BISS Bochum

GeoInno: Evolutionary Economics

Tom Broekel

Learning outcomes

- The differences between Evolutionary and (traditional) Neoclassical Economics

- Routines - what they are and why they matter

- Understanding the ideas and consequences of path-dependencies

Outline

🔘 Evolutionary Economics

    ⚪ Motivation

    ⚪ Foundations

    ⚪ Path-dependencies

Evolutionary Economic Geography

- Core concepts of Evolutionary Economic Geography

  - Spin-offs & Life-Cycle

  - **Evolutionary Economics**

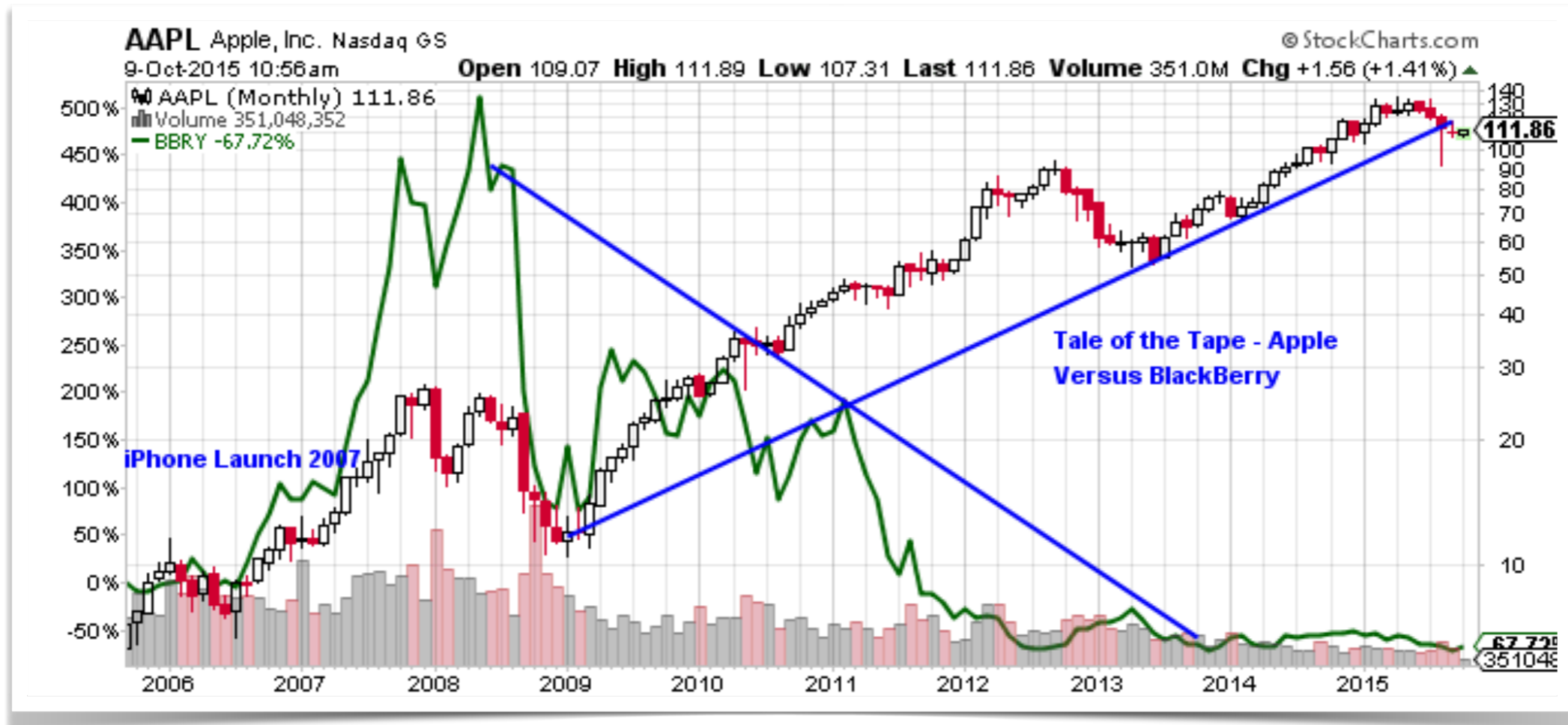 - Relatedness & knowledge space & complexity

