republic. When Louis Napoleon proposed to transform one of the existing societies into the national academy, he was met with protest and refusal, so he founded his own academy—which was considered an upstart by the older establishments. Eventually the Royal Academy superseded the local learned societies, the latter having remained to this day modest centres of the sciences and arts.

Before Brouwer was elected a member of the Academy, most of his papers were submitted by Korteweg, who, as a member, was entitled to present papers for publication in the Proceedings and the *Verslagen*.

The first of Brouwer's papers, mentioned above, was a treatise on rotations in four-dimensional Euclidean space. He showed by geometric means that a rotation in four-dimensional space can be obtained as the product of two rotations in three-dimensional space.

Freudenthal, in his discussion of the paper,¹⁵ pointed out that the simplest way to treat the above transformations, is by means of quaternions. Brouwer first gave a geometrical proof and subsequently an algebraic one. Possibly Brouwer was not well versed in the geometrical applications of quaternions; whatever the reason may have been, he had opted for a laborious direct proof by geometric means.¹⁶

These very first mathematical publications made Brouwer, unwittingly, an actor in a priority controversy. It was his first experience of that kind, but, alas, not the last one. The topic of Brouwer's paper—a study of the orthogonal transformation group of a four-dimensional Euclidean space, had been the subject of investigations of a German mathematician, E. Jahnke,¹⁷ a man of some weight, with a sizeable publication record.

Jahnke had spotted Brouwer's paper in the Proceedings almost immediately after its appearance; he wrote a rather condescending letter to Korteweg (15 March 1904) and magnanimously (and correctly!) assumed that Brouwer was unaware of Jahnke's publications on the subject, which, he said, already contained the results of Brouwer's paper. He acknowledged that Brouwer had obtained his results by new means, but he expressed his expectation that 'the author would use the opportunity to acknowledge in a short note in the same journal and if possible in the next issue my priority for the mentioned results'.

A letter from a man who had earned a reputation in applied mathematics, who was an editor of the *Archiv der Mathematik und Physik*, might have daunted a lesser spirit than Brouwer, but this young man was not to be silenced so easily. When

¹⁵CW II, p. 22.

¹⁶Brouwer's theorem in modern formulation reads $SO_4 \cong SU_2 \times SU_2 / \pm(1, 1)$. Another geometric proof is in Klein (1890), and a similar theorem can be found in Cartan (1914).

¹⁷At that moment *Oberlehrer* at the *Friedrich-Werderschen Oberreal Schule* and a *Privat Dozent* at the *Technische Hochschule Berlin*.

Korteweg duly informed Brouwer of the claims of Jahnke, Brouwer carefully studied Jahnke's papers and concluded that he had in no way invaded Jahnke's priority rights. He wrote a cool, polite, but unmistakably provocative letter:¹⁸

From your letter, kindly transmitted to me by Professor Korteweg, and the enclosed papers, I see that my treatise interests you, and that earlier investigations of yours are connected with it.

Brouwer went on to explain in some detail to Jahnke the contents of Jahnke's and his own papers:

The reading of your papers suggested the following remarks, which will certainly be plausible to you.¹⁹

And after spelling out the geometrical meaning of Jahnke's method (or rather, the lack of it) and of his own method,²⁰ he closed with:

Thus I hope to have shown that our papers under discussion have nothing in common, but that your final result is a by-product of my principle.

Considering the provocation, Jahnke's reaction was rather mild; he demanded from Korteweg the publication in the Proceedings of a rejoinder from his hand. The latter had more faith in his own pupil's insight than in that of his German colleague; he promised Jahnke a note in the Proceedings, while at the same time asking Brouwer to write an exposition of the matter for the Proceedings. Jahnke's note²¹ shows that he had still not grasped the geometrical meaning of the decomposition that Brouwer had obtained, but the affair ended quietly with Brouwer's algebraic derivation of the results.

Among Brouwer's papers there are some notes that comment on Jahnke's papers in a rather cutting way, he compared him to a man 'who has stumbled around without detecting anything but small traces, and who now sees that the thing itself has been found and that his traces have lost their value. Hence his hasty and anxious letter.' He went on:

– *A* discovers that somewhere everything behaves just as in a magnetic field, and he even discovers that this field is remarkably simple. *B* finds the magnet and a very simple one at that; and says 'the matter is so and so'. Now *A* would not raise a priority claim against *B*, would he? At best one can say that Jahnke's researches suggested that there were two R_3 's. I have indicated those R_3 's (and not bothered with their properties, which Jahnke presents in full).

¹⁸Brouwer to Jahnke, 20 March 1904.

¹⁹The contents of the letter are incorporated in Brouwer (1904).

²⁰See Freudenthal's commentary, CW II, p. 22 ff.

²¹Jahnke (1904).

– I would say: if a man finally deduces by means of boring observations, which rest on, and are combinations of, equally boring observations of a predecessor (Caspar)²² *remarkably* simple results from all those complicated things, and finally somebody comes along and says that no complicated things are going on, but that something very simple is the matter, then he is ashamed and he withdraws himself. At least he does not raise a priority claim.

– When Newton found the law of attraction, and deduced the laws of Kepler from it, Kepler would not have wanted to diddle the credit from him.

In spite of all his self-assurance, the fledgling scientist showed the hesitance that every beginner has experienced: Brouwer asked Korteweg how to send out his preprints;²³ he did not know how to find the addresses of mathematicians he only knew by name. ‘And furthermore, can I send a copy to people like Klein and Veronese? Or would that be presumptuous without an introduction?’

Brouwer was enrolled for almost 7 years, not exceptionally long in those days, but nonetheless too long for such a promising student. So, what kept Brouwer so long at the university? The blame cannot be put on the fraternities, for after his first year Brouwer scarcely frequented them. The cause was rather the military service; according to his own statement²⁴ his studies were interrupted for a good two years. We have already seen how Brouwer was drafted (cf. p. 20), and his dislike of the experience. Indeed, his physical and mental health was seriously put at risk. The military service put so much stress on him that at times he felt utterly desperate.

The actual time spent in the army did not exceed eight months, but each bout of military training apparently upset Brouwer so much that the recovery required time. The sensitive young man must have experienced military service as a kind of hell; it was not that he could not, or would not, cope with the physical hardships, as we have seen he had always enjoyed a good dose of rough soccer, and long marches did not tire him. It was rather the company that fed his distaste for the army. Even years later, during the First World War he recalled his national service with a shudder:

My past service-time with the infantry is the darkest page of my life; from my equals I got little more than hatred, from my superiors little more than teasing and opposition; I repeatedly failed the examination for subaltern, and the consequence has been that after my military service for one and a half year I had a nervous disorder, and was not able to work; I recovered from it only very slowly.²⁵

This letter, combined with the information of the Brouwer–Scheltema correspondence, confirms the picture of Brouwer as a man extremely susceptible to stress. The antique military establishment, not exactly known for its rationality or open-mindedness, clearly was not the environment to cherish an unorthodox—and proba-

²²Caspar (1883).

²³Brouwer to Korteweg, 14 May 1904.

²⁴Brouwer to Scheltema, 15 November 1903.

²⁵Draft of a letter to Lorentz 16 February 1918.

bly contrary, character like Brouwer. The result was a prolonged physical and mental breakdown. Only in November 1903 did Brouwer get into the rhythm again. He wrote to his friend Scheltema:

Of course you have excused me for remaining silent for so long. I have been busy; returning to my subject after two years of absence required some dedication, in particular where any love for that subject was missing. By now I have gradually succeeded, and I row with long strokes towards my doctoral examination. My work is done without illusions, but with a feeling of cheerfulness on account of the activity itself.

Once he had resumed his study, the subject matter offered no problems. One guesses that his publications on four-dimensional geometry could not have failed to impress his examiners. The doctorandus-diploma was awarded on 16 June 1904, (cf. p. 33), and—as a mark of excellence, with the predicate ‘cum laude’! The diploma was signed by A.J. van Pesch and D.J. Korteweg.

It did not take Brouwer long to make up his mind on the matter to his future activity. He soon informed Scheltema of his plans to start to work on a dissertation.²⁶ He planned to absent himself for some time, perhaps for a longer period, in order to

recover the clear relations, in which I have to position myself *vis à vis* the various persons and institutions within my narrow social horizon, in order not to be distracted from the cultivation of my power and the development of my clairvoyance in the service of God.

Although the scales were by now definitely tipped in favour of mathematics, philosophy was still prominent in his mind:

Next winter I will be either in Blaricum—where a cottage²⁷ is being built for me—working at a philosophical creed, that will be the prologue of my work—or in London, in the great British Library for my dissertation: ‘The value of Mathematics’ with the motto *Ουδεις ἀγεομετρικος εισιτω*.²⁸

I thank you for your well-meaning admonition to me at the gate of the paradise of freedom. Did I wish a kingdom on earth, then it would perhaps be good to wall in myself in mathematics, and to have me crowned like a pope in the Vatican, a prisoner on his throne. But I desire a kingship in better regions, where not the goal, but the motive of the heart is the primary thing.

2.3 Marriage

This exalted message was followed, only six days later, by a letter that contained a short but weighty message:

²⁶Brouwer to Scheltema, 4 July 1904.

