

Chapter 7

1950 – 1966

1950-02-28

To S. Carathéodory jr — 28.II.1950

Blaricum⁽¹⁾

Dear Mr. Carathéodory, [Sehr geehrter Herr Carathéodory]

The notice of the death of your father, which arrived only today, has deeply moved me. His friendship and the awareness of his great importance as a thinker and as a human personality, have been something absolutely essential for me for many decades. His death has made the world poorer for me. How much I have since 1945 looked forward to an opportunity to meet him again! It could not be, and for me it only remains to offer my most cordial condolences to you, the other family members and the other relatives for the severe loss you suffered, and to assure you that I will hold the memory of Constantin Carathéodory with the highest regard.

With respectful greetings

Sincerely yours⁽²⁾

(signed) L.E.J. Brouwer

[Signed carbon copy – in Brouwer]

⁽¹⁾Reply to an obituary notice of Constantin Carathéodory, dated 1950, February 2 (in the Brouwer Archive): ‘Unser lieber Vater, Geheimer Regierungsrat Univ.Prof.Dr. Constantin Carathéodory ist heute nach schwerer Erkrankung im Alter von 76 Jahren sanft entschlafen, Münster, den 2.II.1950.’ [Our dear father, privy councillor Prof. Dr. Constantin Carathéodory, aged 76, today has passed away peacefully after a serious illness.]

⁽²⁾*Mit hochachtungsvollem Gruss – Ihr ergebener.*

1950-12-22

To W. van Haersolte⁽³⁾ — 22.XII.1950

Blaricum

Dear Sir [Hoogwelgeboren Heer]

Your letter of the 16th of this month came into my hands. Far from being finished, the conflict with the company Noordhoff concerning *Compositio Mathematica* has considerably escalated since the beginning of this year, but it has also stalled in connection with the following two catastrophic circumstances

1. Shortly after I wrote to you the last time, I had to note to my bewilderment, that my foreign colleagues in the Committee of Administration, who were in July 1949 still without reservation on my side, had abandoned me as a result of information and promises that remained secret for me.
2. The shock that was delivered to me through this stunning observation has left me, after a heart attack, mentally and physically incapacitated to such an extent, that I am with respect to my defense against the aggression concerned out of action for a considerable period, and that even any abiding in the realm of thought of this conflict is forbidden to me for a considerable time.

That observing this instruction has become the cause that I have not managed earlier to inform you about the new stage into which the affair has entered, fills me with shame, and I offer you my sincere apologies for it.

In the meantime I remain, in spite of all forced inaction, clearly aware that the conflict with Noordhoff not only concerns my personal honor, but also the honor of my country, so that is it my sacred duty to resume this struggle as soon as I am able to, do so. I sincerely hope that you are willing to continue your support for me in this matter.

reiterating my apologies, I remain,

yours sincerely
(signed) L.E.J. Brouwer

[Signed carbon copy – in Brouwer]

⁽³⁾Brouwer's legal adviser in the Noordhoff conflict.

1951-02-05

From R. Fraïssé – 5.II.1951

Algiers

Attaché de recherches au Centre National
de la Recherche Scientifique, Algiers
187 rue Laperlier

Professor, [Monsieur le Professeur]

I am at the moment writing a mathematical dissertation at the University of Algeria, under the direction of professor De Possel, with whom I am working since January 1948; my investigations deal with the theory of relations and they originate in problems of formal logic, more in particular of semantics.

Mr. de Possel thought that even a short contact with the Dutch intuitionist School would be most profitable for me. He has obtained a study grant for me from the Dutch government. I have asked provisionally for the months of March and April. Would it be possible for me to meet you during that period, and if not what would be the period that would suit you best? I direct a similar request to professors A. Heyting and E.W. Beth.⁽⁴⁾

I enclose in this letter reprints of my notes that have now appeared in the Comptes Rendus de l'Académie des Sciences.

Hoping to have the pleasure soon to become acquainted with you through direct conversation, and not only through the publications of your articles,

Sincerely yours,⁽⁵⁾

R. Fraïssé

[Signed autograph – in Brouwer]

⁽⁴⁾Fraïssé stayed in 1951 in Amsterdam for research in logic, semantics, set theoretic theory of relations and intuitionistic mathematics; see R. Fraïssé, 'Rapport sur le séjour en Hollande', dd. Amsterdam, le 21 mai 1951, in the Beth Archive. The supervision was in Heyting's hands; Brouwer was in Switzerland at the time. ⁽⁵⁾*Je vous prie d'agréer, Monsieur le Professeur, l'expression de mes sentiments les plus respectueux.*

1951-04-18

From Mrs. van der Corput — 18.IV.1951 Stanford University

Dear Professor Brouwer, [Hooggeachte Prof. Brouwer]

To start with, I should apologize for this typed letter, which, as I fear, will get full of errors. In fact I have yesterday burned my right-hand so terribly in boiling water, that there is no skin left on the five fingers. Writing is impossible, and the larger part of the day I is still stay in bed, but now that my husband is answering your letter, I would like to enclose a letter, typed with my left hand.

