

Mechanisms for Research: Centres, Networks, Collaboratories

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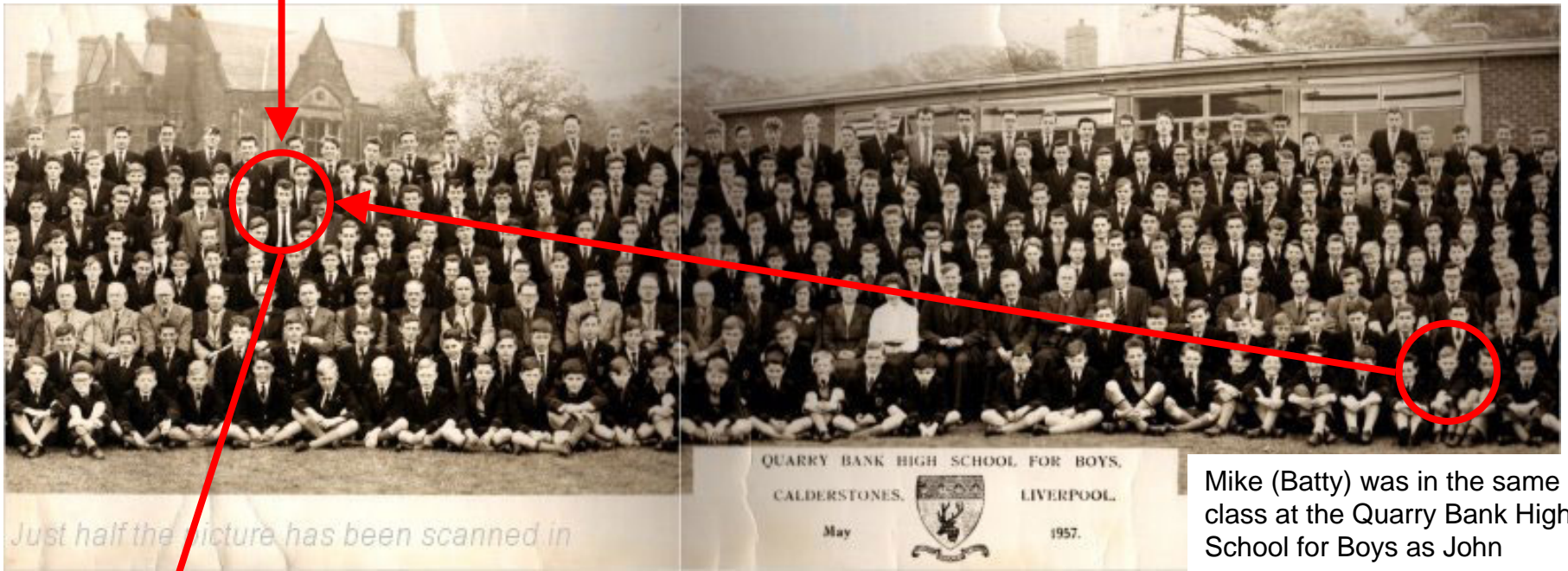
It was twenty years ago today

Sgt. Pepper taught the band to play



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1993,
1995**

51 and a bit years ago, not quite today



Mike (Batty) was in the same class at the Quarry Bank High School for Boys as John




SCIENTIST AT WORK: John H. Conway; At Home in the Elusive World of Mathematics

By GINA KOLATA


Published: October 12, 1993


DR. JOHN H. CONWAY sits down at his computer and gets ready to log on. But before the computer allows him to begin work, it quickly spews out 10 randomly selected dates from the past and the future, dates like 3/15/ 2005 or 4/29/1803. Dr. Conway has to mentally calculate what day of the week each would be before his computer lets him open a file and get to work.


Dr. Conway was born and reared in Liverpool, England, the son of a laboratory assistant at the Liverpool Institute for Boys, a school that was attended by Paul McCartney and


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From cells to cities



Y Xie

Department of Geography and Geology, Eastern Michigan University, Ypsilanti, MI 48197, USA
Received 8 September 1994

Abstract. Since mathematical models came to be applied to problems of architectural and urban form, new concepts based on predicting large-scale structure from local rules have emerged through insights originating in computation and biology. The clearest of these are computer models based on cellular automata (CA) and their recent generalization in evolu-

Various of us in NCGIA starting with Waldo Tobler began to work on cellular models of spatial systems inspired by John Conway's ***Game of Life***.