  - …

Motivation

RIM (Blackberry) vs Apple (iPhone)

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Motivation

RIM (Blackberry) vs. Apple

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Motivation

- Business model of RIM: Firm customers, focus on efficiency, security, reliability

- RIM's perception of iPhone (2007): *"By all rights, the product **should have failed**, but it did not"* D. Yach (CTO, RIM)

- Result

  - *"The Storm* [- 100 Mio. $] *failure made it clear we were not the dominant smartphone company anymore … we can't be who we used to be anymore, which sucked...**It's not clear what the hell to do.**"* Jim Balsille (co-CEO, RIM)

  - *"I **learned** that beauty matters…."* D. Yach (CTO, RIM) -> **Evolutionary Economics**

Outline

- Evolutionary Economics

  - Motivation

  - Foundations

  - Path-dependencies

Foundations

- Unhappy with existing and dominant view

  - **Equilibrium?** Economies never in equilibrium ➡ permanent disequilibrium (e.g. firm growth, entrepreneurship, …)

  - **Comparative static (analytical) approach** ignores adaptation phases and processes ➡ these are the "business as usual" in real world

  - **No explanation of economic development** & consideration of technological / social change

  - …

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Foundations

Schumpeter, J.A. (1912). *Theorie der wirtschaftlichen Entwicklung*

Nelson, R. R. & Winter, S. G. (1982). *An Evolutionary Theory Of Economic Change*

Boschma, R. A. & Frenken K. (2006). *Why is economic geography not an evolutionary science? Towards an evolutionary economic geography*. Journal of Economic Geography, 6(3):273-302
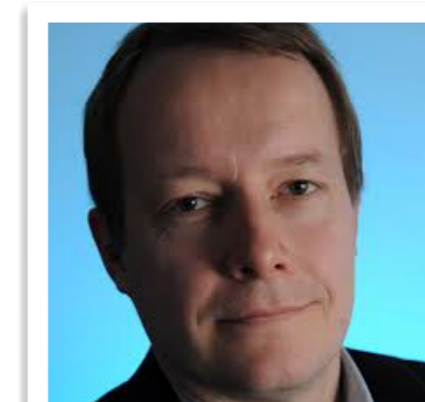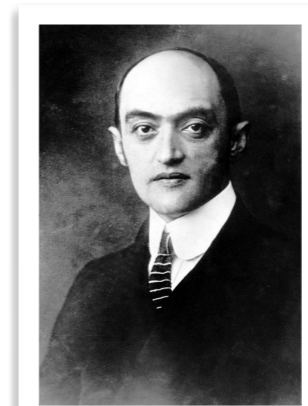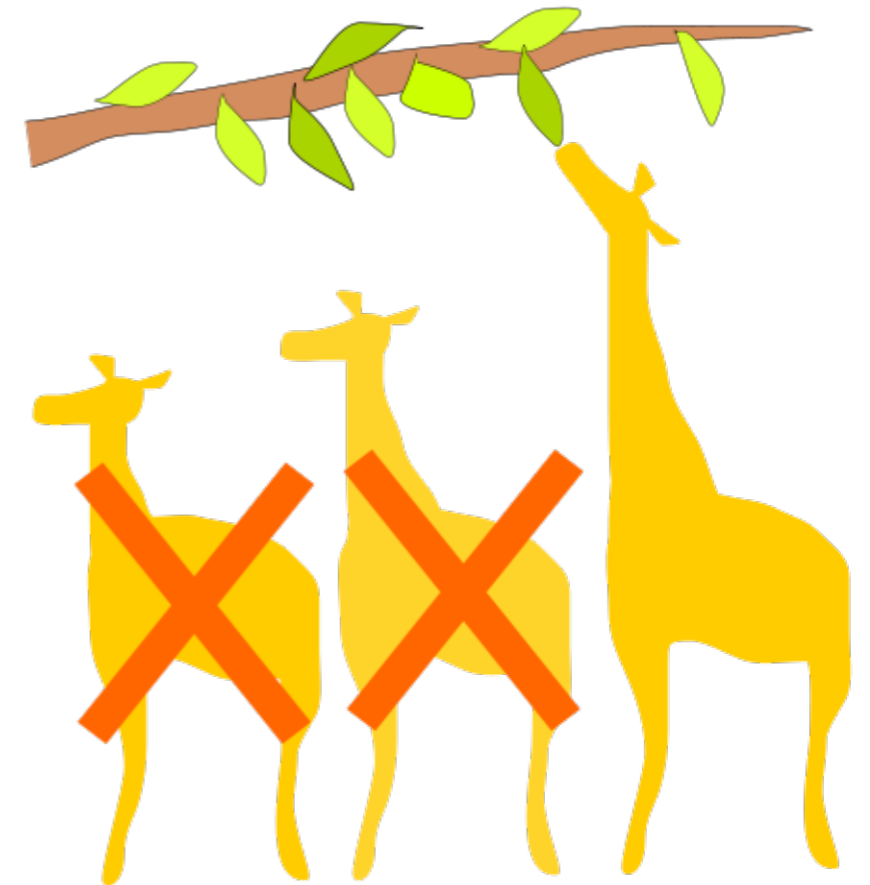
Foundations