Some weeks ago I was in Holland because of a serious illness of both of my parents. And I heard at that occasion from at least three sides, that you blame my husband for the affair with *Compositio Mathematica*. According to these sources you consider him as the *auctor intellectualis* in the background. I cannot possibly decide, if these sources have correctly rendered your opinion, but if you should really think so, then I set great store by assuring you that my husband has vigorously opposed the action concerned, and that has caused him trouble with others. I happened to be there when these discussions about the affair were going on, and thus know this by my own experience. The same thing must appear from the correspondence exchanged with the company Noordhoff.

Of course it occasionally happens that my husband differs of opinion with somebody else, but it is his invariable rule to settle these differences with the persons concerned, and immediately. It is not his habit to hide behind others. But he disagreed with the *Compositio-action*, and he has refused to join.

With my warm greetings to your wife, and my best wishes for your health, which, as I heard, is a problem these days,

yours, ⁽⁶⁾

[Carbon copy – in Corput]

⁽⁶⁾ *gaarne Uw*

Editorial supplement

J. van der Corput to E.W. Beth, A. Heyting — 12.VI.1951 *Stanford*⁽⁷⁾

Dear Friends, [Waarde vrienden]

In connection with a serious illness of her father in Groningen, Jeannet⁽⁸⁾ has been back and forth to Holland. As she heard from various sides, Brouwer claims that I am the real auctor intellectualis of the *Compositio Mathematica* affair, and that the others just carry out my instructions. Jeannet wrote in the middle of April to him that his accusations are neither here nor there; at the same time I declared the same thing in my letter. He does not even bother to reply.

More important is his attitude with respect to the two vacancies.⁽⁹⁾ In fact I should not worry about what Brouwer does or doesn't do, but I find it dreadful all the same. I think it is disgraceful, that a man to whom mathematics should be dear, dares to put forward such a proposal. It would mean the destruction of much of what we have built up at great cost. It is clear that the faculty will reject unanimously his proposal, nonetheless his action carries serious dangers, of which he must be aware. I am looking forward to a period in which mathematical matters at the Amsterdam University can be dealt with in a businesslike manner, and can be deliberated among ourselves.

[.....]

With many warm greetings, also from Jeannet, and also for your respective spouses.

tt.

Jan

[Signed typescript – in Beth]

⁽⁷⁾Only the parts relevant to Brouwer are reproduced. ⁽⁸⁾Mrs. J. van der Corput.
⁽⁹⁾Vacancies Mathematical Institute UvA after departure of Van der Waerden and retirement of Brouwer.

1951-05-01

To Mathematics & Physics UvA — 1.V.1951

Blaricum ⁽¹⁰⁾

Dear Chairwoman, [Hooggeachte Voorzitster]

On the agenda of the faculty meeting of tomorrow, which I am unable to attend, I find listed the following agenda point: ‘vacancies in mathematics’, a manner of phrasing that seems to me less fortuitous, for indeed professor Van der Waerden has left and I myself will leave soon; however the position of Van der Waerden was in my view created last year less for the matter than for the man, ⁽¹¹⁾ and my own function has been eroded gradually since 1946 by the establishment and the operation of the Mathematisch Centrum, and under the present circumstances it has lost its reasons to exist.

As furthermore the academic education in mathematics can proceed without disruption by merely extending the teaching assignments of Dr. Bruins by adding analysis to it, which subject Dr. Bruins has taken temporarily care of in an excellent manner; whereas applied mathematics already is for some time part of his teaching duties, so there is no urgent public interest to appoint new mathematics teachers, hence the authorities, for whom, after the most recent Government declaration, every admissible economizing is obligatory, have at the moment the duty to desist from such an appointment.

With this extension of his teaching duties naturally the title of professor should not be withheld any longer from Dr. Bruins, because among the Dutch mathematicians of his generation he is at the top with respect to his versatility and originality, and also internationally he probably has most attracted attention.

As a clear token of the appreciation and admiration that has been shown to Bruins from beyond our borders, I allow myself to enclose a copy of a letter by Prof. Turnbull dated March 24, 1951.

With this reduction of the existing excessive staffing of the mathematical teaching body of the university, which impedes the education of the students, also a first perspective would be opened onto restoring the prewar mathematical school of Amsterdam and the international influence it had,

⁽¹⁰⁾ Addressed: Voorzitster der Faculteit der Wis- en Natuurkunde der Universiteit van Amsterdam; Chairman of the Department of Mathematics and Science [i.e. Van Arkel].

⁽¹¹⁾ *minder ad rem dan ad hominem.*

where for the positions earlier held by Mannoury, Heyting, and Beth would now be the proper persons.