²⁷See p. 59. This cottage was referred to as ‘the hut’.

²⁸Let nobody enter without the knowledge of geometry (Plato).

Carel, my friend, in my life a thaw has set in. I have exchanged marriage vows with Mrs. R.B.F.E. de Holl. Greetings and hail to you, comrade

Your Bertus

Whereas from our modern point of view there is no reason why a student who has only just finished his final examinations should not get married if he or she wishes to do so, in the old days marriage was not an affair to be rushed into. Prudence and tradition required a couple to save a substantial sum, and for the bride to collect a complete trousseau, before one could even contemplate matrimony. Middle class morality, in particular, was quite strict and specific in matters of engagement, marriage, children, etc. Handbooks of etiquette spelt out all the rules to a nicety; the number of sheets, teaspoons, . . . was precisely indicated.

The fact that less than a year ago Brouwer still viewed himself as the eldest son, destined to remain without offspring, either shows that nature is stronger than theory, or that in Brouwer's view marriage did not necessarily entail procreation. It may be remarked here that the marriage remained childless, so the prophecy was fulfilled in spite of the marriage.

There are only hints in the correspondence of Brouwer and Scheltema concerning the other sex. In view of the long-standing tradition of fraternities to introduce students to all aspects of life, including those of the flesh, it is not unlikely that either Scheltema himself, or one of the other members of his fraternity companions, took Bertus' practical education in hand. A visit to one of the traditional establishments may not have been an obligatory part of fraternity life, but it was not actually frowned upon.

References to females are scant in the Brouwer–Scheltema correspondence. At the time of his depression in 1902, Brouwer wrote to his friend, after discussing Carel's recent volume of poetry, *Of sun and summer*, that 'there is a richer soul in your poetry, than in that of our modern poets'. These words were followed by an urgent and heartfelt counsel:

. . . Now, yet, a woman for you, Carel, you will not reach your destination before that; she will open up so much with her magic wand, I felt that again only just now thinking back to last year. I, too, feel homesick for the arms of a woman and a kiss. I would, even a month ago, never have thought that this could haunt me so much. Yes, it is really easily said that a man should live with his reason; a burden of thousands of years sits in mind and body, which compellingly shows him what to strive for, how he has to be.²⁹

Scheltema calmly replied that women had no place in his life as an artist:

. . . you forget that I love my own art above all and that my life with it, and my fighting against it, is the life with, and the fight against, the powerful muse—the most cruel of all women. [. . .] And the muse does not tolerate any love but the love of friendship—and in that I am rich enough!

²⁹Brouwer to Scheltema, 11 June 1902.

Fig. 2.4 Lize, before her marriage to Brouwer, in the garden of the pharmacy.
[Brouwer archive]



In the same letter he turned the table on Bertus and called on him to find a woman:

—be it either to the act of pairing that gloriously relieves me like a bath—
or the love of her, of whom you had often spoken, and who will certainly
want you back. Maybe she will now be able to help you better than anybody
else!—But in this case don't act without Huet or your present doctor...³⁰

Scheltema apparently referred here to some earlier relation of Brouwer, which might be hinted at in the letter of 5 December 1901: 'In order to quell a growing tragedy, I have to get away from here.'

Brouwer's wife-to-be was Reinharda Bernardina Frederica Elizabeth de Holl (Lize) born on 5 August 1870, eleven years Brouwer's senior. She was the daughter of Eelbartha Johanna Jacoba de Holl-Sasse, widow of Jan de Holl. The latter was a medical doctor, who had his practice on the Overtoom in Amsterdam. He died young and left his widow with 7 children. He also left her the pharmacy which he had run together with the medical practice. Mrs. De Holl had decided to keep the pharmacy; according to the regulations she had to hire someone with the proper qualifications in order to guarantee the required expertise.

Lize had married Hendrik Frederik Peijpers, a former army doctor and, incidentally, a full cousin of hers, when she was still a young girl. Peijpers was sixteen years

³⁰Scheltema to Brouwer, 12 June 1902.

her senior; he had first been working in the pharmacy for his aunt, the widow De Holl, with whom he was lodged. The marriage was far from happy, Peijpers did not want any children, and did not hesitate to carry out an abortion if and when Lize became pregnant. When she was once more pregnant, Lize managed to circumvent her husband's intervention, and the child, Anna Louise Elisabeth, was born on 26 March 1893. Soon after that Lize got a divorce and in the meantime she and Louise had moved in with her mother. It should be kept in mind that in those days a divorced woman with a child was in an extremely uncomfortable position. Her social status was far from enviable.

There are no elaborate accounts of Brouwer's courtship,³¹ but the following story, as told by Louise, is undoubtedly authentic.

Bertus had renewed his friendship with a girl he knew from Medemblik, the earlier mentioned Dina Pels.³² Dina, who was somewhat older than Bertus had found herself a place in the pharmacy of the widow De Holl, where she combined a full-time job with a training as pharmacy assistant.

The two made long walks and exchanged their experiences (a salient detail, reported by Louise, is that Bertus insisted on carrying Dina's purse, to return it safely at the end of the walk). Dina told about the proprietor of the pharmacy, the widow De Holl, and the routine at the shop. She also mentioned that a young divorced daughter with her child lived with Mrs. De Holl. Bertus' interest in the daughter and the pharmacy was soon aroused, and he devised a plan of action in the best romantic tradition: he climbed onto a roof in the neighbourhood of the pharmacy at the Overtoom,³³ in order to watch the object of his curiosity. The inspection must have led to a favourable conclusion, for a meeting was arranged, and on 10 July 1902 the two met. What Lize thought of this curious student is not known. It is reported that she had her doubts about the wisdom of marrying a man eleven years younger than herself. Brouwer, anyway, did not hesitate long. He marshalled all his charm and power of persuasion to win the heart and hand of the young divorcee, whom he often and fondly praised for her Memlinck³⁴ face. The campaign was successful. In spite of the negative advice of some of her friends, Lize accepted Brouwer's proposal. The two formed a striking couple, Bertus, over 1.87 meter tall, towered over Lize, who measured no more than one-meter-fifty. Two years later the marriage took place, two months after Brouwer's doctoral examination, on 31 August 1904—the birthday of Queen Wilhelmina (*koninginnedag*).

And so Dina Pels played a brief but decisive role in Brouwer's life. She later married a medical doctor in Alkmaar by the name of Formijne. She died at the age of fifty. Brouwer kept up the relationship with the Pels family—among the congratulations on the fortieth anniversary of his doctorate in 1947 there was a letter from

³¹Most of the information on the courtship and the marriage is from oral communications of Louise Peijpers. Confirmation of the information on Dina Pels was provided by Mrs. J. Schout-de Waal.

³²See p. 6.

³³In other accounts of the same events the roof is replaced by a tree.

³⁴Fifteenth century Flemish painter.

a member of the family. In 1953, on his tour of the United States Brouwer visited one of the Pels relatives, who had emigrated to the States. It may be stressed that Brouwer had a very strong loyalty to his friends and relatives; there are numerous testimonials to this fact. He always enjoyed a quick visit to those whom he had admitted in his personal circle, irrespective of status or gender. On the other hand he had no patience with potential bores; his motto was ‘if you won’t have anything to do with someone, pick a fight right away—it saves a lot of time’.

The marriage was a simple affair. Bride and groom took a streetcar to the city hall of Amsterdam, where the civil wedding took place. Both brothers Lex and Aldert had, on this special occasion, accompanied Bertus to the house of the bride; the three of them played leap-frog on the way.

At the dinner, which followed after the official part of the wedding, the uncle of the bride, Reverent De Holl, held a diatribe on the topic of the marriage of two students—one of them, moreover, the mother of a child!—who did not have a penny, and who had nonetheless commissioned the building of a house for themselves, unscrupulously borrowing money!³⁵ The twelve year old Louise quietly snatched some dainty morsels from the table and stole away. In her memory the atmosphere at the dinner was stifling.

Scheltema, who in some way took part in the wedding, spoke bitterly of the occasion:

I have not understood anything of your wedding and in particular of the embarrassing ceremony, and the, for me insulting, invitation of Poutsma³⁶ and the whole collection of people, one and all, that I found disgusting! Really Bertus, that day was a great sacrifice for me! I have made it without demurring because you insisted, and seemed to have your reasons. . .

After the marriage the young couple moved into the rooms over the pharmacy at the Overtoom, waiting for the completion of their Blaricum cottage.

The daily routines of the couple were not much changed by the marriage. Brouwer had started to work on his dissertation, and Lize was fully occupied as a pharmacy student. Mrs. de Holl had, as we said before, no licence to run the pharmacy. Therefore she had to hire a licensed pharmacist to run the professional part of the shop, although the management remained in her hands. Since the salary of such a *provisor* (as he or she was called) presented a serious drain on the finances of the pharmacy and the family—not to mention the space problems when a provisor happened to live in—Mrs. de Holl had considered the possibility of preparing Lize for the supervision of the pharmacy, with the intention of eventually letting her take it over. As a result Lize had enrolled as a student in the University of Amsterdam, and diligently studied pharmacy. Roughly a year later the pharmacy did indeed change hands and became the property of the young couple, cf. p. 194.

³⁵Cf. the letter from Brouwer to Scheltema, 4 July 1904.

