

Towards an Interconnected History of Semantics



*Troy Kaighin Astarte
Newcastle University
t.astarte@ncl.ac.uk*

Why “interconnected”?

- ❖ Split in styles—very different, developed in different places?
- ❖ Contrasting: good for technical consideration
- ❖ Interactions and influences *interesting*
- ❖ Work in progress...

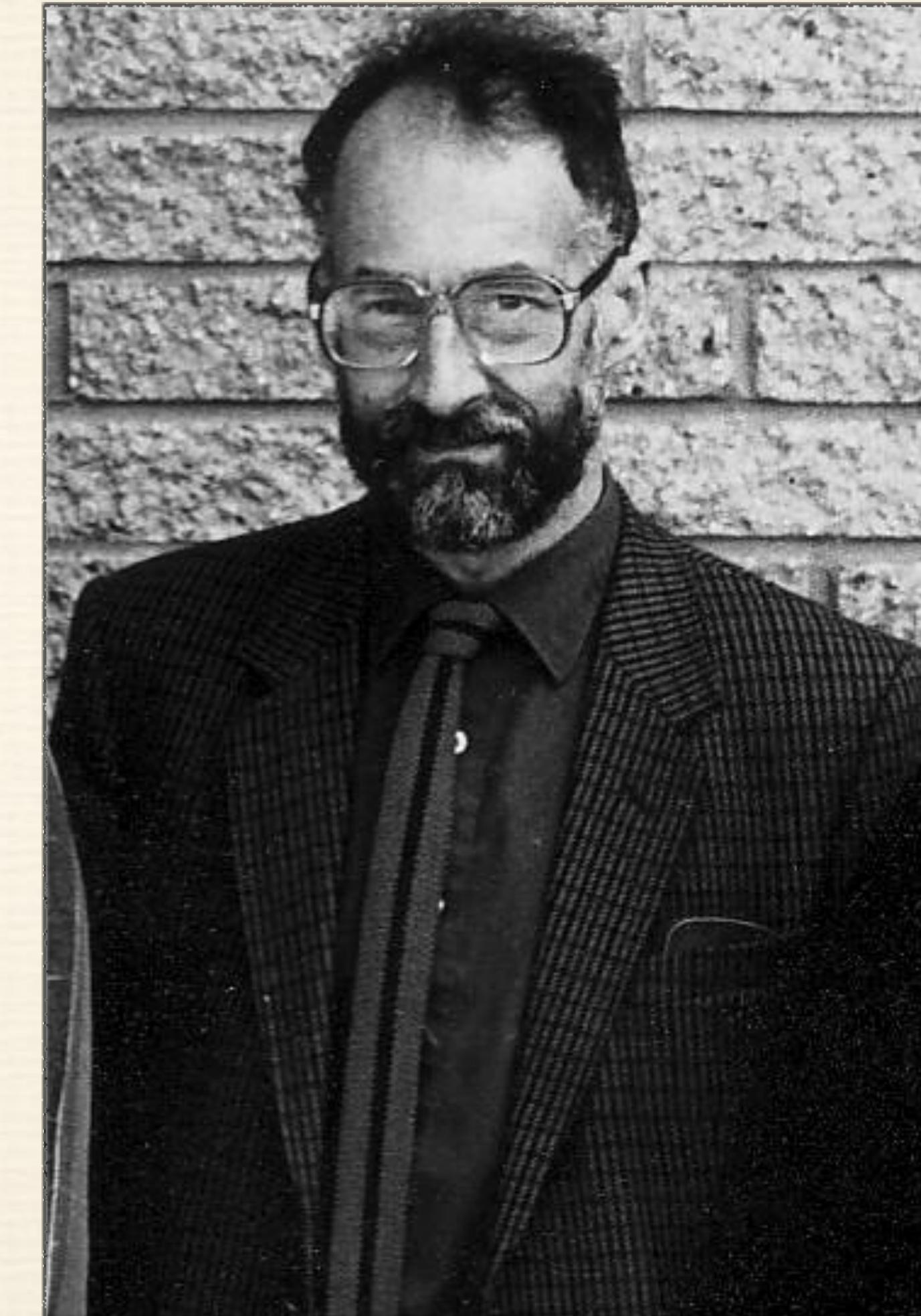
Mervyn Pragnell's “kirk”



- ❖ Throughout '60s
- ❖ Burstall met Pragnell in Foyle's bookshop in London
- ❖ Pragnell's group met in Birkbeck College
- ❖ Present: Burstall ...