For the realization of this restoration it would furthermore be necessary:

1. to appoint a lecturer, so as to relieve Heyting en Bruins from teaching undergraduates ⁽¹²⁾
2. To restrict the academic mathematics teaching staff gradually further to four professors and a lecturer (after a considerable increase of the prosperity of the country and the intellectual capacity of the students possibly to be extended to five professors and a lecturer);
3. to make the curriculum for the doctoral examination ⁽¹³⁾ more uniform, and more specifically, to require a compulsory examination of some depth for all candidates by both specialists in intuitionism and symbolic logic;
4. To cut all connecting arteries between mathematics at the university and the extra-curricular Mathematisch Centrum, through which since 1946 the lifeblood of the Amsterdam mathematics school has been drained. ⁽¹⁴⁾

In connection with the gradual erosion of my personal academic function through the establishment and operation of the Mathematisch Centrum, mentioned in the beginning of this letter, I submit hereby a copy of the letter I wrote on October 8, 1946, to Mayor and Aldermen of Amsterdam, an answer to which was never received, and the contents of which were also ignored. The page of history mentioned at the end of that letter has meanwhile almost been written to its end. A conciliatory final paragraph might however be added to it, if the City Council of Amsterdam would at the eleventh hour recognize the hollowness of the arguments that at the time persuaded it to allocate the requested subsidy to the Mathematisch Centrum at the expense of the University of Amsterdam, and if it would, under a brief extension of my term of employment, hand back to me for a short time the leadership of the Amsterdam mathematical organization with the assignment to strip this organization of all expensive pretense and all unjustified privileges, and concentrate it once more on the branch of science that in the old days gave some significance in the world to Amsterdam mathematics, and that still is represented better in Amsterdam than

⁽¹²⁾ *candidandi*. ⁽¹³⁾ Comparable to M.Sc., and formally prerequisite to get a Ph.D.

⁽¹⁴⁾ Brouwer's proposals to the Curators caused considerable upheaval among the resident mathematicians, see [Van Dalen 2005] p. 854 ff.

anywhere else in the world, and that still receives ever more international attention.

With collegial greetings

the faculty member
signed L.E.J.Brouwer.

[Typescript copy – in Corput]

1951-05-16c

From D.R. Pye — 16.V.1951^c

London ⁽¹⁵⁾
University College London
Gower Street, W.C. 1

Dear Sir,

In 1937 the late Dr. A.T. Shearman bequeathed to this College the residue of his estate to found a course of lectures on Symbolic Logic and Methodology. I enclose a copy of the scheme for the Shearman Lectureship which was established in 1938. Unfortunately the war intervened before it was possible to hold the first of these lectures, but the scheme was inaugurated in 1946 with a course of lectures by Earl Russell ⁽¹⁶⁾ on ‘Scientific Inference’. A second course of lectures was given in 1948 by Dr. Schrödinger on ‘The Origin and Nature of Scientific Thought’ and a third course in 1950 by Professor Alfred Tarski on ‘Fundamental Ideas and Problems in Meta-Mathematics’.

I am writing now, on behalf of the Standing Committee appointed to advise in this matter, to ask you if you will honor them by giving the next series of lectures in the forthcoming session (1951–1952).

As you will see from the Scheme, the funds at our disposal are only £100. Though from our point of view, the most suitable times in the session at which to hold the lectures are, in order of preference, February/March or mid-November/mid-December, we should as far as possible, wish to fix the dates to suit your convenience.

⁽¹⁵⁾Sender: D.R. Pye, C.B., M.A., Sc.D., F.R.S. Provost. ⁽¹⁶⁾Bertrand Russell.

I very much hope that you may find yourself able to accept our invitation.

Yours very truly,
D.R. Pye

[Signed typescript – in Brouwer]

Addendum

[*Rules of the Fund (added on reverse side of the sheet)*]

The College Committee, on the recommendation of the Professorial Board, in March 1938, resolved as follows:—

- (i) That the income of the Shearman Fund be used for a biennial course of lectures, the payment to the lecturer, including stipend and expenses, being £100.
- (ii) That the number of lectures be normally not less than three nor more than six, at the discretion of the Lecturer.
- (iii) That the Lecturer be invited to deal with some problem within the general field of Methodology and Symbolic Logic.
- (iv) That a Standing Committee of the Professorial Board be appointed to advise on all matters pertaining to the Shearman Lectureship; that the following be members:-

The Provost
The Professor of the History and Philosophy of Science
The Grote Professor of the Philosophy of Mind and Logic
The Professor of Psychology
The Professor of Political Economy

1952-03-04

To W. Radley — 4.III.1952

Blaricum

Dear Miss Radley,

I approve of the dates proposed in your letter of February 28th (RS/143/162). The title of my lectures will be ‘Outline of intuitionism’.

As friends of mine in London to be invited to the tea party I could mention Professor K.R. Popper of the London School of Economics, Professor H. Dingle of University College, and outside of the university Mr. and Mrs. Haynal Conyi, 7 The Park, NW11, and Miss Winifred Gordon Fraser, 2 Nottingham Str., W1. Outside London, I presume the following scholars specially interested in my subject: Whitehead, Kneale and Waisman in Oxford, Steen (Christ's), Braithwaite and Routledge (King's) in Cambridge, Newman, Polanyi and Turing in Manchester. If some of them would have opportunity to attend my first lecture, I should be happy to see them at the tea party.