³⁶Presumably this was one of the uncles, a teacher at the Barlaeus Gymnasium.

2.4 Bolland's Philosophy Course

Brouwer, clearly, was of two minds about his future scientific career; as we have seen above, he had not yet made a definite choice between mathematics and philosophy. If the text of his profession of faith had not been preserved, this would have come as a complete surprise, for there was at that time no other visible sign of interest in, or familiarity with, philosophy. The letter of the fourth of July to Scheltema underlines that, notwithstanding his early success in mathematics, Brouwer was totally serious about the role of philosophy in his work. This interest in philosophy explains his involvement in the following short episode, which was of such significance, that it was the immediate cause of his mystical-philosophical monograph *Life, Art and Mysticism*, cf. p. 64.

Philosophy in Holland, around the turn of the century was largely dominated by G.J.P.J. Bolland, a man with an spectacular career. He was basically a self-taught philosopher, a fast learner and an even faster user of new knowledge, a powerful protagonist in every sense of the word. After a colourful but tragic youth, he became a teacher in the Dutch Indies. Absorbing in a high tempo the philosophy of predominantly German thinkers, he soon developed into a formidable character in Dutch philosophy. His life looked like one long series of conflicts, most of which were of his own making. He acquired a certain notoriety by his extreme anti-Catholicism. In spite of his curious reputation, he was appointed to the chair of philosophy in Leiden, where he preached the philosophy of Hegel. Bolland was one of those legendary professors who tyrannised his audiences, his students, and probably his colleagues as well. He could, at his lectures, request specific members of the audience ('that person with the unborn face') to leave the hall because 'otherwise I cannot do my work'.³⁷ Nevertheless, he was a popular and inspiring lecturer, who did not hesitate to give his opinion on any subject.

His reputation as a forceful and interesting speaker made him much in demand for courses and talks. In view of Bolland's success at other universities, the Amsterdam students decided to invite the great man for a series of lectures. Brouwer joined the committee, and he soon was the major force behind the invitation.

On 15 January 1904 Brouwer wrote his first letter to Bolland. Even Brouwer must have felt some awe, for the letter is unusually timid. Bolland's part of the correspondence has not been preserved, so we can only try to interpolate his reactions. Apparently he consented to give the lectures, but not without his conditions. From Brouwer's third letter³⁸ we gather that only those participants were welcome who had bought Bolland's book 'Pure Reason'.³⁹ The letter shows that Brouwer was seriously worried about the size and the quality of the prospective audience:

A great concentration of 'serious' listeners has not been secured. Many joined at first, who 'wanted to hear Bolland' for pleasure, but already the

³⁷In this respect Bolland was not an exception. Cf. Wiessing (1960), p. 241.

³⁸Brouwer to Bolland, 5 March 1904 (Boll. B 1904, 29. Leiden University Library).

³⁹*Zuivere Rede*, Bolland (1904).

condition of the purchase of the books—which was seen, in addition to the assumption of a considerable advance knowledge, a demand for activity, instead of pleasure—caused the number of prospective participants to dwindle to some twenty-five.

In spite of these discouraging messages, Bolland agreed to give his course. Brouwer went so far as to invite Scheltema to Bolland's lectures, although Bolland was a notorious anti-socialist. Brouwer told Scheltema that 'I so often heard the voice of Dietzgen in his words last night that I have to let you know'.⁴⁰ Scheltema resolutely declined the invitation: 'it must be most unpleasant to hear the Hegelian philosophy from this abominable man'.

The lectures were far from successful, as one can read in the student magazine *Propria Cures*. Whereas everywhere else Bolland was greeted by his audiences with hardly suppressed awe, the Amsterdam students shared no inclination to flatter Bolland's ego. When he made his entree he was met with smothered laughter and giggling. Bolland reacted predictably. He mercilessly attacked his audience—'you are nothing special, and I don't expect anything from you...'

Propria Cures reported the lectures in some detail; the issue of 15 October contained an introduction to the thoughts of the master in tones that echoed some of Brouwer's ideas (actually, he may have been the writer, but there is no certainty about that) including some mocking remarks about science, socialism and females, followed by a panegyric and a satire.

The lectures continued for some time, but the atmosphere in the lecture hall did not meet the speaker's expectations. For one thing, Bolland was used to be treated with reverence; he did not suffer from modesty, and he considered himself the most important philosopher in Holland, and so he expected his audience to treat him accordingly. His handling of disagreeable listeners (and it did not take much to be considered thus) was crude but effective. If the manners or behaviour of members of the audience were not to his liking, he could suddenly interrupt his lecture—'If those foetuses will not dispatch themselves, I cannot allow myself to continue', or words of a similar import.

He characterised his Amsterdam audience in various unflattering ways, and finally gave up the course, writing that he could only present his 'Collegium Philosophicum' to an audience of 'students' and not to one of 'spectators'. The *Propria Cures* copy of 16 December 1904 published Bolland's letter of cancellation, which (quite correctly) stated that the 'Collegium philosophicum' was offered to a circle of 'students', but not as a public performance for a fee, let alone for free. He definitely refused to lecture for an Amsterdam public that wanted to be amused and that did not even bother to procure the obligatory book, as they showed by their empty hands.

The issue of the 'Bolland Lectures' continued for some time to occupy the columns of *Propria Cures*; a number of comments and reader's letters were published that in turn defended or attacked the great man; there was even some excitement in Roman Catholic circles on the assumption that Bolland had abused the

⁴⁰Brouwer to Scheltema, 8 October 1904.

catholic hearers or vice versa. Brouwer also took part in the discussion: he published a number of notes under the pseudonym *Lau van der Zee*.⁴¹ In his contribution with the title 'Grounds of consolation' he concluded, after a flowery and convoluted commentary on Bolland, that 'Bolland's lectures have stopped at the point, where his path and the paths of his audience who were about to liberate themselves, parted. . . And thereafter he stayed away, just in time.'

Brouwer's relationship with Bolland is far from clear. The philosophical tradition in Holland eventually turned away from, and even against, Bolland. True, there was a hardy band of faithful followers, who devoted their undivided loyalty to the works and thoughts of Bolland, but gradually they were outnumbered and eventually forgotten.⁴² Slowly the name 'Bolland' became a synonym for 'weird and unscientific', hence the present generation can no longer imagine the spell that Bolland cast over Holland. But anybody who takes the time to peruse the books of Bolland will find quite sensible thoughts (next to obscure passages). There is, for instance, a small monograph, *Intuition and Intellect*,⁴³ which contains quite sensible ideas, next to unfounded speculations. In particular, it showed that the mathematical layman, Bolland, was not as uninformed about mathematics as later commentators suggested.

Comparing Bolland's and Brouwer's writings, one can see that they share certain ideas, but whereas Bolland's text may be compared to the confused sounds of an orchestra that is tuning, Brouwer's philosophy is the crystal clear music of a transparent symphony. At some point, Brouwer studied Bolland's writings, together with P.C.E. Meerum-Terwogt, a contemporary of Brouwer, who had become a Bolland follower. He also visited the master personally.⁴⁴ There is no doubt that Bolland acted as a catalyst for the young Brouwer, but once the latter had become a philosopher in his own right, with his own programme, Bolland was no longer of any influence.

Nowadays there is little appreciation for Bolland's philosophical views, but during his life he exercised a considerable influence on his followers and adversaries. Almost all Dutch philosophical publications in the beginning of the century in one way or another paid a tribute to the recognised master and tyrant of philosophy.

This short episode is of some importance, as it shows that Brouwer was actively involved in matters of philosophy. He did not just want to dabble in philosophy, but wished to pay serious attention to the developments in that field. Already in his short observations in the student magazines one can discern his own private views on the basic issues of (in particular) moral philosophy. In the *Propria Cures* issue of 19 November 1904 Brouwer published under the name Lau van der Zee, a short

⁴¹One of the lodgers of the Brouwer family went by the name of Lau van der Zee, cf. p. 8. In the Brouwer archive there is a manuscript in Brouwer's handwriting, signed by Lau van der Zee and subsequently published in *Propria Cures*. So the identity of this 'Lau van der Zee' is well authenticated.

⁴²The reader may find more about Bolland in a recent biography (Otterspeer 1995) (Dutch).

⁴³Bolland (1897).

⁴⁴Communicated by Mrs. N. Kapteyn-Meerum-Terwogt, the daughter of the above mentioned Meerum-Terwogt. No details of the conversation between Bolland and Brouwer are known.

note *On Morality (Excerpt)*. This note is almost a short preview of Brouwer's later lecture series *Life, Art and Mysticism*.

The main theme is the loss of the original innocence—'In passivity the world is a garden of marvel and joy and silence. There is no separation, no reality and one wants nothing.' The loss of this primordial equilibrium, in Brouwer's view, is caused by man's concentration on certain phenomena, the active directing of attention. 'The source of *All* is lost, one has been born.' Brouwer then goes on to indicate the modes of liberation, that is means to regain paradise. These modes are, strangely enough, distinct for man and woman. 'Moral' is to be found in the quest for the lost primordial state. It is remarkable to note that the female road to liberation is rather negative compared to the male one. This short note can, like the profession of faith, be seen as an overture to the mystical-moralistic book of 1905.

