



Chapter 22

Popper's Correspondence with Luitzen Egbertus Jan Brouwer

Karl R. Popper and Luitzen E. J. Brouwer

Abstract Luitzen Egbertus Jan Brouwer (1881–1966) was a Dutch mathematician well-known for his work in topology and his philosophy and development of “intuitionism” as a novel form of constructive mathematics. (For further information on Brouwer’s life and work cf. the biography by van Dalen, 2012.) Brouwer presented Popper’s papers “On the Theory of Deduction I, II” (Popper, 1948a,c) and “Functional Logic without Axioms or Primitive Rules of Inference” (Popper, 1947d) to the Royal Netherlands Academy of Sciences. They are reproduced in Chapters 4, 5 and 6 of this volume. In these papers Popper proves the non-definability of various negations weaker than intuitionistic negation. Brouwer reacts very positively to Popper’s articles on logic, in particular to his duality constructions and his novel definition of intuitionistic negation. His high estimation of Popper’s work on logic also shows in a letter that Brouwer wrote to Harold Jeffreys on the occasion of Popper’s application for an academic post.

Editorial notes: The letters from Brouwer to Popper are from KPS Box 280, Folder 8. The letter from Popper to Brouwer is from KPS Box 37, Folder 11. Each letter exists as a handwritten draft and as a typescript. The letters from and to Jeffreys are quoted from van Dalen (2011). They can be found in the Brouwer archive at the Philosophy Department of Utrecht University.

22.1 Brouwer to Popper, 27 August 1947

Typescript with letterhead, 1p.

Prof. Dr. L. E. J. Brouwer
Blaricum, Torenlaan 70
August 27th, 1947

Dear Popper,

Thank you very much for your sending Hayek's beautiful book^a to me. I think that a wonderfully free spirit must be abroad in your surroundings to allow the germination (of) such works. My next stay in England will last the greater part of October. So I am looking forward to seeing you again within a few weeks. By this same post I send you a reprint bearing upon one of our subjects of conversation in July.

Yours very truly
LEJ Brouwer

22.2 Brouwer to Popper, 25 October 1947

Postcard, handwritten, 1p.

D. K. R. Popper
London School of Economics
Houghton street (Aldwych), London WC2
Cambridge, October 25, 1947

Dear Popper,

Today your paper is presented to the Academy in Amsterdam. The Lost Property Office answered that it regrets that its inquiry had no success. Next Thursday I shall be again in London. Probably I shall look in at Houghton street at 1 o' clock to see if I can have lunch with you there. I hope that you are all right.

With kind regards,
yours,
LEJ Brouwer

22.3 Brouwer to Popper, n.d.

About one third of a letter size sheet, handwritten, 1p.

Dear Popper,

So sorry that I could not manage to catch the train of 10.00 on Saturday! Moreover I became indisposed, and stayed in bed over Sunday. I hope that before long I shall have an occasion of spending more time in London, and th(en?) also seeing your home. Please recommend me to Mrs. Popper.

Cordially yours
LEJ Brouwer

^a Popper probably refers to Hayek (1944).

22.4 Popper to Brouwer, 18 November 1947

Typescript with handwritten corrections, 2p. There also exists a probably earlier handwritten draft, 5p.

The London School of Economics
Houghton street, Aldwych, London W.C.2

November 18th, 1947.

Dear Professor Brouwer,

I hope you are not disgusted by the sight of a new MS from me. If you think it too much to communicate two papers by my humble self in such quick succession, then, please, don't do it, and let me have the MS back as soon as possible.

The present paper is, if I may say so, the most interesting I have so far written, and mainly devoted to an analysis of intuitionist negation. Among the results are: The superiority of Heyting's calculus over Johansson's (and Kolmogoroff's) is established on purely formal grounds, by proving that Johansson's negation is not definable (because not sufficiently characterized) while Heyting's is definable. Another result is the one mentioned in my last letter to you. A third result is that it is possible to construct a negation (and, indeed, a whole calculus) which is a dual of Heyting's; in this calculus, the negation of a can be interpreted as " a is not necessary (or uncertain)", which turns out to be a dual of " a is impossible". In the dual calculus, the law of the excluded middle is valid, that of contradiction is not. I do not think that this dual calculus is in itself very important, but its existence may remove certain misgivings about the lack of symmetry in the logic of intuitionism. For it now turns out that there is a *formal* symmetry, and that it is merely the comparative irrelevance of the dual kind of negation for the problems of mathematical demonstration which makes intuitionism emphasize impossibility (as opposed to non-necessity).