I should like to receive a dozen of lecture notices to be sent by me to addresses which might cross my mind. ⁽¹⁷⁾

Yours sincerely
(signed) L.E.J. Brouwer

[Signed typescript – in Brouwer]

1953-00-00

To D. Coxeter — 1953

Blaricum ⁽¹⁸⁾

Confidential for Donald Coxeter
LEJB

As far as I see, the present legislation and distribution of power in the Netherlands is such that who neither belongs to a political party, nor to a church, nor to a coterie, nor to a category, who moreover is neither dishonest, nor insincere, nor stupid, nor stonehearted, nor pecuniarily independent, nor below seventy years of age, needs all his strength to remain alive, and has to forsake any vocation.

L.E.J. Brouwer

[Signed autograph – in Brouwer]

⁽¹⁷⁾A copy of the notice can be found in the Brouwer archive. ⁽¹⁸⁾The note is undated; it should not be dated before 1951; the terms used, suggest that it was written in the early fifties. The note shows Brouwer's bitterness over his postwar treatment.

1953-07-28a

To H.S.M. Coxeter — 28.VII.1953^a

Blaricum

My dear Coxeter

My arrival at Montreal airport has been fixed on August 7th at 10.10, and a reservation has been made for me in Montreal at the Berkeley Hotel by Professor Williams. So, if nothing will come between (which I keenly hope), I shall now very soon have the pleasure to meet you.

As you probably know, the following list of papers which could be usefully examined by my audience previously to my lectures, has been sent by me to Professor Williams:

Weyl, 'Über die neue Grundlagenkrise der Mathematik', *Mathematische Zeitschrift*, vol. 10 (1921)

Dresden, 'Brouwer's contributions to the foundations of mathematics', *Bulletin of the American Mathematical Society*, vol. 30 (1924).

Wavre, 'Y a-t-il une crise des mathématiques?', *Revue de Métaphysique et de Morale*, vol. 31 (1924)

Wavre, 'Logique formelle et logique empiriste', *Revue de Métaphysique et de Morale*, vol. 33 (1926)

Lévy, Wavre et Borel, 'Discussions', *Revue de Métaphysique et de Morale*, vol. 33/34 (1926/27).

Brouwer, 'Wissenschaft, Mathematik und Sprache', *Monatshefte für Mathematik und Physik*, vol. 36 (1928)

Brouwer, 'Consciousness, Philosophy and Mathematics', *Proceedings of the Xth International Congress on Philosophy (Amsterdam, 1948)*

Kindest regards from house to house

ever yours

(signed) L.E.J. Brouwer

[Signed autograph, copy – in Brouwer]

1953-09-27

To W.G. Fraser — 27.IX.1953

New York

Dear Miss Fraser and you all members of the New Europe Group!⁽¹⁹⁾

The crushing news of Mitrinovic's death reached me here.⁽²⁰⁾ It's beyond expression how deeply I am moved by the passing away of this survivor of an era of vision, this herald of an era of realization.

In friendship
(signed) L.E.J. Brouwer

[Signed handwritten draft – in Brouwer]

1953-11-28

To Mr. E., Mrs. L. Gutkind — 28.XI.1953

Davenport (Iowa)

Dearest Ekalucia [Allerliebstes Ekalucia⁽²¹⁾]

Because of the many social occasions that were connected with my lecture tour, it had a much slower course than I expected. But the larger part is behind me, and between today and my return to you still lay Urbana, LaFayette, Toronto and Ithaca as stages. I will probably be again in New York on 12 December. My address until 3 December is c/o Dept. of Mathematics, Purdue University, La Fayette, Indiana. Then until 9 December c/o Professor H.S.M. Coxeter, 67 Roxborough Drive, Toronto 5, Ontario.

You are embraced by⁽²²⁾
your Bertus

[Signed autograph – in Brouwer]

⁽¹⁹⁾A group of idealists founded by Mitronovic. It has artistic, philosophical, and mystical roots in the early part of the twentieth century, in particular the years before and after World War I. See [Van Dalen 2005] p. 864, [Rigby 1984]. ⁽²⁰⁾Mitrinovic died on 28.VIII.1953, cf. [Rigby 1984] p. 185. In the Brouwer Archive there is an obituary notice with: '[...] death of the Founder, Dimitrije Mitrinović [...] Requiem Service [...] 7th October [...] September 1953.' ⁽²¹⁾*Allerliebstes Ekalucia* – contraction of Eka (Erich Gutkind) and Lucia (Gutkind's wife). ⁽²²⁾*Es umarmt Euch.*

1954-12-31**To F. van Anrooy** ⁽²³⁾ — **31.XII.1954****Blaricum** ⁽²⁴⁾

Dear Freddy, [Beste Freddy]

Thus Peter has fought the battle of his life to the end. ⁽²⁵⁾ A life that, guided by a great and indomitable talent and by a tempestuous wealth of thoughts and feelings, has found the predestined triumphs and conflicts on his path.