2.5 Among the Artists and Vegetarians

The year 1904 was an eventful one. Not only was it the year of the doctoral examination and the marriage, but also the year of Brouwer's settling in Blaricum, a small town (village) not too far from Amsterdam. The Brouwer-Scheltema correspondence contains a number of glowing references to Blaricum and its general surroundings. Brouwer evidently was infatuated with Blaricum, and in order to appreciate this phenomenon, we have to take a closer look at the town and the surrounding area.

Blaricum had been a desperately poor village populated by farmers and shepherds. Its soil was sandy and could not be expected to yield more than a scant crop.

At the end of the nineteenth century things started to change, the more affluent citizens of Amsterdam had discovered the charms of country life in an area where prices were still reasonable, and where the air was clear and healthy: the commuter had been born. At the same time *het Gooi*, a geographic unity, comprising Laren, Blaricum, Bussum, Huizen etc. attracted a number of artists. Somewhere in the eighteen-seventies the painter Jozef Israëls discovered the picturesque charms of Laren; in his wake more artists followed, Johannes Albert Neuhuys settled in Laren in 1883, and in 1886 he was joined by the painter Anton Mauve. The latter became famous for his paintings of the landscapes of Het Gooi, the flocks of sheep with their shepherd, the heath, and the small farmhouses and huts of the local population. He was so much identified with 't Gooi that one spoke of 'the land of Mauve'.

Gradually Laren and the neighbouring Blaricum became a well-known centre for painters; the list of resident painters of whom some had a more than local fame contains too many names to include them all. We must be content to mention a few: Jacob Kever, Frans Langeveld, Wally Moes, Jan Veth (who was an author as well), F. Hart Nibbrig, Arina Hugenholtz, Evert Pieters, F. Oldenvelt, Willem Dooijewaard, William Singer, Herman Heijenbrock. In the world of painting, Laren became known for its Laren School (*Larense School*). A special role in the history of Het Gooi was played by William Singer, the son of the American steel giant William

Singer from Pittsburgh. He had chosen to become an artist and to forego his rights as a successor to his father's steel industry. After some wandering through Europe, he alternately lived in Laren-Blaricum and in Norway. In Blaricum a magnificent house was built for him, which later became the town hall. After the Second World War, the widow of William Singer donated the funds for the founding of a memorial foundation and for the Singer Museum, which now attracts art lovers to Laren.

Art was vigorously promoted in Laren by the enterprising hotel keeper, Jan Hamdorff. No account of Laren would be complete without the mention of this enterprising individual, who governed the local art world as a benevolent autocrat, with a keen eye for the interest of his artists and of himself.

Much later Mondriaan and Van der Leek worked for some time in Laren. Laren and Blaricum not only attracted the adherents of the visual arts, but also considerable numbers of the Dutch literary society spent a part of their life in the idyllic villages and in the neighbouring towns. The poet Herman Gorter, the authors P.L. Tak, Frans Coenen, Victor van Vriesland, Carry van Bruggen, the couple Henriette and Richard Roland Holst lived in Het Gooi, and last but not least the famous, but somewhat controversial author, psychiatrist, philosopher, philanthropist Frederik van Eeden. We will meet the latter again in connection with the so-called 'significs'.

At roughly the same time there was an invasion of a totally different kind: the advance of the communes and of the health fanatics. A number of these communities, usually called *colonies*,⁴⁵ founded on idealistic, mostly socialistic and/or religious bases, have made history; they have influenced life in het Gooi to no small degree, although nowadays they are considered just a curiosity in the local history of the region.

The best-known colony, was *Walden*, founded by the above mentioned Frederik van Eeden (1860–1932). Van Eeden was well-known, and not only in the Netherlands; he had studied medicine and through his own efforts he had become the first psychiatrist in Holland. He was a sensitive man, the author of a number of books, dramas, and poems, with a keen social conscience, rejecting, however, Marxism as an acceptable basis.⁴⁶ His colony was named after Walden Pond in Concord, Massachusetts, where Thoreau carried out his famous experiment. Thoreau's book had fired Van Eeden's socio-romantic imagination. In 1898 he bought some land in Bussum from an ex-patient, and started to master the practical and theoretical problems of running a colony.

Following Henry Thoreau, he had a cottage built for himself, followed by a number of cottages for members of the colony. In 1899 Walden opened its doors. It attracted a mixed group of people, consisting of a number of disciples and patients of Van Eeden and some farmers. Walden suffered from the usual defects; idealism and love of mankind are no substitutes for organisation and leadership. Van Eeden, who was often absent, was not cut out to be the practical leader of a group of colonists. The enterprise was a financial disaster, in particular for Van Eeden. In 1904 the colony, as an official institution, ceased to exist.

⁴⁵*colonies*. Cf. Boersen (1987), Heyting (1994).

⁴⁶There is a two-volume biography of Van Eeden (in Dutch) by Fontijn, cf. Fontijn (1990, 1996).

The project had, however, caught the imagination of the Dutch people. Walden became something like a catch word; socialists and communists condemned the idea on principle, and ethical idealists treasured its memory—much as the true romantic adores ruins.

The second movement was centred around another charismatic personality—Professor Jacobus van Rees. Van Rees was the son of a social-liberal historian, Professor Otto van Rees, and the father of the painter Otto van Rees. Inspired by Tolstoi, he became a religious-anarchist, active in the fight against military service, the killing of animals, alcohol and tobacco. In 1899 he helped to found the colony of the International Brotherhood in Blaricum. The colony was an agriculture enterprise, which functioned for a brief period. A lack of expertise, discipline, and the barren soil eventually finished off the colony.

The original inhabitants of Blaricum and Laren were not altogether pleased with the presence of what they called ‘reds’ and ‘grass eaters’ (*plantenvreters*). The colonists dressed and behaved in objectionable ways, and they were, in the eyes of the hard-working indigenous population, lazy and ignorant. Nonetheless, there was a good deal of tolerance, after all, the communes brought the shopkeepers business. Violence only erupted during the big railway strike in 1903, when it was rumoured that the colony people would stop the steam train (*Gooische Stoomtram*), the connection of het Gooi with Amsterdam.

The adherence to the fundamental Christian-anarchist principles of the ‘International Brotherhood’ gradually eroded, and even more so after a number of Friesian socialist farmers had joined; they clearly wanted to combine socialism with successful farming—‘they needed livestock for dung and they had bought along guns to shoot the rabbits that ate the cauliflower’. Eventually the Brotherhood was dissolved in 1911.

Already before that time, Brouwer had bought a strip of land from Professor Van Rees, situated along the Torenlaan in Blaricum, and it was at this spot that Brouwer, while still a Ph.D. student, had a hut built. It was designed by his friend Rudolf Mauve, the son of the painter Anton (see p. 57). At the end of October 1904 the wooden cottage was ready to receive its occupants; it was a charming construction of a modest size, basically one room plus a kitchen, and a bedroom upstairs. It had a thatched roof and was situated in a wooded lot. The location exactly answered Brouwer’s dreams; a secluded spot in the middle of a romantic landscape. The privacy was later increased by an enclosure of rush-mats.

In the seclusion of his private domain Brouwer enjoyed the pleasures and rites of a healthy life. He practised a number of traditional health activities, such as vigorous exercises to improve the circulation of blood and oxygen, open-air baths, mostly in the nude, sleeping—weather permitting—in the open air, swathed in wet sheets.

The eating habits and the food were subjected to a strict regime. In this respect the couple were well-matched: Bertus and Lize both practised vegetarianism. Lize was, as all sources confirm, well-informed about vegetarian diets, traditional herbal cures, and the like. The marriage of Brouwer certainly could not have been more felicitous with respect to his lifestyle. Lize was known in the village for her knowledge of herbs and as a pharmacist she used to prepare bottles of herb cures; even in old age,

Fig. 2.5 The healthy life in Blaricum. Brouwer in his garden. [Brouwer archive]



she could be seen stirring a huge cauldron with a brew of all kinds of herbs. Under her guidance the pharmacy also dispensed homeopathic medicines.

The more irreverent could not resist the temptation to associate the earnest, tawny old lady, going about her business of preparing potions of herb drinks, with the dark images of the old fairy tales.

Bertus had acquired his knowledge of the vegetarian kitchen in a German health clinic of Doctor Just, in the town Jungborn in the Harz. He had been a long-time sufferer of complaints of the nose; his father saw this as the cause of his son's long drawn out studies, and he ordered the boy to have his nose treated, but after it was flushed, things became even worse. The doctor proceeded to prescribe him seven goose eggs, daily, and one and a half pounds of steak, in order to shore up his general condition. The result was that Bertus felt more sick than before. Finally he went to Just's health clinic, where he was introduced to the secrets of diets, vegetarianism, open air baths, exercises, etc.⁴⁷ He adhered to the vegetarian diet the rest of his life, albeit for pragmatic reasons. He was not dogmatic enough to resist the temptation of an occasional bite of meat or chicken.