🔘 Behaviour of organisations **NOT** problem of optimal choice between known, well-defined, alternatives

    🔘 No perfect information

    🔘 No rational actors

   🔘 Heterogeneity in actors (knowledge, resources, …) and their behaviour

Foundations

○ Basic idea of evolutionary economics

○ Analogy to biology: evolution

  ○ **Routines** as social equivalent to genes

  ○ Represent usual and expected behaviour of firms

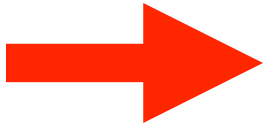 ○ **Learned** through individual development (founders & firms) and R&D activities

Foundations

- Analogy to biology: evolution

  - **Routines** decisive for economic success: RIM!

  - **Variation** of routines between firms (Apple. Vs RIM)

  - **Selection** of successful routines by markets and competition (design of smartphones: iPhone)

  - **Inheritance** of routines by imitation & learning & spin-offs ("*I learned that beauty matters....*" D. Yach (CTO, RIM))
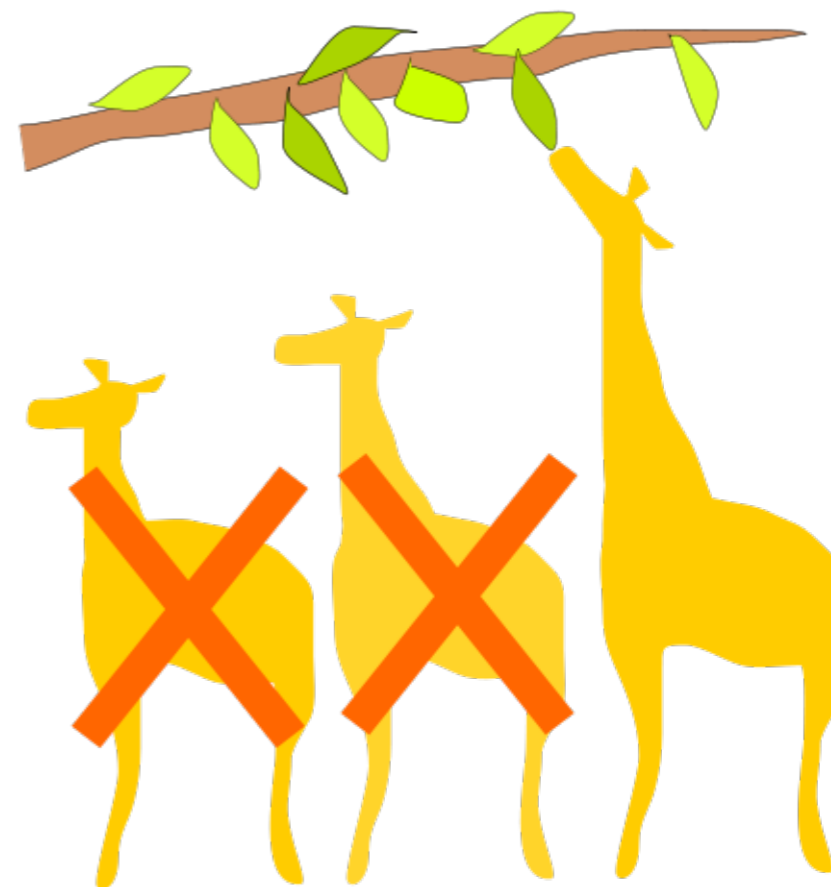
Foundations