My deepest sympathy and my assurance that I, with the many others who are better qualified for it, will hold his memory very dear.

Your
Bertus Brouwer

[Signed autograph – in Heyting]

1955-01-04**To H.C. Marston Morse** — **4.I.1955****Blaricum**

Dear Morse,

All good wishes for 1955 to you and Mrs. Morse. Thinking back with the greatest pleasure to my service in Princeton during October 1953. Playing with the idea of being called back to the Institute some day for a longer stay. The which might also be to the profit of science, my circumstances in the Netherlands being absolutely prohibitive for scientific research.

Please remember me to the other members of the Institute, in particular to Veblen, Einstein, Oppenheimer and Von Neumann.

A small pile of reprints is following by slower mail.

⁽²³⁾Peter van Anrooy's widow. ⁽²⁴⁾A copy was made available by Van Anrooy's daughter Fien, the second wife of Arend Heyting. ⁽²⁵⁾Peter van Anrooy, 13.X.1879 – 31.XII.1954; well-known musician, composer (Piet Heyn Rhapsody), conductor (Residentie Orchestra).

Kindest regards to you and Mrs. Morse.

Faithfully yours
(signed) Egbertus Brouwer

[Signed autograph, copy – in Brouwer]

1955-05-03

To J. Kok — 3.V.1955

Blaricum

Dear Colleague, [Hooggeachte Collega]

To my great regret I am, because of an indisposition, unable to attend the meeting of tomorrow and to hear your memorial address.⁽²⁶⁾ In the meantime I would, in case you plan to give the memorial address not only a collective, but also an individual character, take the liberty to commemorate two fallen [members of the mathematical institute] who were close to me, and whose memory is dear to me. They are

The late J.F. Koppers, in life the porter⁽²⁷⁾ of the Mathematical Institute of the University, who during the first four years of the occupation with an untiring and almost superhuman diligence and perseverance succeeded in keeping many hundreds of fellow countrymen out of the hands of the occupation forces, and moreover usually knew how to ensure their livelihood. In June 1944 he was arrested, and at the end of 1944 he died in Neuengamme. Of his family that was left behind, not only his widow will have to be taken care of, but one of his three adult children is probably not able to secure its livelihood.

Furthermore, the late Dr. M.J. Belinfante, in life private docent at our university, and one of the most gifted researchers of our country. With an equally surprising and admirable resignation, he has during almost four years refused steadfastly each opportunity to evade the threatening dangers. In the spring of 1944 he was arrested, and he died later in Theresienstadt⁽²⁸⁾.

⁽²⁶⁾For the victims of the Second World War. ⁽²⁷⁾A function that resembles that of the college porter. ⁽²⁸⁾Belinfante was deported to Theresienstadt; he died in Auschwitz.

Apologizing for the possibly superfluity of the above information, I remain with friendly greetings,

Sincerely
your
(w.g.) L.E.J. Brouwer

[Typescript – in Brouwer]

1957-02-03

To H. Hopf — 3.II.1957

Blaricum

Dear Hopf, [Lieber Hopf]

In view of rumors that reached me that some scholars have the plan to call attention to the coming fiftieth anniversary of the appearance of my doctoral thesis, I would like to announce my *explicit wish* to all colleagues that are scientifically more or less close to me, that *no* attention will be paid to this anniversary and that also *any printed reference of the mere fact will be refrained from*. And since not all these colleagues can be reached by me, I would like at the same time ask the colleagues that I approach personally in this matter, to do all they can to ensure that in their circle of influence my express wish is respected to the largest possible extent.

My warmest thanks in advance for your kindness, and cordial greetings from house to house.

Your
L.E.J. Brouwer

[Signed autograph – in Hopf]

1958-07-23

From A.S. Esenin-Volpin — 23.VII.1958

Moscow

1st Volkonski pereulok, 11, apt. 4

Dear Professor Brouwer!

I am one of those who continue your criticism of the classical point of view — but that continued criticism destroys one of your fundamental no-

tions, namely that of the natural number series. In virtue, what is it? Why are we sure that such numbers as 10^{12} exist — or, more exactly, why are we sure that 10^{12} is representable in the form $1+1+\dots+1$? Is the complete induction principle compatible with the existence of the operations ‘+’ and ‘.’?

Instead of an absolute notion of a natural number I introduce here a relative notion of a feasible number. And the unfeasible objects may be regarded as constituting a model for the infinity which appears in the Zermelo-Fraenkel set theory (of course after the banishing the logical operators ‘ \forall ’ and ‘ \exists ’ from the latter).

It is a copy of a letter I sent also to some other scientists in that domain. It was written before the last two weeks, and now I have found a most exact version of the theory I consider. The elaborated exposition of that new version I hope to achieve in September-October and I shall write to you about it if you desire. Some remarks about it are in PPS.