Among Brouwer's papers there are some notes that illustrate the eating habits of the Brouwers. An undated list, probably from the early years in Blaricum, gives detailed instruction for the daily diet; there is an enumeration of wild herbs for each month, for example, 'April: scurry grass; lady's smock; wild sorrel; stinging-nettle; dandelion; plantain; lamb's lettuce; onions and the like; carrots, lemons, . . . September: acorns; beech-nuts, cabbage-lettuce, cucumbers; endive; onions c.s.; French

⁴⁷Oral communication Louise Peijpers.



Fig. 2.6 Bertus and Lize in their Blaricum garden. [Brouwer archive]

beans; lemons. . . .’ The procurement of food products was a matter of serious consideration. The choice of rice, for instance, was not left to chance: ‘brown rice (Van Sillevolt, rice-huskers, Rotterdam)’. The note gives general rules, based on a list of very detailed instructions for the choice of fruits and nuts, arranged per day for the various seasons. In combination with Brouwer’s adherence to vegetarianism, the items give some insight into his daily routine. The self-chosen Spartan lifestyle is illustrated by the following rules:

- In case of momentary fainting one takes according to one’s need a juicy fruit, or milk, or milk and bread.
- No more departures [of the rules] allowed as a guest.
- No more cleansing baths.
- Never eat by artificial light.
- Always: Once per week swimming in the open.
- Once a week play football or practice another intense physical exercise (preferably with danger and fights).
- To bed only after fasting for 3 hours.
- In case of fever immediately the fruit diet.
- Sleep at least from dusk to midnight.
- Rise as early as possible.

The reader may perhaps wonder if Brouwer tackled the food matter in dead earnest. It should be borne in mind that his student years were one prolonged misery of medical problems. He had, clearly, decided to fight the physical weakness of his body by a systematic regime. And it may be said that the method proved successful. Although he had his breakdowns and illnesses from time to time, he boasted a wiry, lithe body without any trace of fat.

The whole atmosphere of Blaricum and Laren and the congenial housing in the hut must be viewed as the ever changing and yet permanent background of

Brouwer's life. No offers from famous universities were able to uproot him. Blaricum was his irreplaceable home. After his fame had spread, he did not even have to leave the village; the established and the newcomers came to knock on the door of his hut.

2.6 The Delft Lectures

During the years 1904 and 1905 Brouwer suddenly displayed an interest in the cultural side of student life in Delft. He published a number of short notes in the Delft student weekly, and ended by giving a series of lectures.

His first note was a short comment on Frederik van Eeden's book 'The Joyous World'.⁴⁸ In this note Brouwer opposes the view that an improvement of the economic circumstances will result in a morally and ethically better world, 'A bad father beats his child; to improve the father by anaesthetising the child, and thus taking away the pain, proves hopeless. Therefore it would be necessary to raise the ethical level, then, slowly, the Joyous World will grow. And for that reason the book of Van Eeden is the deathblow for any Marxist.'

The note on Van Eeden's 'Joyous World' was soon followed by an ecstatic exhortation to attend Bolland's lectures, which were to be held in Delft.⁴⁹

As we have seen, Brouwer was involved in the organisation of Bolland's lectures in Amsterdam. Although Bolland's performance was not exactly successful in the nation's capital, Brouwer saw no reason not to promote him in Delft, where an active student association had a tradition for organising cultural events.

Brouwer sent an exalted letter, under the pseudonym of Lau van der Zee, to the student weekly:

... Then a shining star will appear, the joyful sign of hope, then you will rise to higher regions, to God's glory, although this will not be attained in this life.

Bolland sees that star clearer than you will learn to see it; the veils disappear before his eyes. And thus he can lead you on the difficult shining way to God's throne.

The note was (correctly so, one might say) judged incomprehensible, so that in a next issue an article appeared in which the author calmly outlined arguments for the role of philosophy in Delft, adding that 'We cannot forego the occasion to show the author of this exhortation, Lau Van der Zee, our appreciation for his laudable efforts, although we consider his way of operating most dubious.'

It is certainly surprising that Brouwer showed such an interest in the promoting of philosophy in Delft. There are two partial explanations: in October 1904 he was still making propaganda for Bolland in Amsterdam, and he may have decided to give

⁴⁸ *Studenten-weekblad* 6 October 1904.

⁴⁹ *Studenten-weekblad* 17 November 1904.

his fellow organisers in Delft a helping hand, and furthermore he had connections in Delft. In fact, his brother Aldert had registered as a student in Delft in 1903.

There is a third possibility: Brouwer was preparing a philosophical exposition ('a philosophical creed that will be the prologue of my work', cf. p. 49) as a part of his dissertation. It is not unlikely that it did not take him long to realise that the material was not exactly suited for a faculty of mathematics and physics. As we will see (p. 92) even a modest philosophical motivation did not survive the axe of his adviser. So he may well have considered Delft as a suitable platform for his philosophical message. Any of these reasons or a combination, may have sufficed for his involvement. It is not known how Brouwer got himself invited to give a series of lectures in Delft. It seems plausible that his brother introduced him in the local student association *Free Study* (*Vrije Studie*), and that Brouwer sufficiently impressed the governing body to get himself booked for a series of lectures, the first of which was held on 29 March 1905.

The lectures were well attended and apparently quite successful. The organisers were somewhat sceptical about the text that was going to appear in print—'The oral lecture was necessary indeed for a proper understanding, I think that in print much will seem incomprehensible.'⁵⁰

Brouwer, although no doubt seriously trying to get his message across, could hardly suppress a quiet amusement at the behaviour of the audience (which, by the way, listened patiently for 3 hours(!) on end). He reported to his friend Scheltema that:

The lecture will be printed at the request of the Delft public. When I send you the booklet, you will read it, won't you, and you will not lay it aside unopened in fear or disgust? Why then didn't you mix with the public as a solitary, darkly watching enemy among all those others, who were either stupidly frightened or admiring, or did not understand, or got angry. If you had seen how a couple of girls, in the second break, cried that they could not bear it any longer and demanded to be taken home, your nostrils would have flared, you would have snorted of hatred.⁵¹

The promised book itself was written and produced at an incredible speed, the publisher already advertising it in the weekly of 8th of June:

BROUWER. Leven, Kunst en Mystiek.

with the chapters

- I The sad World
- II Introspection
- III The fall caused by the intellect
- IV The reconciliation
- V The language

⁵⁰*Studenten-weekblad*, 6 April 1905.

⁵¹Brouwer to Scheltema, 7 April 1905.

- VI Immanent Truth
- VII Transcendental Truth
- VIII The Liberated life
- IX Economics

The language of the treatise is partly borrowed from the majestic language of the bible, and partly it uses the expressive emotional language of the literature of the turn of the century, albeit with the personal Brouwerian flavour. If the reader feels that Brouwer's language is unusual and convoluted, he is certainly right. Brouwer had no mercy on his readers, even his Dutch is hard to read, and the extraordinary length of his sentences, with many subordinate clauses, was notorious.

There are a number of main themes, with which the book is concerned, all of which, however, can be retraced to the central theme.

The main point of *Life, Art and Mysticism* is the truly mystical doctrine that man's ultimate goal and challenge is total introspection—a turning into oneself (*zelfinkeer*). All the remaining points and chapters are elaborations of that particular task. Before Brouwer turned to this central issue, he first presented in a 'pedagogical' first chapter the disastrous influence of man on the world and nature in general. It is called 'THE SAD WORLD', as a wordplay on Van Eeden's 'The Joyous World'. The violations which Brouwer describes, will nowadays generally be recognised as such, but at the time of writing little understanding could be expected. On the contrary, the things that Brouwer condemned, would be greeted by most as miracles of progress. Practically speaking, in Brouwer's young days the crimes against man and nature had only just begun. The wholesale poisoning of complete areas and seas, the destruction of the natural balance in the system of our rivers, just to mention a few topics, has reached nowadays a dimension that one could not have imagined in 1904. Hence, one may well assume that messages, as contained in 'THE SAD WORLD'—if they would find readers at all!—would be brushed aside as totally unrealistic, and as scare mongering. One cannot do better than read Brouwer's text, of which parts are reproduced here. A translation, unfortunately, does not do justice to Brouwer's prose, which is extremely solemn.

The Netherlands came into existence and was preserved by the deposit of silt of the rivers; a balance between the dunes, the delta, the tides and the discharge of the water was established—a balance in which temporary floodings of parts of the delta were incorporated. And in that land a strong human race could live and endure. Meanwhile, people were not content, they built dikes along the rivers to regulate or prevent the flooding, changed the river courses at will in order to improve the drainage or the shipping routes, and in the meantime cut down the forests. Small wonder then, that thus the subtle balance of the Netherlands was undermined, that the Zuiderzee was eaten away, that the dunes were slowly but inexorably washed away. And that nowadays ever harder labour is required to protect the country from total destruction. And does it not seem curious to observe, how this self-inflicted labour is not only accepted in resignation, but that it is even lent a lofty cachet of a task imposed in the name of God or Inexorability?

The people originally lived separated, and each tried to preserve for himself his balance in the supporting environment of nature, amidst sinful seductions; that filled their lives, no interest in each other, no worry about the morrow. Hence, also, no work and no grief; no hatred, no fear; also no pleasure. Meanwhile, one was not content; one sought power over each other, and certainty about the future. Thus the equilibrium was destroyed, ever more sore labour for the suppressed, ever more infernal conspiracies for the rulers, and all are the suppressed and the rulers at the same time; and the old instinct of separation lingers on as pale envy and jealousy. [...]

