A Brief History of Data

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Past, Present, and Future

- Past: a personal view and memoir
- Present: the mess created by The Askew Wall
- Future (not): The dream of The Third Manifesto

A Brief History of Data, Part 1

1960: Punched cards and magnetic tapes
1965: Disks and 'direct access'
1970: E.F. Codd’s great vision: “A Relational Model of Data for Large Shared Data Banks”
1970: C.J. Date starts to spread the word
1975: Relational Prototypes in IBM: PRTV (ISBL), QBE, System R
1980: First SQL products: Oracle, SQL/DS
1986: SQL an international standard

A Brief History of Data, Part 2

1986: SQL an international standard
1987: OODBMSs start to arrive
1989: The Object-Oriented Database Manifesto
1990: The Third Generation Database Systems Manifesto
1992: SQL:1992 a relationally complete SQL (Full level only)
1995: The Third Manifesto (Darwen and Date)

A Brief History of Me, Part 1

1967: IBM Service Bureau, Birmingham
1969: “Terminal Business System” – putting users in direct contact with their databases
1972: Attended Date’s course on database (a personal watershed)
1978: “Business System 12” - a relational dbms for the Bureau Service
1985: Death of Bureau Service (and of BS12)
1987: Joined IBM Warwick dev. lab. Attended a Codd & Date database conference in December
1988: “Adventures in Relationland” by Andrew Warden. Joined SQL standardization committee

A Brief History of Me, Part 2

1989: Joined O.U. as part-time tutor on database course
1990: Lecturing début at a BCS SIG meeting
1994: SQL standards meeting, Munich, precipitates TTM
1989 onwards Collaboration with Chris Date
2004: Retired from IBM (sigh) and from SQL (hooray!)
2005: Joined Warwick University to teach relational database (and not SQL!)
The Perversity of SQL

SELECT CITY_NAME
FROM CITY C1
WHERE 4 > (SELECT COUNT(*)
FROM CITY C2
WHERE C1.POPULATION < C2.POPULATION)

The Unperversified Version

SELECT CITY_NAME
FROM CITY C1
WHERE  (SELECT COUNT(*)
FROM CITY C2
WHERE C2.POPULATION > C1.POPULATION) < 4

The Career of a Coauthor

Relational Database Writings 1985-1989
by C.J.Date with a special contribution
"Adventures in Relationland"
by H.D. (as Andrew Warden)

Relational Database Writings 1989-1991
by C.J.Date with Hugh Darwen

Relational Database Writings 1991-1994
by C.J.Date

The Third Manifesto
by Hugh Darwen and C.J. Date

Databases, Types, and The Relational Model:
The Third Manifesto
by C.J. Date and Hugh Darwen

Sonnet 122

Thy gift, thy tables, are within my brain,
Full character'd with lasting memory,
Which shall, above that idle rank, remain
Beyond all Date, even to eternity...

(W Shakespeare)

Sonnet 122

Anonymous columns
FROM clause originally restricted to named tables
Duplicate column names
Duplicate rows
NULL and 3-valued logic
Failure to recognize degenerate cases (e.g. columnless tables)
Updating views WITHOUT CHECK OPTION
Failure to support "=" properly
CREATE TABLE <table name> OF <type>

The Fatal Flaws of SQL

A Guiding Light

All logical differences are big differences
(Wittgenstein)

All logical mistakes are big mistakes
(Darwen's corollary)

All non-logical (psychological) differences are small differences
(Darwen's conjecture)
1 will faithfully embrace the Relational Model of Data.
- NO EXTENSION
- NO PERVERSIONS
- NO SUBSUMPTIONS

2 - will support user-defined domains and user-defined functions of arbitrary complexity.

3 will allow SQL to be implemented in it for temporary use (until SQL finally expires).

4 will provide unprecedented chivalry.

5 will be named....

Projects based on TTM

Rel: an implementation of Tutorial D
by Dave Voorhis, University of Derby

D4: a commercial implementation
by Alphora, Utah, USA
front-end to SQL (so includes nulls, alas)

Duro: a C API for relational algebra and transactions, by René Hartmann

Further info at www.thethirdmanifesto.com

Conceptual Integrity
Principle #7

“Conceptual integrity is the most important property of a software product”
(Fred Brooks, 1975)

Of course, you must have concepts before you can be true to any. These had better be:

a. few
b. agreeable to those invited to share them

The End