PPS. I continue the study of the theory of feasible objects. Now nearly everyday some new ideas come to me and I don’t want to postpone the sending of this letter.

Concerning the question of the last paragraph on the page 20 I say:

The thoughts of a person considered there, if relating to ordinary objects, are accessible to the traditional ‘omnipotent’ subject and therefore the thinking of that person about these objects must be consistent, but it leads only to true conclusions if the first premises are true (in an intuitive sense). And it is evident also that the introducing of the new variables for the feasible objects cannot destroy the consistency unless a postulate concerning the existence of some unfeasible object is added. But this postulate is a true one.

Such are the reasons that the thinking of our imagined person must be consistent if the thinking of the traditional person is. And concerning the last — we can consider the natural number theory as the theory of the decimal (or dyadic) notations — in this theory the addition and the multiplication are easier. Of course, even here we have a postulate that for each notation there is a corresponding natural number. It is a main postulate. The second — and I hope essentially the last for the foundations of Z^- — is the postulate on the existence of some unfeasible number relative to ‘+’.

The methods of reasoning must be such that each reasoning is to be feasible for the considered person — in particular, each reasoning justifying the application of some induction principle. So, we cannot always apply the principle ($I3'$) — because if for $F(m)$ and $F(n)$ the reasoning is feasible, for $F(m+n)$, according to $F(m)\&F(n) \supset F(m+n)$, it may be feasible

only relative to ‘+’. Sometimes nevertheless such reasonings are admissible — namely, if they don’t lead to a contradiction of an unfeasible object which is to be regarded as a feasible one (i.e. to be substituted for a variable corresponding to the feasible numbers). The proof of the induction step is always to be examined in this connection. It seems to me that everywhere it is necessary for my purpose of establishing the truth of the axioms of Z^- in the model M_Z (or axioms of ZF^- in the model N_Z). That condition is satisfied. (An example where it is not satisfied we obtain if we try to prove the existence of the last letter in every word — and that existence leads to a contradiction if regarded in connection with the set of all a_n with feasible n — or if we try to obtain the paradox of the heap here).

Sincerely yours,
A.S. Esenin-Volpin

[Signed autograph – in Brouwer]

1959-04-25

To KNAW — 25.IV.1959

Amsterdam

W. Sierpiński in Warsaw⁽²⁹⁾

When about the turn of the century the physiology of the real functions had drawn the general attention, a new vast field of new problems had arisen, the treatment of which required a radical deepening of epistemology, and to face questions like those concerning the rationale and scope of the axiom of choice and of the notion of continuity. The group of researchers thus stimulated has from the beginning experienced the powerful guidance of Sierpiński, whose mental power and originality obtained results that mark him as a Grandmaster, and whose inspiration gave birth to the Polish mathematical school, which found its expression in the renown journal *Fundamenta Mathematica*.

During his entire life so far Sierpiński has widened, deepened, renewed, and juvenated his realm of thoughts. Not long ago his researches carried

⁽²⁹⁾Brouwer’s text in support of Sierpiński’s foreign membership of the KNAW. The proposal was not universally applauded, see [Van Dalen 2005] p. 897 ff.

him into number theory¹; on this topic he opened with zeal a seminar.

Apart from articles in journals, counting more than six hundred, Sierpiński has written a number of comprehensive texts: *Leçons sur les nombres transfinis* (1928), *Hypothèse du continu* (1934), *Les ensembles projectifs et analytiques* (1950), *Algèbre des ensembles* (1951), *General topology* (1952). In particular in the *Algèbre des ensembles* light is shed, in addition to the treatment of the subject expressed in the title, on the mutual relation of almost all fields of research on mathematical-epistemological subjects that were laid open in the first half of the twentieth century, including those that were so far practiced by the Polish mathematical school.

With Chopin, Paderewski, and Madame Curie, Sierpiński belongs to the admirable persons that through the ages, Poland has given to the world.

[Carbon copy – in Brouwer]

1959-08-07

From B.N. Moyls — 7.VIII.1959

Vancouver

The University of British Columbia

Department of Mathematics

Dear Professor Brouwer:

We have heard that you might be interested in a sessional appointment at a university on this continent. Would you please let us know if this report is true. In particular, would you be interested in such a position in Canada.

We remember with pleasure your visit to Vancouver a few years ago. Please accept the best wishes of the members of the Department of Mathematics here.

Yours sincerely,
B.N. Moyls, Acting Head,
Department of Mathematics.

[Signed typescript – in Brouwer]

¹[Handwritten:] A Schinzel et W. Sierpiński, ‘Sur certaines hypothèses concernant les nombres premiers’, *Annales Analytiques* 4 (1958), p. 185–208; W. Sierpiński, ‘Sur les nombres premiers ayant des chiffres initiaux et finals donnés’, *Annales Analytiques* 5 (1959) p. 205–206.