It is part of the balance of eternal and omnipresent life, that everyone will be called from this life on earth, when his time has come; and until that time [he is] physically and spiritually ill, as befits his evil mood of thrift, thirst for power, vanity and fear; once more, one is not content with this, one tinkers with the body by means of medicines and prescribed ways of life, and with the souls by hypnosis and suggestion, thus disturbing the purgatory of the lusts, and destroying the balance between psychological responsibility and physical constitution; the body is degenerated from the morale to such an extent, that one can indeed no longer be held responsible for one's crimes, for one's actions in this world. Although medical science boasts in recent times of the prolonging of the (incidentally, far too short) span of human life, what is the value of it? It is as sad to leave this life after one's time, as before one's time—and death? 'Nature never destroys without returning something better for it'. [...]

The life of mankind as a whole, is an arrogant eating away of its nests all over the perfect earth, a meddling with her mothering vegetation, gnawing, spoiling, sterilising her rich creative powers, until it has gnawed away all life, and the human cancer withers away over the barren earth.

They call the folly in their heads, which accompanies that, and which turns them insane: 'Understanding the world.'

'THE SAD WORLD' sketches in dramatic tones the degeneracy of man, who has exchanged his natural stability for the sinful state of never ending subjugation of nature and his fellow creatures. The chapter serves as a contrast to the next one, which sketches the possibilities and virtues of introspection. By turning one's attention away from the world, to the inner world of the self:

...the passions become silent; you feel yourself pass away from the old exterior world, from time and space and all other manifold things. And the eyes of a joyous silence, which are no longer tied, open up.

This chapter contains descriptions of the mystic experience, that seem to put it beyond doubt that Brouwer was no stranger to the experience. It paints in the words of a visionary the victory of the introspecting Self over the sad World. This chapter and later ones contain a number of quotations of Meister Eckehart and Jakob Böhme; this shows that Brouwer was well acquainted with the old European mystics.

The inner world, that the Self can obtain access to, is a boundless, chaotic mixture of fantasy worlds.

And in that merging sea of colours, without separation, without permanence and yet without movement, that chaos without disorder, you know a Direction, which you follow spontaneously, and which you could just as well not follow. You recognise your 'Free Will', in so far as it was free to withdraw itself from the world, in which there was causality, and then remains free, and yet only then has a really determined Direction, which it reversibly follows in freedom. [...]

The phenomena follow each other in time, bound by causality, because you yourself want, shrouded in clouds, the phenomena in that regularity.

The passages in 'INTROSPECTION' do not yet have the preciseness and conciseness of the later explanations of 'move in time' and other notions, but in a poetic way the nucleus of Brouwer's foundational credo is expressed here.

In Brouwer's opinion the sorry state of the world, including man himself, is caused by the interference of the intellect. Chapter III, THE FALL THROUGH THE INTELLECT, deals with the phenomenon of man's effectiveness in matters of domination of the world.

Intellect renders men in the Life of Desire, the diabolic service of the connection goal-means between fantasies. While in the hold of the desire of one thing, the intellect hands them the pursuit of another thing as a means to that end; thus for the shifting of the riverbed: the making of a dam; giving vent to one's jealousy on another: setting his house on fire; ...

Here Brouwer formulates for the first time his *end to means principle*, which was going to play an important role in his overall philosophical considerations.

Whereas, the intended domination that is implicit in this 'leap from end to means', is already in itself objectionable to the introspective person, Brouwer points out a serious inherent shortcoming of the end-to-means transition. The transition, he says, is always slightly 'off key', so that repeated use of it, eventually leads to effects that were not desired.

The act, which seeks the means, now, always somewhat overshoots the target; the means has a direction, which makes an angle, albeit a small one, with that of the target; it thus works, except in the direction of the target also in other dimensions; an effect, that, if the attention were not isolated from it, could perhaps be experienced as very harmful; but more: the attention gradually loses sight completely of the end and henceforth only sees the means. And in the sad world, where together with the Intellect, Drilling and Imitation are born from Fear and Desire, and nobody any longer surveys the whole human bustle. Many come to know that, what originally was a means, only as an end in itself; they pursue, let us say, an end of second order; with which perhaps again a means will be discovered, and that again makes a slight angle with its corresponding end. If the alluring leap from end to means is thus repeated several times, then it can easily happen that eventually a direction is pursued,

that apart from its deviations in other dimensions, makes moreover an obtuse angle with the very first direction, and so counteracts it.

The chapter provides a whole catalogue of disastrous consequences of this practice, some of them are now generally recognised, whilst some—even today—would be considered unrealistic exaggerations. For example, Brouwer's views on nature are forerunners of the present ecological tenets:

Does not industry originally deliver her products with the end to create in nature an environment of maximally favourable conditions for human life? In that connection, it was neglected that those products were themselves manufactured drawing on nature, in which, for this end, interventions were made in a disturbing manner. The balance of the conditions of human life was violated to a greater detriment, than the industrial products could ever benefit us. All the required wooden material, for instance, has led to the disappearance or degeneration of so much forest, that in the temperate zones hardly any crop for human consumption grows spontaneously. And more: we started to view the generating of industrial products as an independent goal. And in the pursuit of that goal, created as a means, a new industry of instruments that facilitate the old industry: a further blow to the old balance. In addition we recklessly started to collect the raw materials in remote countries, giving rise to trade and shipping, with all their physical and moral horrors, and the mutual suppression of nations.

In principle the same lines could have been written by modern environmentalists and reformers, and they were certainly in the minds of nineteenth century utopists and reformers. So far, Brouwer's indictment of the intellectual human imperialism differed from the moral programs of his predecessors and contemporaries mainly by the fact that his philosophical-ethical principles were far deeper and more radical. His rejection of the human pursuit of domination of the world, nature and fellow humans, was total and well-argued. He did, however, not stop at castigating society for the crude exploitation of economic, social and political powers, but went on to draw the ultimate conclusion. Namely, that even in the domain of the intellect and the mind, man was perpetrating the iniquities of the destruction of the natural balance. He extended the theme outlined above by adding science to the list of culprits perpetrating the abomination of iterated jumps from ends to means. Science is introduced as a means to further industry, and in turn becomes an independent subject; it then is followed by the 'foundations' of the science under consideration, which in turn is followed by 'epistemology'—'but the embarrassment ever increases, until all heads are reeling'. As for the scientists who take part in this regression, Brouwer comes to the merciless conclusion that

Some of them give up quietly in the end; having thought, for example, for a long time about the intangible link between the intuiting of consciousness, which evolves with life out of that Anschauungs-world, and the Anschauungs-world, which itself only exists by and in the forms of the intuiting consciousness—an embarrassment, stemming from one's own sin of

establishing an Anschauungs-world—then they put the ‘I’ which was self-created just like, and simultaneous with, the Anschauungs world in the opening, and say: ‘Yes, there should, of course, remain something incomprehensible, because it is ‘I’ who must understand.

In a sharp indictment Brouwer accused an immense catalogue of established practices—science, the industry of stimulants and of pleasure, the misuse of art and religion, the medical industry and profession (‘The medical industry was in the right hands with barbers and quacks, ...’).

Clearly, the conflict between the life of the mystic in self-contemplation and the ambitious world of improvement and domination, presented Brouwer with a real and significant problem. A sincere person like him could not just expose the undermining of worldly life; he had at the very least to consider solutions. The chapter, ‘RECONCILIATION’, offers such a solution in a remarkably mature way; it avoids the pitfall of action for transforming the sad world into a better one—‘each attempt to eliminate the non-balance only causes a shift of the non-balance’.

The solution which Brouwer offered, consisted of a reconciliation with the straying world, a resigned life in which pain, labour, desire and fear belong to one’s fate. One should not frivolously add to the burden of one’s karma, but one should neither wish to be better than one is—‘that would be a voluntary following of evil desire’. Nor should one wish to improve the world beyond what it is—‘that would be evil lust for power’.

These considerations may offer an answer to the vexing question, how one can live in a world like ours, without an abject betrayal of all that is good and sacred. The ideal of detachment, as preached by mystics and Buddhists alike, points a way out of the horrible dilemma ‘collaborate or resist’. Brouwer, doubtlessly, must have considered the problem of reconciling the contemplative life of a mystic and that of the academic scientist. He was far too sincere just to ignore this fundamental problem. We should at the same time keep in mind that on many occasions nature was stronger than principles. We shall see Brouwer rush off to rescue the innocent and to fight noble battles for justice. Only the unimaginative live by the book!

It should not come as a surprise, given Brouwer’s views on inner life, communication and language were secondary notions. There is a special chapter ‘LANGUAGE’ to which many of his later philosophical insights can be traced. The basic claim is that there is no communication between souls.

No two persons will experience exactly the same feeling, and even in the most restricted sciences, logic and mathematics, which can properly speaking not be separated, no two [persons] will think the same thing in the case of the basic notions from which logic and mathematics are built. Yet here the will is parallel in the two, for both there is the same forcing of the attention by a small insignificant area in the head. [...]

But the use of language becomes ridiculous, where one deals with the finer gradations of will, without living in that will; just as when so-called philosophers or meta-physicians discuss among themselves morality, God, consciousness and free will; people who [...] share no finer movements of the soul, ...