● Behaviour of organisations **NOT** problem of optimal choice between known, well-defined, alternatives

● Rather: **routine** based "manoeuvring" within bounded manageable environment (Witt, 2001)

● Results not necessarily optimal ➡️ **Path-dependencies**

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Outline

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  - Motivation
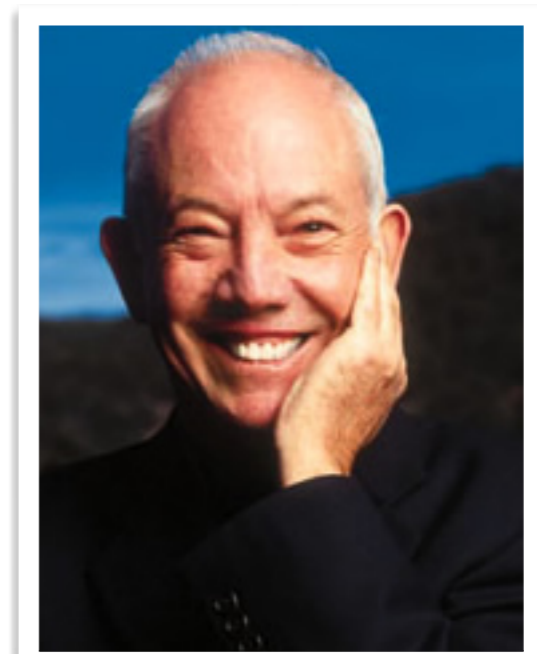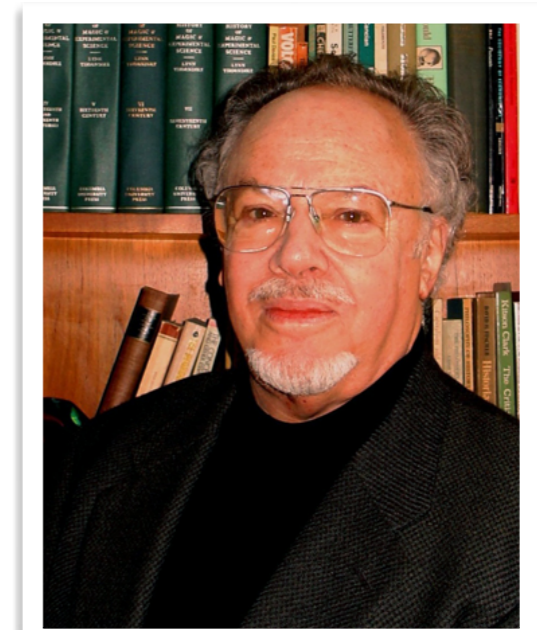
  - Foundations

  - Path-dependencies

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Path-dependencies

Paul David (1985)

- *Clio and the Economics of QWERTY.* American Economic Review, 75(2): 332-337

Brian Arthur (1994)