1960-04-30

To KNAW — 30.IV.1960

Amsterdam

Improvised words I uttered at the extraordinary meeting of 30 April 1960, between the first and the second vote on the nomination of a foreign member. ⁽³⁰⁾

When the content of the memorandum of recommendation of Sierpínski for foreign member of the mathematics section was disputed by a member of this section in the extraordinary meeting of 26 March last, I have, in view of the late hour, referred, as sole refutation, to what I said about the significance of Sierpínski in the extraordinary meeting of 25 April 1959.

Now that however another member of the mathematics section has portrayed Sierpínski as a very old man, deep into his eighties, whose foreign membership of the section would probably be granted a span of perhaps only a year, ⁽³¹⁾ In order to avert the dreaded consequences, I am indeed obliged, notwithstanding the late hour, to ask for a few minutes in order to add to the content of the memorandum concerned, some elaborations, elaborations that should have been superfluous under the existing international opinion.

The direct and indirect influence of the work done by Sierpínski (born 1882) in the first decennia of this century. has at the time impregnated and enveloped the thinking of the practitioners of mathematics and epistemology, who have entered the field after him, to such an extent, that for these collaborators it is well-nigh impossible to take a sufficient distance from Sierpínski, in order to objectivize him critically, while those who nonetheless try this, may perhaps shed new light on themselves, but not on Sierpínski.

During his entire life so far Sierpínski has widened, deepened, renewed, and juvenated his realm of thoughts. Not long ago his researches carried him into number theory. His leadership in the field opened up by him has remained undisputed, however famous, perspicacious and original some of his collaborators may be. Among them I mention, without aiming at completeness, Borel, Baire, Lebesgue, Hausdorff, Young, Hobson, Alexandroff,

⁽³⁰⁾The topic of this letter is the nomination of Sierpínski as a foreign member of the KNAW. ⁽³¹⁾In a preliminary draft Brouwer wrote: “... portrayed as old gentleman who, had already for a long time become senile, who would probably be dead ‘anyway’ within a year’, I am indeed obliged to avert the threatening unfortunate consequences of this insulting qualification.”

Kuratowski, Tarski and Carnap. Among these Sierpinski shines as a star of the first magnitude in the epistemological firmament.

If in an academy that has considered Sierpinski, but nevertheless has not associated him with it, a later generation might become aware of this oversight, there would in my opinion nothing unjustified, if, following an illustrious example, this academy had Sierpinski's bust placed in its most characteristic room with the caption:

nothing was missing from his glory; he was missing from ours ⁽³²⁾

Finally I may point to article 8. I of the rules of the Academy which charges the section to see to it that also among the foreign members all relevant subjects are represented as far as possible; thus, if possible, to have also foreign members associated to it who represent the epistemological foundations of pure and applied mathematics.

[Typescript copy – in Brouwer]

1960-07-26

To Mrs. Whitehead — 26.VII.1960

London
7, The Park

Dear Mrs. Whitehead,

Through Miss Cartwright I learned the recent sudden decease of your husband whom I loved and highly appreciated. I'm sending my heartfelt condolences to you and your children. May the luster of Henry's memory give you fortitude to bear this blow of fate.

Bertus Brouwer

[Signed autograph, copy – in Brouwer]

⁽³²⁾ On the bust of Molière, placed, in 1778, in the Académie Française

1961-05-26**From L. Hardenberg — 26.V.1961****Amsterdam**
Advocaat en Procureur

Dear Sir, [Hooggeleerde Heer]

Estate Brouwer-de Holl.

Yesterday I had an extensive telephone conversation with notary Van der Ploeg about various aspects of this matter, in particular the conflicts with your stepdaughter. ⁽³³⁾

The latter has indeed announced several times, via her lawyer, that she is on her side not disinclined to cooperate in such a settlement that appears most desirable to the other legatees; but on the other hand she has added that she wants nonetheless to dispose of a certain sum.

Furthermore we still have the matter of the interpretation of the will. ⁽³⁴⁾

[.....]

If I don't hear otherwise, I'll be expecting you,

Sincerely yours, ⁽³⁵⁾

L. Hardenberg

[Signed typescript – in Brouwer]

1962-05-17**To KNAW, physics section — 17.V.1962****Blaricum** ⁽³⁶⁾

The attention that you paid to my golden anniversary on the 15th of this month gave me great pleasure. During this half century I have had the Section (and also the Academy as a whole) continuously at heart, with the

⁽³³⁾ A.L.E.(Louise) Peijpers ⁽³⁴⁾ To be discussed with notary Van der Ploeg.

⁽³⁵⁾ *Hoogachtend, – Uw dw.* ⁽³⁶⁾ Addressed: Bestuur der Afdeling Natuurkunde der Koninklijke Nederlandse Akademie van Wetenschappen, Amsterdam.

consequence that I can look back now on my membership as an over the years developing, lively and as yet unfinished adventure.