It seems tempting to conclude that Brouwer must have advocated an abstinence from communication; there is not much supporting evidence, however. He practised great care in his scientific communications, even to such an extent that they became difficult to read. Moreover, in daily life he was an inveterate conversationalist. In view of the earlier remarks on 'Reconciliation', there is nothing paradoxical in this. On the contrary—a person who is aware of the weaknesses of communication will probably take extra care in his use of language. Later developments will shed more light on this topic.

The Chaps. VI and VII deal with IMMANENT TRUTH and TRANSCENDENT TRUTH; the first truth 'points in the world at the consummated Karma of the world', the second points, in the world, at the personal life: 'Immanent truth clarifies, transcendental truth makes devout.'⁵²

The chapter on Immanent Truth has acquired a measure of notoriety because of its view on women. It is a theme that in the underground folklore belongs to the *chronique scandaleuse* of an otherwise respectable science. The chronicles of intuitionism have always passed over *Life, Art and Mysticism* in an embarrassed silence; the mystic views of the founder of mathematical intuitionism were thought to be a liability that might very well detract from the objective virtues of intuitionism. The resulting picture of intuitionism showed a somewhat flat pragmatic practice, which—whatever one may think of the mathematical subject—did not do justice to its historical roots. At one point there was, however, justified cause for reticence—the topic of the female. Brouwer's conception of the role of women in the world is rather dated; this may surprise those who think of Brouwer as the revolutionary innovator—but, whereas this characterisation is certainly apt in relation to his topological work, he may be considered a conservative in a number of philosophical matters.

The fact that Brouwer's intuitionism was considered new and revolutionary, can be simply explained by the observation that people had neglected their inheritance of idealistic philosophy, so that after a spell of the fashionable formalism (in mathematics) and neo-positivism (everywhere else), Brouwer's doctrines seemed to the less informed the newest thing, instead of a return to nineteenth century idealism. In fact, Brouwer was basically a conservative; *Life, Art and Mysticism* was definitely a protest action against the prevailing optimism of Progress.

His views on women can be classified as equally conservative, although one must understand that his views are part of the total mystic view that is being propounded.

The chapter *Immanent Truth* deals with the aspects of the resigned life in the world with all its conflicting desires and interests (as opposed to Transcendent Truth, which deals with life, disengaged from the influences of the world) and treats among other things the influences of various art forms and the burdening of the karma

⁵²"If Truth points in the world to the personal life, free from the ties of fear and desire, where the bliss and wisdom and the quiet rejoicing of the timing in upon oneself flourish on modesty, poverty and quiet fulfilment of duty in this life on earth, which is one's own accomplished karma, then it is Transcendent Truth."

by 'avarice, ambition, and . . . the illusion of woman'. "Immanent truth enlightens, transcendent truth makes devout."

Immanent truth breaks through even in science, which has alienated what is perceived in the outer world from the self. Science builds outside life a mathematical-logical substrate, a chimaera, and in life it builds a veritable tower of Babel. But nowadays, says Brouwer truth which is breaking through, returns the centre of gravity from what is perceived to the observer. 'Copernicus brought the rotation of the heavenly bodies to the earth: it will yet be placed man's own body'. 'All this', he adds, 'is of course no use: it leaves the world as dim as before; it is no 'Turning into itself', no turning to free truth, but the appearance of truth in the garb of folly'.

There is nothing new in the repudiation of the female by mystics and hermits. The history of the church provides numerous examples of saints who had a keen eye for the dangers of female company. In fact Christianity is not the only religion to take (or at least, to have taken) a rather defensive view towards women. So, in itself, the claim that the female burdens the karma of the man is quite in line with the tradition of ages. Brouwer, however, went beyond this observation (which, of course, carries an unmistakable danger sign: beware!) by classifying woman as a creature of a separate level. Her true function is to ward off disturbing influences from the man's karma, although she is, paradoxically, the greatest temptation to him. The role of the woman is a serving one:

Humble she will be, humbly she will wish to take all ignoble work from his hands, all work other than the pure indulgence of the faculties of his body, in which he walks the earth; without the wink of an eye she will give her life, to save his balance.

Serene will be her eye, tenaciously and patiently she lives on, and does what serves the beloved. Her body will be unwrinkled, motionless, without passion to seduce, not conscious that it seduces and yet so unbearably seductive in its taunting composure, that no man can endure it.

The Venus of Milo shows in a clear, pure way that karma of the woman, of the quiet, desireless, unconscious, and yet so infernally seductive woman.

According to Brouwer, a woman can also burden her Karma, for example, with 'male activities'. Noble institutions will degenerate when women intrude, so the work of man, when taken over by women will necessarily be degraded. By the usurpation of parts of the prerogatives of man, the woman acts against her karma. In a long catalogue he lists all the shortcomings of the woman. If she is independent, she looses her femininity and burdens her karma, and if she is truly female, she is a shadow of her beloved and is guilty of naivety:

In worldly matters and worldly convictions she will naively follow the beloved, and defend views, unthinkingly copied, as objectively indisputable axioms against all objections from third parties; in disputes with such a woman the ridiculousness of language as a means of reaching an agreement clearly appears in the form of the notorious 'feminine logic'.

Whereas the philosophical and mathematical conclusions that Brouwer would eventually be drawing from his mystic insight and convictions were original and

even revolutionary (perhaps in a counter-revolutionary way) his views on women, it seems, were rather modelled after the prevailing views of the nineteenth century. Many of the cliché's that turn up again and again in the treatises on the weaker sex,⁵³ appear in Brouwer's essay; women are temptresses, endangering male purity—pale, without expressive lines. Even Ophelia, the preoccupation of the Victorian period, is called as a witness.

The passages on women are certainly not the strongest in Brouwer's book, but at least he was not guilty of building a scientific argument, which was not uncommon in this particular area.

His message was mainly one of a moral nature, a warning from an ascetic mystic to the world. To the young man with the exalted ideals of the introverted seeker, women personified the dangers to man's karma. No doubt his personal emotional life and history had influenced his philosophic outlook. As a result, woman was not only the spectre of the fall from the ardently sought inner peace, but she was furnished with all the paraphernalia of the temptress and of the weak. Woe to him that succumbs to the distracting charm of the female:

But truth in art shows the distinct lines: man should avoid, ignore woman; but the woman should live in the man, holding herself insignificant, powerless and worthless, and sacrificing everything to the beloved. A real woman is pale, supple, without expressive lines, with dull, dreamy eyes: she has no muscular strength, and cringes from nothing. And a man who turns to a woman, has lost his life.

The choice of images and of words suggests that Brouwer was acquainted with the nineteenth-century literature on the role of the woman. Many of the themes and descriptions have a familiar ring to the connoisseur of the Victorian era. It is tempting to conjecture that his stern views on the role of the weaker sex may have been the result of female attacks on the bastion of Bertus himself. Given the lack of facts, this has to remain what it is: a conjecture.

Many have wondered about Brouwer's theoretical aversion to women and his rather progressive daily outlook; in the twenties he was one of the first mathematicians (maybe the first) in Holland to engage a female assistant, and he admired his female colleagues in the academic world. He was on good terms with the renowned Emmy Noether and with Olga Taussky, and he certainly did not avoid female company, neither in the context of science, nor in his private life. Presumably he conceived the sermons on the distracting female in the framework of the avowed goal of the mystic: the unconditional introspection, whereas—as we have seen above—the actual life in the world required the sincere mystic to suffer the ways of the world, under pain of loss of karma through pride.

There is also a brief mention of science and truth:

Furthermore immanent truth breaks through in science as well. It has separated the observed things from the ego, and placed it in a Anschauungs-world,

⁵³Cf. Dijkstra (1986).

which is thought to be independent of the ego, and which has lost the connection with the Self, which alone feeds and directs. Thus it builds outside life a mathematical-logical substrate, a chimaera, and within life, a tower of Babel with its confusion of tongues.

Here the adoption of an independent outer world appears as an attribute of immanent truth.

Life, Art and Mysticism contains a number of further remarks on society and its organisation. Brouwer's conception of work as something noble and lofty clashed forcefully with more progressive ideas. We have already mentioned the inroads of women into the labour market and its negative consequences:

The gradual usurpation of certain forms of work by women will go inexorably hand-in-hand with a degeneration of that work into an ignoble state.

The graduate student, who only a few years ago attended socialist and communist meetings in the company of Scheltema and Wiessing, apparently had realised that certain features of socialism were incompatible with the world of the mystic. It should be fairly evident that socialism, with its preoccupation with the world and its socio-economic features, has no call for a mystic credo, and conversely the mystic would consider the materialistic socialist as one of those unfortunate, unavoidable parts of his Karma. Brouwer viewed the consequences of socialism with some mild horror:

Until quite recently the state, and public life, were viewed as something honourable, even metaphysical; and a position in society was considered a noble task; [...] But the socialistic movements have in the last century washed away that aspect of 'honourable', [...].

When, as the endpoint of the socialistic degeneration, the state will have turned into a well-oiled automaton, well—then the administration will perhaps be completely left to women.