- *Increasing Returns and Path Dependence in the Economy.* University of Michigan Press
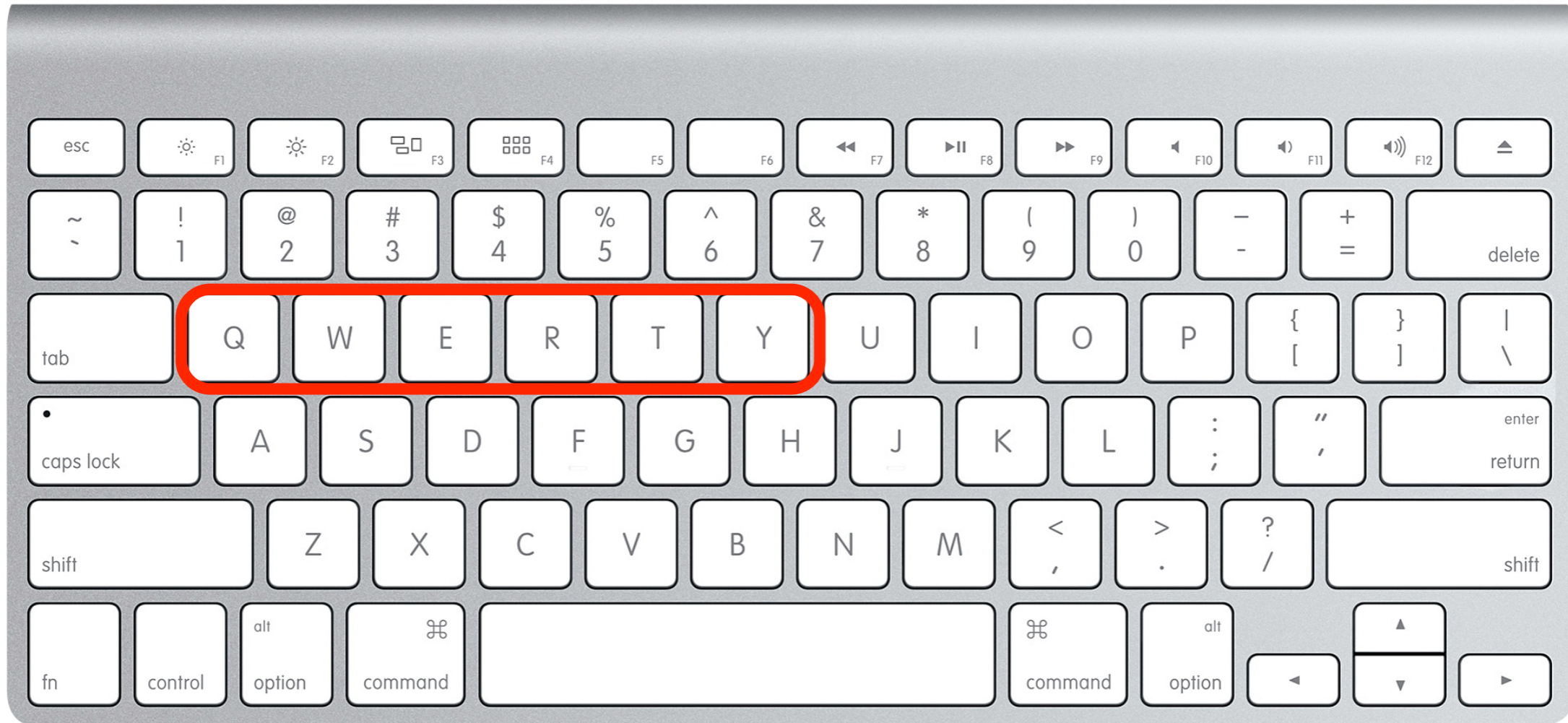
Path-dependencies

- Previous and temporarily distant (systematic & random) events influence subsequent events