It is also proved, in my paper, that intuitionist negation and its dual can co-exist without interference, and that a language may contain both without containing classical negation.

The proofs themselves are all intuitionistically valid.

Of course, what I am saying here is nowhere stated in the paper; but it is implicit in the proofs sketched in the paper.

For all these reasons, I very much hope that you may do me and the paper the honour of communicating it, But if you feel that you should rather not, I shall *certainly* not take it amiss.

If it is too long, it can easily be divided into two roughly equal parts, at the end of section III (p. 9). In this case, the first three sections may be published under the title "On the General Theory of Derivation" and the remaining sections under the title "On the Definitions of Classical and Intuitionist Negation".

I hope you are well. My cold is still very bad – I am coughing incessantly.

With many thanks and the kindest regards,
Yours ever,

22.5 Brouwer to Popper, 10 December 1947

Postcard, handwritten, 1p.

D. K. R. Popper
The London School of Economics
Houghton Street, Aldwych, London WC2

Waiting-room of Liverpool Street station, December 10th, 1947.

My dear Popper,

Your duality construction and your new definition of intuitionistic negation have delighted me, and I have presented your last paper on November 29th. As you foresaw, it was stated at the printing office, that your manuscript had to be split up on account of its size. I received a copy of the proof sheet, which I sent back with an indication of the two expanded titles you describe in your last letter. Please return your own proof sheet with the same indication. In my opinion the impression of your paper wins by this division. – I am travelling to Cambridge, but have no time to stop in London this time. Probably I shall leave Cambridge on the 15th (or 16th). I very much hope to stay with you on my return journey, as was agreed upon. Please remember me to Mrs. Popper.

Kindest regards
yours
LEJ Brouwer

22.6 Brouwer to Popper, 4 January 1948

Typescript with letterhead, 1p.

Prof. Dr. L. E. J. Brouwer
Blaricum, Torenlaan 72

January 4, 1948

Dear Popper,

I enquired for your reprints. The matter is that all mathematical communications to the Amsterdam Academy, after appearing in the proceedings, are published a second time in the mathematical periodical “*Indagationes Mathematicae*”. It is only after this second publication that the reprints are finished off and sent to the authors. Your October reprints will be dispatched within a couple of weeks and, according to your suggestion, in several separate parcels.

As to your November communication, your type \dashv (oblique) is lacking in the printing office, but a type \vdash (upright) is available. Consequently the compositor begs your permission to replace the former symbol by the latter. The compositor says that the symbol \dashv occurs so often in your November manuscript, that it takes too much time and pains, to manufacture it poorly and defectively by hand one by one in so great number. With regard to your October paper there was no objection against the

oblique symbol, because there you used it only a few times. The difference between the oblique and the upright symbol seems very slight to me, so that I hope you can comply with the compositor's wishes.

So long! Remember me to your wife. Prosit 1948 to you both.

Kindest regards
Yours LEJ Brouwer

22.7 Brouwer to Popper, 6 January 1948

Typescript with letterhead, 1p.

Prof. Dr. L. E. J. Brouwer
Blaricum, Torenlaan 70
January 6, 1948

My dear Popper,

The following in addition and correction to my letter of January 4th:

One of these days you will receive, or perhaps you have already received, new proof sheets of your November paper. In these sheets your symbol \perp , remaining oblique, has a still unsatisfactory and, moreover, inconstant form. In many places it is not even connected. Nevertheless this is the utmost of adequacy the compositor can attain for the oblique type. If you reject it, the only solution would be to change over to the upright type. But this would probably take some time and delay the publication of your paper by one month. So there would also be a ground to accept the reproduction of your symbol in its present state.

Cordially yours
LEJ Brouwer

22.8 Brouwer to Popper, 19 January 1948

Typescript with letterhead, 1p.

Prof. Dr. L. E. J. Brouwer
Blaricum, Torenlaan 72
January 19, 1948

My dear Popper,

One of these days you will receive your new proof sheets with the upright symbol \perp . It seems to me that at the first appearance of this symbol in your text you should make an insertion referring to the different shape of the symbol denoting the same property in your preceding article P_3 ^b.

^b Popper (1947d).

If you wish to have an ultimate proof controlled and revised by me, then please send your corrected sheets directly to me.

The more I read and think your paper over, the more I get impressed by its importance.

Cordially yours
LEJ Brouwer

22.9 Brouwer to Jeffreys, 4 May 1948

Letter quoted from van Dalen (2011, p. 2378).