Mervyn Pragnell's “kirk”

- ❖ ... Landin, Milner, Iliffe, Coulouris
- ❖ Somewhat mystical readings
- ❖ Influence especially on PJL, RMB



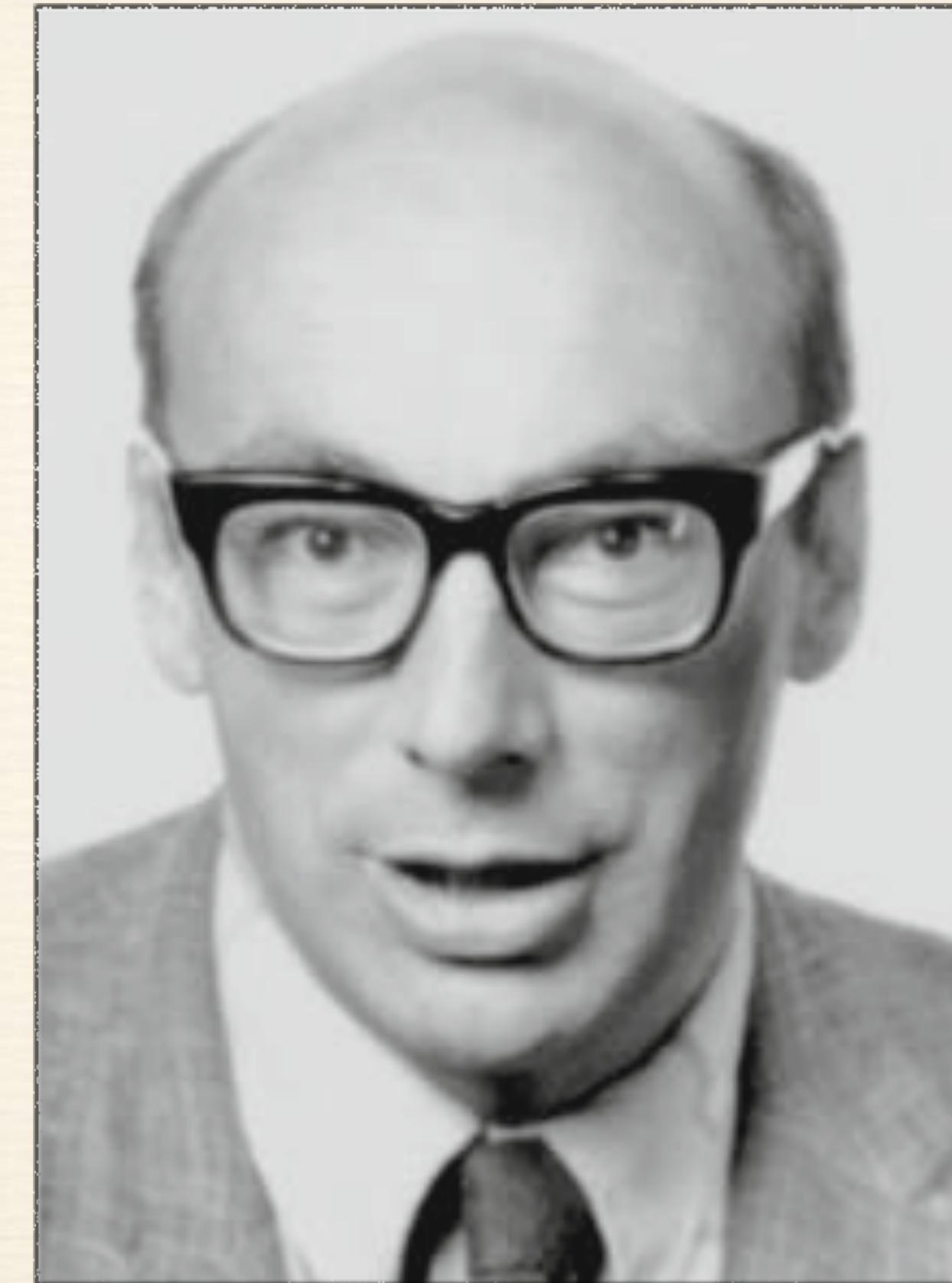
Strachey's consulting business

- ❖ 1960–1964
- ❖ London, consulting on
(e.g.) Orion autocode
- ❖ CPL during this period



Strachey's consulting business

- ❖ Employed Landin,
temporarily also Burstall
- ❖ Early ideas for denotational
semantics formed