The final chapter, 'ECONOMICS', must be seen as a logical conclusion of the preceding chapter. The proper attitude in life towards the theoretical contemplation of life and society, of the human who has taken to heart the call to introspection and detachment, is one of renunciation.

There is one more thing, which the free life should be careful not to become tainted with, as long as its ties with society last: economics.

For, inherent to economics is, according to Brouwer, the idea that 'foolishness and injustice' are essential—otherwise economics would be superfluous. Thus the intellectual study of the ways and laws of misfortune and injustice will not attract the free man. Desire of property evidently turns the attention outward;

..., for he who views something as desirable or deplorable, views it as something outside himself, as part of a world which exists independently and persistently, as part of a fixed inalienable possession, that one can cultivate, take

care of, clean, raise, as one can with one's flowers or chickens. Exerting influence outside oneself, be it for improving the world or for one's own power, is: blinding, vanity, thirst for power.

The Free rather view their fellow beings as delusions which solicit compassion, disturb the path of life, which are to be borne like guilt, for their freedom does not suffer them around. And the Free cautiously slip past them.

Society is, in this perspective, an artificial web of power and domination, complete with its moral justification in abstract terms of 'suppression', 'justice', 'rights', ... Here, Brouwer appears in the cloak of the radical anarchist, denouncing the social theories that legitimise the powers that be. The theorists are vigorously criticised:

They are talking about 'Human Rights' as if man brought rights into his life, and more than miserable duties, as a punishment for being born.

They are talking about 'labour', its necessity, and the happiness it brings. As if the labour of mankind were something else, but a blind convulsion of fear for what is no evil, and of desire for what brings misery.

The economists and leaders of the people also love to talk about a 'future state of the deliberately co-operating people'; this would be possible for people without fear and desire, but those would not work, and a world of such persons would not exist.

Thus this final chapter once more confirms the basic tenets of the earlier ones: meddling with the organisation of the life of human beings is doomed from the start. The final words sum up the lesson:

he, who knows not to possess anything, not to be able to possess anything, not to attain stability, and who resigns in resignation, who sacrifices everything, who gives everything, who no longer knows anything, wants anything, wants to know anything, who lets everything take its course and who neglects everything, to him will be given everything and to him is opened the world of freedom, of painless contemplation, of—nothing.

The Delft lectures and the subsequent book went largely unnoticed; there was a review in one of the daily newspapers, a rather devastating one, and there it stopped. Brouwer sent complimentary copies to his friends and colleagues. Two reactions have been preserved; his friend Scheltema disagreed on principle:⁵⁴

I received your booklet shortly after my letter and I have started to read it. So far I did not read with the aversion I expected, and I wish many a Philistine this literature as a refresher—but you know how 'heartily' I disagree with you, how, for example, the conscious social democrat immediately rejects the premise you start from (that is that the original animal-like human life is the happiest imaginable one, and at least should be worth pursuing most) on the

⁵⁴Scheltema to Brouwer, 16 May 1905.

contrary, stresses that the happiness of the human society will only *begin* after the *conclusion* of the era of barbarity in which we still live . . .

A surprisingly mild reaction considering Brouwer's volleys at socialism! Korteweg, Brouwer's Ph.D. adviser, was more critical:⁵⁵

That I am very much interested in you and hence appreciate the sending of your slim volume, therein you are certainly not mistaken.

Whether I shall read it? I thumbed through it, but it is not the reading that I wish or that is good for me. It is true that there are abysses very close to us, but I do not like to walk on the brink of them. It makes me dizzy and less able for what I need to do. Whether it is good for you, I don't know. So much is certain, that I would rather see you walk along other paths, even though I find it sometimes also hard to follow you there, where you cut so deeply through fundamental matters.

Life, Art and Mysticism earned its author a reputation of eccentricity, although rather by an obscure oral tradition than by direct acquaintance with the text.

The question that immediately comes to mind is, was Brouwer serious about it all? Considering the available evidence, the answer is probably 'yes'. He may have exaggerated here and there to provoke the audience, but by and large the mysticism was genuine. In addition to his pronounced views on life, the complacency of progress and the progressives was probably a valuable source of stimulation.

2.7 Family Life in Blaricum

To Louise, who was only 12 years old at the time of *Life, Art and Mysticism*, the whole matter seemed mysterious. She was attending in Amsterdam the school of a certain *Master Gerhard*, which was conducted on socialist principles. The fee for the school was forty cents a week. With this education, based on the principles of clean, healthy, idealistic socialism at the turn of the century, she must have been puzzled, to put it mildly, by her stepfather's rather unusual, gloomy views.

Like any child, she would go exploring in the house when she was left by herself. She recalled that she was drawn by a magnetic power to the cupboard in which the manuscript of *Life, Art and Mysticism* was stored. She cautiously climbed on a chair and read bits and pieces of it, closing the cupboard and jumping down as soon as she heard a key in the lock. Mysterious as the contents were to her, she understood enough to guess that this book should not get into the hands of Master Gerhard, and so she told Brouwer that she knew about the manuscript, asking him to promise that he would not show it to her teacher. Eventually Master Gerhard got wind of the book, as a result poor Louise was expelled from the school on the grounds that her parents did not conform to the socialistic ideals.

⁵⁵Korteweg to Brouwer, 13 May 1905.



Fig. 2.7 The hut in Blaricum. [Photo Dokie van Dalen]

Since she was no longer at school after this incident, Louise was made responsible for the housekeeping in Blaricum—something she hated. The hut had little comfort, just one bedroom upstairs. Louise had to sleep on a wicker chair downstairs. Brouwer worked downstairs or in the garden, often reclining in his characteristic pose in the same long wicker chair.

Lize stayed in Amsterdam during the week, managing the pharmacy. Brouwer stayed home to work and went over to Amsterdam for his teaching, visits to the library, occasional meetings with fellow mathematicians, and for his regular concerts in the Concertgebouw. When it was more convenient to stay in Amsterdam, he joined Lize in the apartment over the pharmacy.

Once a week the mathematician Hendrik de Vries came to visit. He usually brought his violin, which he played well, and Brouwer accompanied him at the piano. Louise's role was to play the conductor. The lessons of mother Brouwer had born fruit. Bertus became an ardent amateur pianist. He loved Beethoven, and according to Lize, his favourites at the time were the piano scores of the Beethoven Symphonies.

When Brouwer got it into his head to order a day of fasting, Louise was not allowed any food at all, not even yesterday's leftovers. She soon discovered, however, that Brouwer dodged the fast by nibbling nuts from the drawer of his desk. From then on she took her preparations, and bought enough biscuits⁵⁶ to survive the day.

As part of her education, Brouwer decided to teach Louise how to cook. The first lesson was how to prepare rice; it ran as follows: 'rice is a product from the Indies;

⁵⁶frou-frou, a special kind of wafer.

it is carried by a ship and there negroes sleep in it. Therefore I want you to wash the rice ten times before you boil it' (Brouwer knew very well how lazy Louise was). Needless to say Louise did not follow the instructions. There are many little stories and events that show the uneasy relation between Brouwer and Louise. To mention one example, Brouwer told Louise to eat by herself in the kitchen when Lize came over for dinner.

Louise also had to walk from time to time to her school in Amsterdam. And sometimes it happened that Brouwer chose to teach her French; sitting at a terrace in Amsterdam, he would quite sternly take her through the drill, not hesitating to slap her if her attention relaxed.

The relationship between Brouwer and Louise was problematic from the beginning. Brouwer was easily irritated by Louise and considered her lazy, stupid and stubborn. She certainly was far from industrious, but Brouwer's treatment of her did little or nothing to improve her attitude. As long as Brouwer lived, they had fierce clashes about everything. In the beginning Brouwer had the advantage of his age, but gradually Louise began to free herself from the pressure of her stepfather. And eventually the two battled on equal terms. Whereas Brouwer had made it a principle to avoid unpleasant and obnoxious people, he could not avoid Louise. For Lize the situation was extremely painful, because Louise was her only child, and she did not want to sacrifice the happiness of Louise to that of her husband, but neither did she want to hurt Bertus. The surviving correspondence between Lize and Louise shows how difficult it was for Lize to steer a safe course between daughter and husband. Louise told how, when she was still living at home, Brouwer sometimes introduced her to his visitors with the words: 'and this is my silly daughter'. The sad thing was that it was not intended as a joke. In return Louise thought that her stepfather was himself as mad as a hatter; in her opinion all the fuss at the house in Blaricum only served to keep him quiet. If no prophet is recognised in his home country, then certainly he is not recognised at all in his own home! Only very late in life, long after the death of her stepfather, she changed her views on him.⁵⁷

Even in her old age Louise's memory was wonderfully clear, she provided many facts that at first sight seemed curious. A complicating factor was that she was very confused about religious matters. The details she provided on daily life and the personal history of Brouwer and the crowd around him have, however, mostly been born out later by independent confirmation. By extrapolation I have come to view her information as generally reliable.

⁵⁷When in 1981 a conference was dedicated to the centenary of Brouwer's birth, a short biographical article appeared in the Dutch weekly *Vrij Nederland*, van Dalen (1981). Reading this biography, Louise suddenly realised that Brouwer was not a fool after all. As she regularly communicated with the spirits of the departed, she noted that Brouwer's spirit had found rest after this public recognition.

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