Dear Professor Jeffreys,

You asked my opinion on Dr. K. R. Popper. I consider him one of the leading logicians of the present time, and one of the keenest thinkers in the philosophy of both exact and humanist science.

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

22.10 Jeffreys to Brouwer, 7 May 1948

Letter quoted from van Dalen (2011, p. 2380).

Dear Brouwer,

I saw the Vice Chancellor yesterday and he said he would like a fuller statement about Popper. Some of the other candidates have sent in several pages of particulars. May I trouble you for some more after all? I am sorry to trouble you. The electors will probably want to know approximate age, what posts he has been in, or principal contributions to knowledge; and of course especially indications of how outstanding the leading ones are. Perhaps 1 to 2 pages.

Looking forward to seeing you again on Sunday!

Yours sincerely
Harold Jeffreys

22.11 Brouwer to Popper, 7 May 1948

Postcard (Gateway & Chapel. King's College. Cambridge), handwritten, 1p.

Cambridge, Gresham Road 3
D. K. R. Popper
The London School of Economics

Aldwych, Houghton Street, London WC2

May 7, 1948

My dear Popper

When your telegram on your reprints arrived in Holland, I was already in Cambridge, so that it reached me with a considerable delay. But *then* I sent a very urgent telegram to the publisher

North Holland Publishing Company
Nieuwezijds Voorburgwal 68, Amsterdam^c

and I hope that the reprints are in your possession now. If not, then wire also yourself please. Remember me to Mrs. Popper. I hope we shall soon meet.

Yours Brouwer

22.12 Brouwer to Jeffreys, 11 May 1948

Letter quoted from van Dalen (2011, p. 2381f.).

Dear Professor Jeffreys,

You asked for a more detailed exposition of Popper's merits. I am sorry I have not the data to give an elaborate testimonial.

Popper's main contributions to knowledge lie in the following three fields:

- (i) Philosophy of natural science, to which belongs his book "Logik der Forschung" which appeared about 1935, and which is just now being translated into English. It is not only synoptic and explanatory, but also in some ways a practical manual for experimental scientists.
- (ii) Moral, social and political science, to which belongs his book "The open society and its enemies" (Vol.1: The spell of Plato; Vol.2: The high tide of prophecy: Hegel and Marx) which appeared in 1944, and was recently reprinted; further his series of articles on "the poverty of historicism" which probably led to his appointment at the London School of Economics, and several occasional small papers among which is a very remarkable one on "Utopia and violence" which appeared in the Hibbert Journal of January 1948.
- (iii) Mathematical logic, where Popper plays a prominent part in the complete renewal this science is undergoing just now. In particular his papers on derivation and negation which appeared about the end of 1947, I think will be consulted and quoted during a generation.

You also asked for personal data of a formal character. To get these I rang up Popper himself, and here they are:

Born in Vienna, July 28, 1902

Emigrated to England 1936

Senior lecturer in philosophy in New Zealand from 1937 to 1945

^c Cf. Andriess (2008).

Reader in logic and scientific method at the London School of Economics
since 1945
British subject from 1945

Degrees: Ph.D Vienna 1927
M.A. New Zealand 1938
D.Litt London 1948

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

22.13 Brouwer to Popper, 29 November 1951

Handwritten, 2p.

Prof. Dr. L. E. J. Brouwer
Cambridge, Gresham Road 3, tel. 54538
(To Mrs. M. Ogilay)
November 29th, 1951

My dear Popper,

Returning next Monday or Tuesday from a five weeks stay in Cambridge I should like to pass one night in London, and if possible seize this possibility to see you. Braithwaite told me that you have removed from East Barnet. I hope your new dwelling is less outlying than the house you left, and is pleasant and comfortable.

In London I should like to put up at the hotel of the Society for visiting scientists, where you took me one day to have lunch with Schrödinger. I should also like to become a member of the Society, and stay in the same hotel during the first half of May 1952, when I shall have to deliver the Shearman lectures.

But I have completely forgotten the address so that I venture to request you, kindly to arrange this matter for me, i.e. to propose me as a member to the Society, to get me a room in the hotel for next Monday or Tuesday, and to let me know the address and the telephone number of the house, that I may announce day and hour of my arrival in good time there.

Tomorrow I shall have dinner with Von Wright. I wonder whether again a foreigner will be appointed as his successor here.

Thanking you in anticipation, sending hearty greetings to you and your wife, awaiting your answer as soon as possible, and very much looking forward to seeing you, I remain

Yours LEJ Brouwer

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