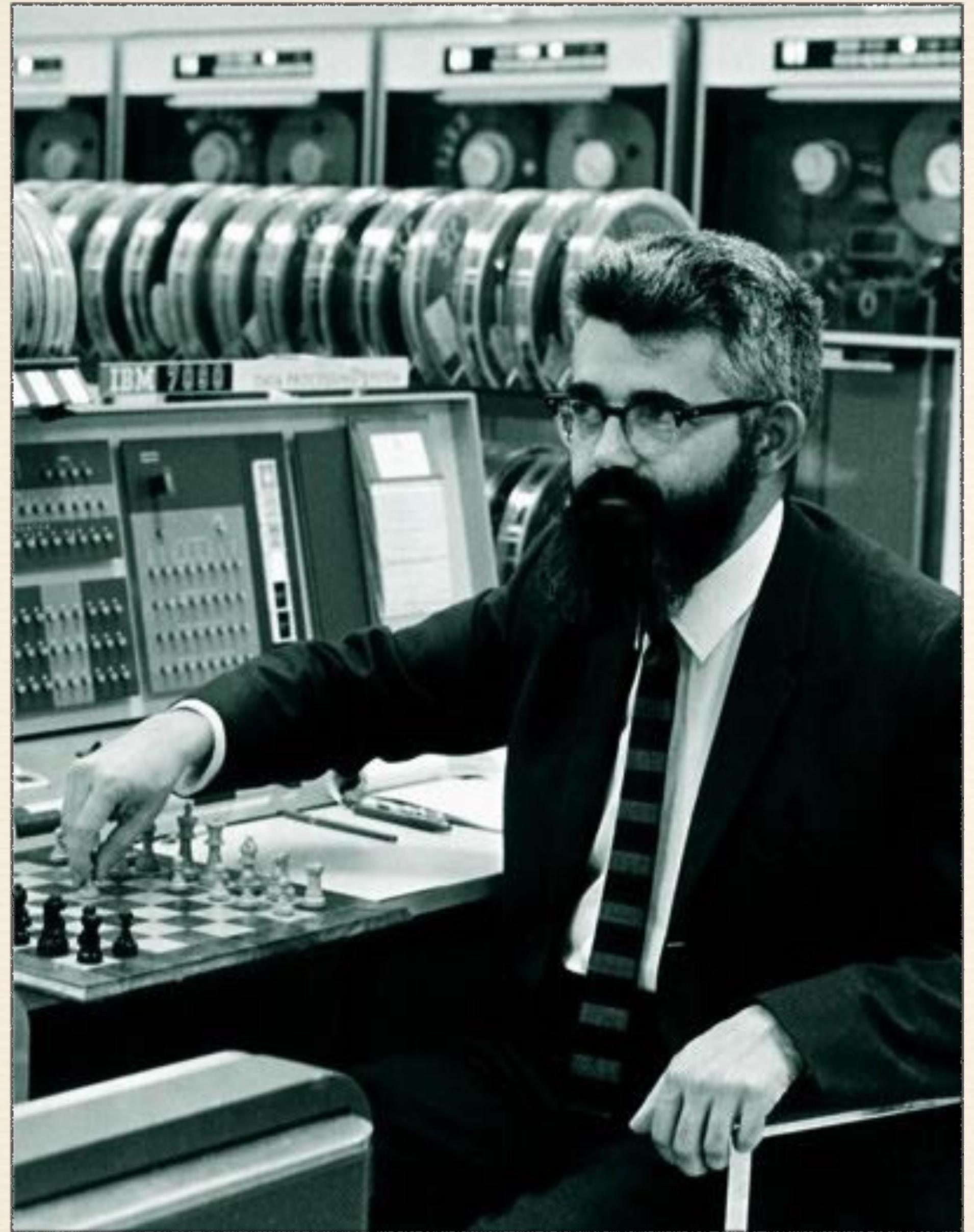
Formal Language Description Languages



- ❖ Held in September 1964 in Baden-bei-Wien
- ❖ IFIP TC2 organised, IBM sponsored, largely Zemanek
- ❖ Vienna Lab, Strachey, McCarthy, van Wijngaarden, Čulík, Landin, Elgot, Caracciolo di Forino, Böhm...
- ❖ Very influential! But fairly well-known

MTOC at YTH

- ❖ 27–30 November 1967
- ❖ Not very well known!
- ❖ Burstall, Floyd, Jones, King, Manna, McCarthy, Paterson
- ❖ Schemas from Paterson
- ❖ Structural induction from Burstall



IFIP WG 2.2 meetings

- ❖ Roughly one or two per year, starting September 1967
- ❖ Meetings of people interested in formal semantics: Strachey, Hoare, McCarthy, Vienna, Scott, van Wijngaarden
- ❖ Influences... and also arguments



IFIP WG 2.2 meetings



- ❖ Important meeting 21th–25th April 1969 in Vienna
- ❖ Hoare presented axiomatic method
- ❖ Hoare: “difficult things are difficult to describe”
- ❖ Scott “found Strachey’s approach the most sympathetic”

Vienna switch

- ❖ Had produced operational (VDL) description of PL/I in 1966, 68, 69
- ❖ Not terribly well received!





