Some personal recollections

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A light contribution, as probably appropriate at the end of a long day

I first met John (thanks to Dimitri) in 1985

I had just resumed my graduate studies at SISSA after a year of military service, spending 1985-6 at Geneva U. and CERN with two Italian fellowships

He became my Ph.D. advisor and our collaboration continued while I was postdoc in Berkeley (86-89) and then fellow and junior staff at CERN (89-91), after which we followed different research paths (but we collaborated again for a review article on Higgs physics written with Ridolfi in 2007).

The encounter with John was crucial to broaden my scientific horizons and to introduce me into an international research environment

Our collaboration was objectively quite fruitful: the impact of the 16 papers we co-authored exceeds by far our individual averages

In line with his personality, the advice of John extended quite beyond the field of physics

Some papers with John that are dear to my heart

Radiative corrections to the masses of supersymmetric Higgs bosons

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The lightest neutral Higgs boson in the minimal supersymmetric extension of the standard model has a tree-level mass less than that of the Z^0. We calculate radiative corrections to its mass and to that of the heavier *CP*-even neutral Higgs boson. We find large corrections that increase with the top quark and squark masses, and vary with the ratio of vacuum expectation values v_2/v_1. These radiative corrections can be as large as O(100) GeV, and have the effect of (i) invalidating lower bounds on v_2/v_1 inferred from unsuccessful Higgs searches at LEP I, (ii) in many cases, increasing the mass of the lighter *CP*-even Higgs boson beyond m_Z, (iii) often, increasing the mass of the heavier *CP*-even Higgs boson beyond the LEP reach, into a range more accessible to the LHC or SSC.

On radiative corrections to supersymmetric Higgs boson masses and their implications for LEP searches

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The context of those papers

Beginning of LEP-1, limits on s-particles still very mild
Thinking also of the LHC because of Aachen workshop

MSSM was benchmark SUSY model with its tree-level prediction $M_h < M_Z$, it was believed at that time that LEP could perform a decisive test of its Higgs sector

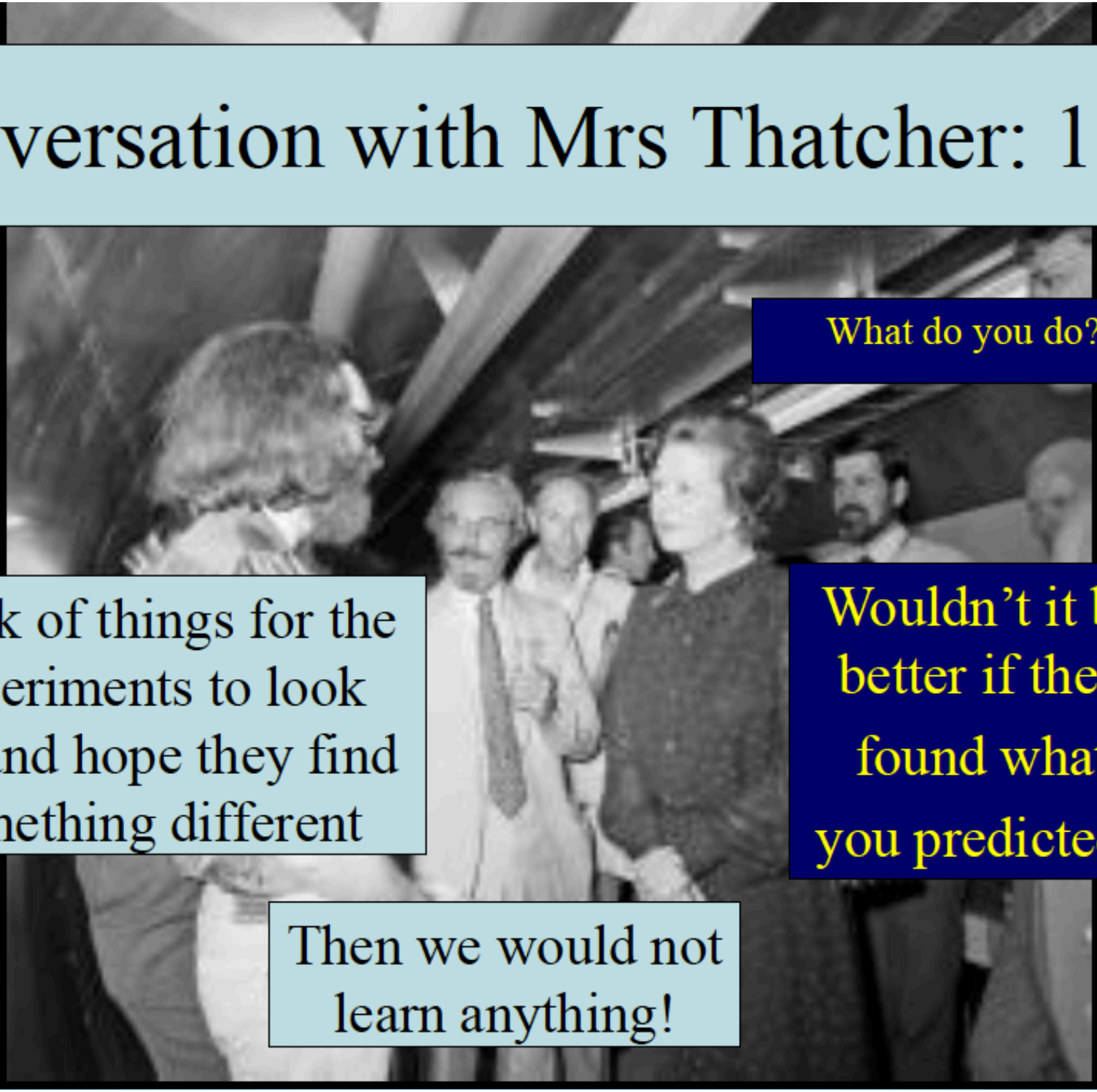
Found large radiative corrections controlled by the large top Yukawa coupling, for example in the simplest case

$$\Delta m_h^2 \sim \frac{3\, g^2\, m_t^4}{16\pi^2\, m_W^2} \log \frac{m_{\tilde{t}_1}^2\, m_{\tilde{t}_2}^2}{m_t^4}$$

(results also by Haber-Hempfling and Okada-Yamaguchi-Yanagida)

This made the MSSM survive LEP (with some tuning) and offered it a last chance at the LHC: we'll see …

Conversation with Mrs Thatcher: 1982



What do you do?

Think of things for the experiments to look for, and hope they find something different

Wouldn't it be better if they found what you predicted?

Then we would not learn anything!

Thanks to the impressive performance of the LHC machine and experiments we are now on a very fast learning curve, in particular on electroweak symmetry breaking (and surprises are not excluded from other subfields: flavour, neutrinos, dark matter, cosmology, …)

This accelerated experimental progress will force beyond-the-standard-model theorists to focus on the surviving models, or think harder

At 65, John shows no signs of decline in versatility and productivity, we can be sure that he has still a lot to say

Happy 65th Birthday, John!