- *"History matters"*

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Path-dependencies

● **Phase 1**: Large number of development possibilities

● **Phase 2**: Defining event reduces reachable possibilities and self-enforcing processes increase attractiveness of a particular development "path"

● **Phase 3**: Strengthening of path-dependency through l**ock-in**

● **Phase 4:** Path breaking - emergence of new developmental possibilities
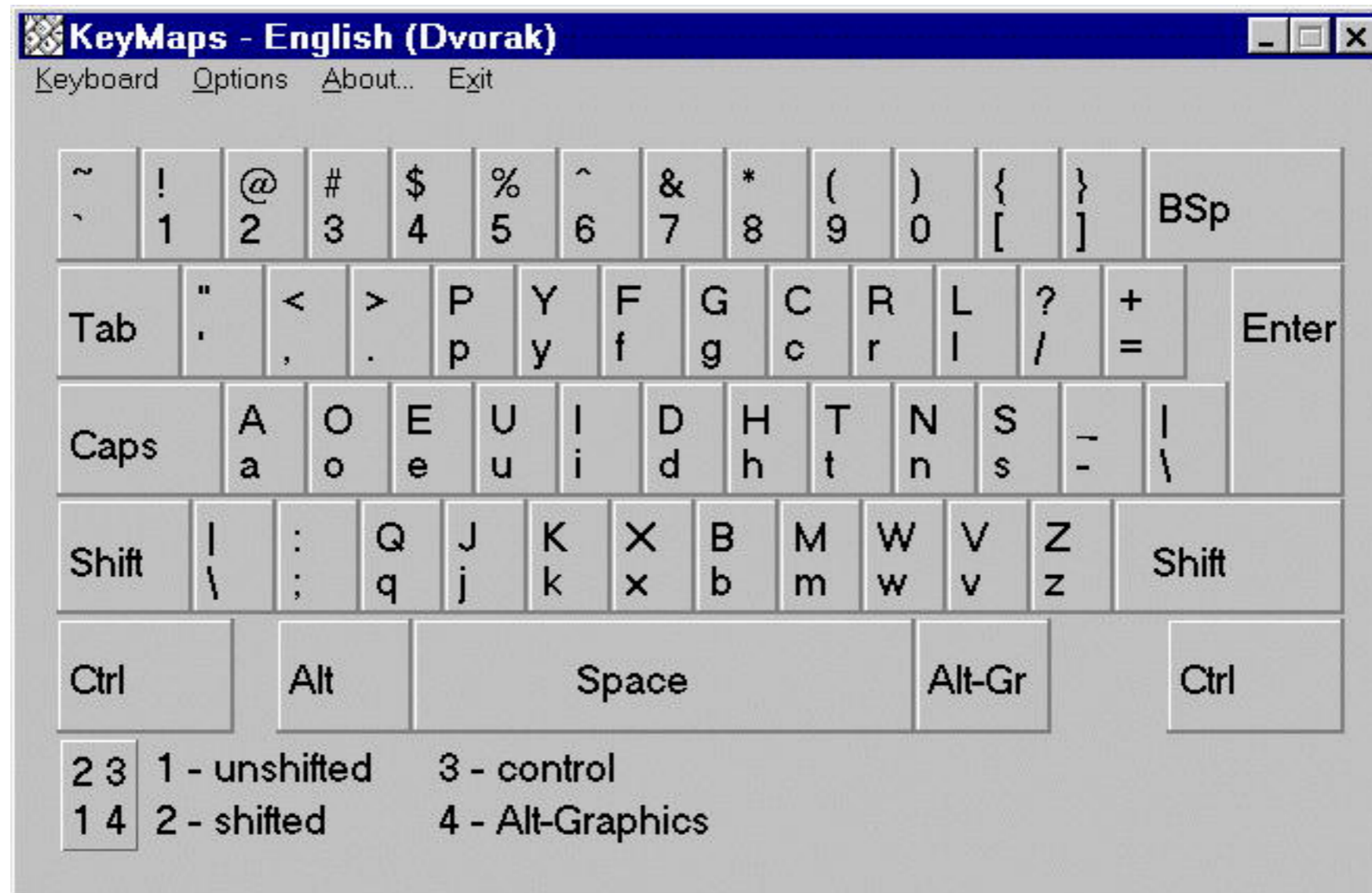