ULD III v III

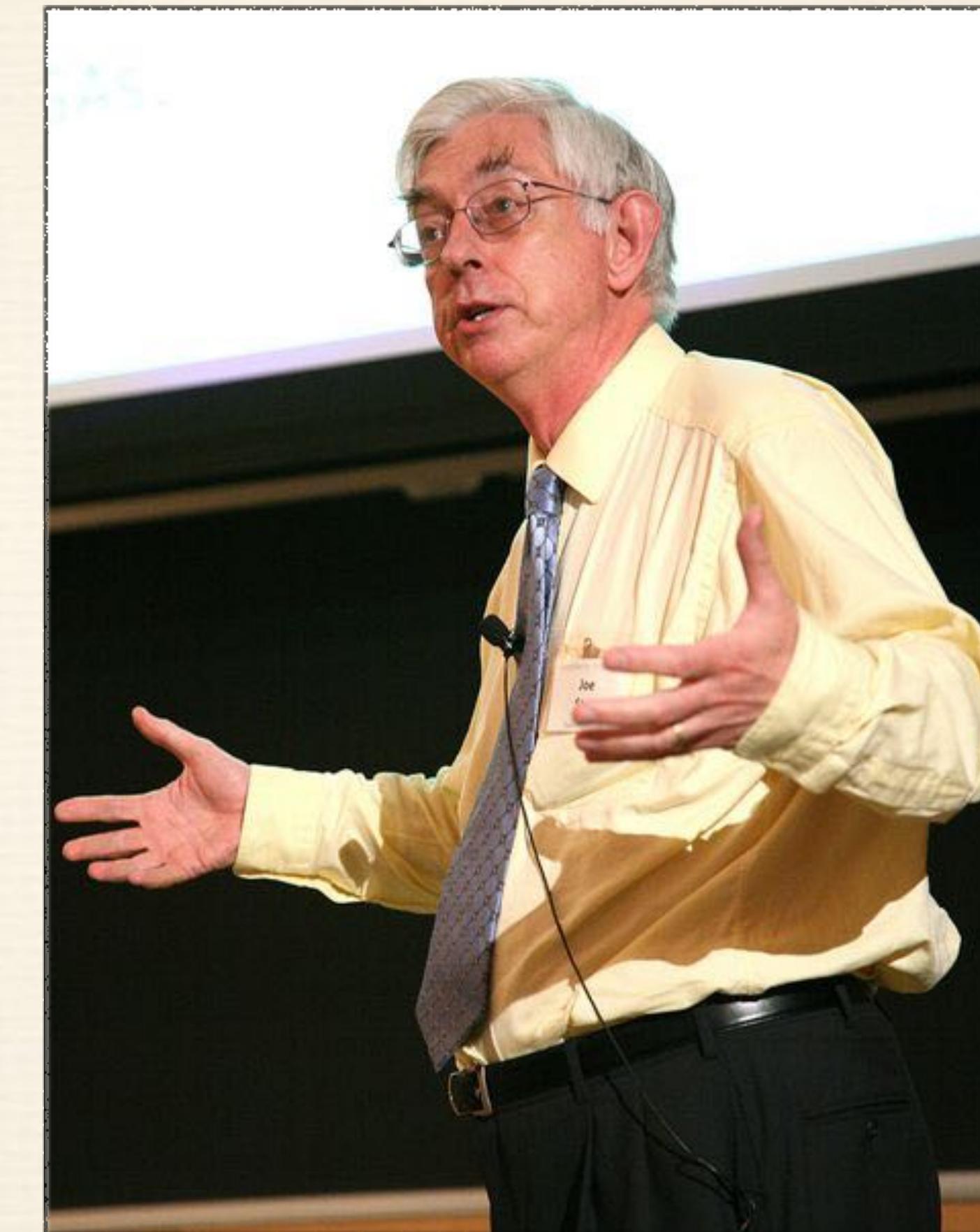
Vienna switch



- ❖ Jones heard Strachey lecture
- ❖ Bekić been with PJL in London
- ❖ Bekić, Lucas, Walk at WG 2.2
- ❖ Denotational approach adopted!

Copenhagen Winter School

- ❖ January 22nd–February 2nd 1979
- ❖ Bjørner unifying jump approaches
- ❖ Stoy: Exits “out of the woodwork”
- ❖ Burstall back to semantics
- ❖ Plotkin moving away from power domains



Conclusions

- ❖ Interactions not always influential!
- ❖ Nevertheless, importance of *context*
- ❖ Can highlight overlooked figures, e.g. Burstell
- ❖ Thesis preview

Towards an Interconnected History of Semantics



*Troy Kaighin Astarte
Newcastle University
t.astarte@ncl.ac.uk*