Mike Worboy's also wrote his thesis on one of Conway's finite groups. It's a small world after all

Couclelis H, 1985, "Cellular worlds: a framework for modeling micro-macro dynamics"
Environment and Planning A 17 585-596

Gardner M, 1970, "The fantastic combinations of John Conway's new solitary game of 'Life'" *Scientific American* 223 120-123

Tobler W R, 1970, "A computer movie simulating population growth in the Detroit region"
Economic Geography 42 234-240

Tobler W R, 1975, "Linear operators applied to areal data", in *Display and Analysis of Spatial Data* Eds J C Davis, M J McCullaugh (John Wiley, New York) pp 14-37

Tobler W R, 1979, "Cellular geography", in *Philosophy in Geography* Eds S Gale, G Olsson (D Reidel, Dordrecht) pp 279-386



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M Batty, Y Xie - ENVIRONMENT AND PLANNING B, 1994 - envplan.com
... Cite as: Batty M, Xie Y, 1994, "From cells to cities" Environment and Planning B: Planning and Design 21 Supplement, s31 – s48. **From cells to cities**. ...
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[\[PDF\] Agents, cells, and cities: new representational models for simulating multiscale urban dynamics](#)

M Batty - ENVIRONMENT AND PLANNING A, 2005 - casa.ucl.ac.uk
... different **from** traditional conceptions of population and employment, hitherto ... the rules needed to work with **cities** which are represented by **cells** or agents ...
[Cited by 26](#) - [Related articles](#) - [View as HTML](#) - [Web Search](#) - [BL Direct](#) - [All 6 versions](#)

[A self-modifying cellular automaton model of historical urbanization in the San Francisco Bay area](#) - [ufz.de](#) [PDF]

KC Clarke, S Hoppen, L Gaydos - ENVIRONMENT AND PLANNING B, 1997 - envplan.com
... growth spreads outward **from** existing urban centers, representing the tendency of **cities** to expand. Road-influenced growth encourages urbanized **cells** to develop ...
[Cited by 396](#) - [Related articles](#) - [Web Search](#) - [BL Direct](#) - [All 11 versions](#)

[Multi-agent simulations of residential dynamics in the city](#)

I Benenson - Computers, Environment and Urban Systems, 1998 - Elsevier
... new regions having different properties **from** those of ... bottom-up approach to modeling **city** infrastructure dynamics on a lattice of interacting **cells**, but limit ...
[Cited by 95](#) - [Related articles](#) - [Web Search](#) - [BL Direct](#) - [All 3 versions](#)

[Cellular automata as the basis of integrated dynamic regional modelling](#)

R White, G Engelen - ENVIRONMENT AND PLANNING B, 1997 - envplan.com

It's All About Networks

Networks are about linking people to places to ideas to outputs and to each other etc.

Five Questions

- How Do We Build Research, in GI Science, in Universities, in Teams? As Networks
- What Should We Research in this Broad Domain?
- Where Should We Do This Research?
- How Long Should a 'Good Idea' Last?
- How Should We Judge Success?

- **How Do We Build Research, in GI Science, in Universities, in Teams?**

1. Different Types of Centre: The RRLs, NCGIA, CASA

2. Top Down versus Bottom Up

3. Institutional Context

4. Networks: National and International

- **What Should We Research in this Broad Domain?**

1. The Institutional Structure: how organised, how corporate?
2. The Expertise
3. My Own Context at UCL: where we focus on cities and the built environment because of the critical mass there in terms of departments – architecture/planning, geography, archaeology, geomatics and transport
4. What We Should Not Research

- **Where Should You Do This Research?**

1. Location, Location, Location

2. Networks: The Success of the NCGIA Three Centre Model combined with the Initiative Structure

3. But this relates to institutional structure and the funding agencies. You could not do this in many places, for example in the UK where research grants have to employ new full time people, not just post-docs and where faculty do not get paid from them as such

- **How Long Should a Good Idea Last?**

1. If I look at the centres that I know in the UK, few have lasted longer than 30 years
2. NCGIA has morphed rather cleverly and this perhaps is the trick
3. How Long Will NCGIA Last? The Next Big Thing, or the Next, Next Big Thing.
4. Centres need renewal from within and without and the fashions change

- **How Should We Judge Success?**

1. Longevity

2. Outputs

3. PhDs

4. But it is impossible to figure out real success because there are no counterfactuals and ideas are contingent on the times and places we live in, that's pretty relativistic and I know doesn't appeal to many

And to finish

It's wonderful to be here,

It's certainly a thrill.

You're such a lovely audience,

We'd like to take you home with us,

We'd love to take you home.

***I don't really want to stop the
show,***

.....