Thanking you with cordial feelings, I remain

Your retired fellow-member

(signed) L.E.J. Brouwer

[Signed autograph, copy – in Brouwer]

1965-02-18

To Mrs. J.A.L. van Lakwijk-Najoan — 18.II.1965 Blaricum ⁽³⁷⁾

Dear Johanna ⁽³⁸⁾,

Concerning our future banking and Giro ⁽³⁹⁾ account numbers, the only line of conduct which seems to offer me security of fortifying in a tangible way my precarious chances of survival, is that all banking and Giro account numbers connected with pharmacy Brouwer-de Holl will be closed and replaced by others. (Apart from the account of Brouwer-de Holl you may perhaps have requested also other banking and Giro account numbers for other accounts you manage.)

Every other line of conduct perpetuates the situation in which I can die any moment, *suddenly* without having been able to take any measure for further winding up the estate Brouwer-de Holl, for the recovery of my good name in international science, or even for my funeral.

By the way, the tangible strengthening of my chances of survival by the mentioned line of conduct is of such importance for my co-heirs of the Brouwer-de Holl estate, that I consider it completely justified to these co-heirs that I offer f 10,000.- for the acceptance of the mentioned line of conduct and your cooperation to implement energetically the mentioned line of con-

⁽³⁷⁾ Addressed: Comeniusstraat 195 IV, Amsterdam. The letter deals with the sale of the pharmacy to Mrs. Van Lakwijk. The pharmacy had played an important role in the lives of Brouwer and his wife, Lize. He was very much attached to it, and one can see that he postponed parting with it till almost the last moment. ⁽³⁸⁾ English in original.

⁽³⁹⁾ Postal banking system.

duct, which hence amounts to a further decrease of the sales price of the business by this amount.

With cordial greetings

affectionately yours ⁽⁴⁰⁾

L.E.J. Brouwer

[Signed typescript – in Lakwijk]

1966-07-06

From J. Myhill — 6.VII.1966

Buffalo (New York)

Dear Professor Brouwer,

I have been interested for a year now in the arguments you use in your later papers to provide counter-examples to classical theorems. I have been trying to formalize them. While I now have several formalisms ⁽⁴¹⁾ in which I believe I can obtain your results, the methods are not quite the same as yours; I have difficulties in achieving this.

I give you one example which I would very much like you to comment on; the proof that if it is impossible for a real number α to be 0, then one cannot necessarily conclude that α is separated from 0, i.e. one cannot necessarily exhibit a rational number between α and 0.

In your version, if I understand it correctly, the proof runs as follows. For each real number $\alpha \in [0, 1]$, the real number $\phi(\alpha)$ is defined as follows: as long as the creating subject has not judged the proposition ‘ α is rational’, let $[\phi(\alpha)](n) = \frac{1}{2^n}$; if at the k th step (after k choices for α) he decides that α is rational or irrational, let $[\phi(\alpha)](k+q) = \frac{1}{2^k}$ for all q . Then $\phi(\alpha)$ cannot be 0, for if it were, α could be neither rational nor not rational. All this is quite clear. The difficulty lies in the second half of the proof.

Here we have to show that we cannot find, for every α in $[0, 1]$, a number β (rational) separating $\phi(\alpha)$ from 0. If we could, we could find a number n such that the proposition ‘ α is rational’ would be judged after n choices for α . Now in my formalism this is immediately contradictory, because it implies that the species of all real numbers in $[0, 1]$ would be split up into the rational and the irrationals, q.e.d.

⁽⁴⁰⁾English in original. ⁽⁴¹⁾See [Myhill 1966, Myhill 1968].

However you proceed differently, reasoning as follows: if for every α in $[0, 1]$, we could find such an n , then by the fan theorem there would be a bound on the n 's, say n_0 . Now take a real number which up to the n_0 stage is completely unrestricted (except to belong to $[0, 1]$); it is absurd that we could decide at the n_0 stage whether it is rational or not.

It is the application of the fan theorem which I question here. As I understood it, the fan theorem applies only to those cases in which to every free choice sequence α belonging to a finitary spread F we can assign a natural number n_α *using only the values* $\alpha(0), \alpha(1), \alpha(2) \dots$. The proof of the fan theorem, it seems to me, depends essentially on this condition (which is met in the usual mathematical cases: for instance in the theorem, that I used above, that $[0, 1]$ has no detachable subspecies.) But it is not met in the situation to which you apply the fan-theorem here, because in computing the n from the α one is allowed to use also the values of $\phi(\alpha)$, which may depend not only on α but also on what restrictions have been placed on α , and on what properties of $\phi(\alpha)$ the creating subject may have inferred from these.

Any comments you may have on these and related questions, or any reprints since 1929, either mathematical or philosophical, would be very much appreciated.

Very sincerely
John Myhill

P.S. My return address: Department of Mathematics, State University of New York, Buffalo, N.Y.

[Brouwer's note on the envelope:]

Suggereert de mogelijkheid van een wijziging in de argumentatie van 'Points and Spaces' ⁽⁴²⁾

[Signed autograph – in Brouwer]

⁽⁴²⁾Suggests the possibility of a change in the argument of 'Points and Spaces'.