BOOK REVIEW

Constance Reid: *Hilbert*, Springer Verlag, N.Y., 1970

The history of mathematics, like most fields not supported by Federal Funds, is a disaster area.

The few practitioners can be roughly divided into three classes. At the upper end, we find the Great Man — two or three of them living at a given time — who, with commendable *Gründlichkeit*, sets out at age eighteen to write the History from its beginning. Unfortunately, he dies at age 92 after completing the Egyptians, and leaving only a rough draft on the Cretans. Throughout his life, he remained blissfully unaware that anything that happened before Leibniz is not history, but paleontology.

In the middle we find the Pedagogue modestly satisfied with producing a solid textbook and occasionally correcting one crass prejudice of many that are now plaguing the scientific masses. What a distance from the outpour and quality of historical studies on Shakespeare!

At the lower end we meet the Amateur. Gliding with harebrained frivolity across places and periods, he (or she) comes up with a concoction of anecdotes, sensationalism, and half-truths, avidly read by students and high school teachers, and invariably achieving the crowning recognition of the paperback edition.

In bygone days, chivalry would have prevented us from classifying Mrs. Reid; liberated by recent social changes, we can treat her work like that of any colleague. Although she squarely belongs at the lower end, we hasten to add that her book contains no half-truths whatsoever. It is factually impeccable and intellectually a fiasco.

Many of us remember Old Europe and its *mitteleuropäische Kultur*. The sleek blue express trains would pull out from Milan and Rome, Venice and Florence, bearing the tag *Mitropa*, carrying away haughty ladies with guttural accents, who would get busy on their manuscripts as soon as the train set in motion. Their heavenly destinations, Vienna and Berlin, Prague and Stockholm, were pictured as the meccas of exquisite artistic refinement and unfathomable learning, a vision shared with proud superiority by the natives of *Mitropa*. To them, Americans were blundering infants, Italians frivolous fakers, Englishmen eccentric gentlemen who cultivated Greek or mathematics as a hobby, everyone else a barbarian. Only the French could stand up to them, a painful thorn in the thick layers of their cultural fat, a feared enemy richly endowed with the deadly weapons of wit and elegance.

It is hard to believe that this very same world of stifling *Kultur* and deadening prejudice (now largely wiped out) produced a majority of the great minds of the West, among them David Hilbert.

If Mrs. Reid were a historian, she might have begun her biography with a description of this background and its interaction with Hilbert's intellectual development. Instead, she begins it with an excursion into genetic mythology. Following the equiv-

ocal party line of those who arrogantly believe that
human genetic behavior can be inferred—by an irre-
sponsible extrapolation—from our knowledge of the
genetics of fruitflies, she conscientiously lists
ancestors and their trades, in a vain search for the
forebodings of mathematical talent.

What if she succeeded? Would her findings help us
understand the *person* David Hilbert? She ought to
read what a serious biographer writes: "To show that
...freedom alone accounts for the whole person; to
display freedom in its struggle with fatality, crushed
at first by the inevitable but then overcoming it;
to show that genius is not given at the start, but
the brilliant invention of someone who is looking
for a way out; to reconstruct the original choice
of a meaning of the universe, a style, a pattern of
thought, all the way to tastes and mannerisms...
[this is the purpose of biography]".

We leave it to the reader to decide where Mrs.
Reid's book belongs, judged by these standards. Ap-
parently, she is under the illusion that a man's bio-
graphy consists of a collection of facts, chrono-
logically strung together and presented in passable
English. And facts she dishes out aplenty: from the
obvious to the intimate, from the irrelevant to the
crucial, all the way to the minutest detail ("He was
fascinated by the *Pferdespulwurm"*) and to the anec-
dote-heard-a-thousand-times.

But an inert collection of facts is not a biogra-
phy, and what little one can learn from Mrs. Reid's
presentation has to be inferred by the reader, leav-
ing him—or her—more often than not, in want of ex-
planation. What, for example, are we to make of Hil-
bert's relationship with Käthe Kollwitz? Was Franz

Hilbert mentally retarded, or was his behavior a re-
sult of his father's miseducation? Why and how did
the depression come about? (Such downturns do not
come out of fatigue alone.) When and, most impor-
tant, *how* did Hilbert's intellectual activity begin
to fade? (It seems this happened fairly early, but
Mrs. Reid, awed by the holiness of her subject, does
not give particulars.) What are the details of Hil-
bert's quarrel with Husserl, which led to the phi-
losopher's transfer to Freiburg? (Mrs. Reid with-
holds this last detail. It seems that Hilbert had
no taste for philosophers – see e.g., the remarks on
Kant –. Hans Rademacher told this reviewer that,
after Heidegger once lectured in Göttingen, Hilbert
would gleefully repeat to everyone the phrase *"Das
Nichts nichtet die Nichtung"*).

   Mrs. Reid wisely avoids all pretense of scientific
biography; what little mathematics she describes is
superficial. Exceptions in bad taste are the plati-
tudes on invariant theory in Chapter V, and the slurs
on Gordan and Study. (It is time someone wrote an
accurate biography of invariant theory, explaining
the ambiguous sentence "Hilbert killed invariant
theory", now repeated with ovine credulity by every-
one.) She does, however, attempt some sort of in-
tellectual biography, and here the main questions
again remain unanswered. Hilbert's habit of "Nos-
trification", as Richard Courant used to call it,
should be described and understood, bad trait that
it is. Mrs. Reid does not even say in so many words
that Hilbert's "Foundations of Geometry" is partly
cribbed from Kohn, Schur and Wiener. Hilbert's er-
rors – as found and corrected by Olga Taussky-Todd –
remain in the relam of curiosity; they might reveal

so much. And the in-depth story of his most stunning discoveries — the proof of Waring's conjecture, for instance — is not told. By what process of elimination, did Hilbert arrive at the proof? How did his mind work? For contrast, the reader might glance at Littlewood's A *Mathematician's Miscellany* where in a few pages he will learn what makes Littlewood tick. Or he might compare Mrs. Reid's book with some of our best intellectual biographies, such as Dilthey's *Schleiermacher,* Sartre's *Flaubert* or Croce's *Vico.*

We could go on indefinitely asking questions of this kind, which only bring out Mrs. Reid's inadequacies. It is not her fault if the first full-length biography of our greatest mathematician had to be written by someone who hardly knows how to differentiate and integrate, and who is not a trained historian to boot. It is instead a sad reflection on our antiintellectual age, which discourages scholarship and the spirit of synthesis in favor of the ephemeral novlety of compartmentalized research.

May Mrs. Reid's effort at least stimulate a reform of our mathematical values, and lead to an authentic concept of mathematical history.

Note: I have partially quoted passages from J. Marías and J. P. Sartre, freely translated by myself.

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