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Path-dependencies

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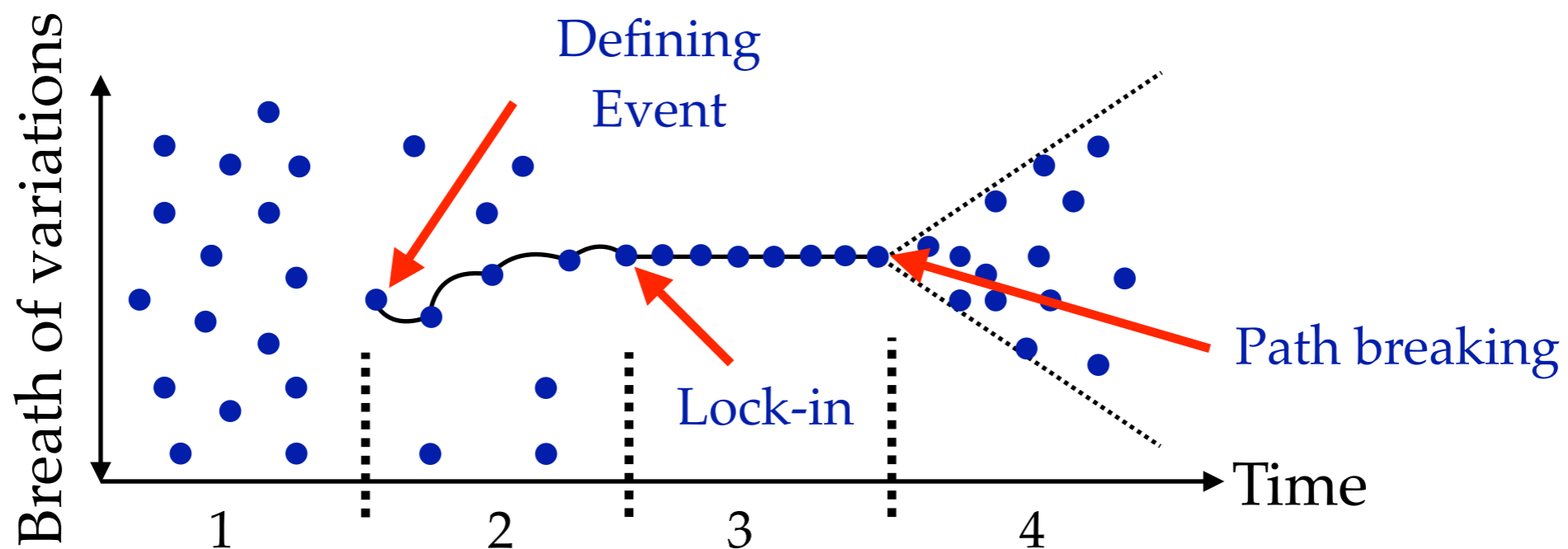
Path-dependencies

- Why are keys on common keyboard in this particular order?

- QWERTY/Z set-up is optimal for mechanical type writers - trade-off between stroking frequency and possibility of locking key-carrier

- Not necessary for electronic keyboards (e.g. Dvorak keyboard better)
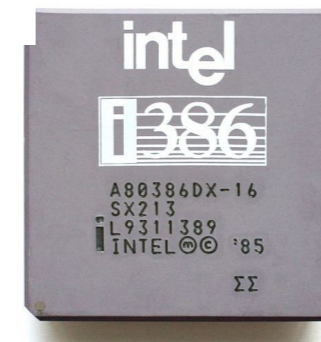

Source: Bitter, 2013

Path-dependencies

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Path-dependencies

- *QWERTY* -keyboard is so-called (technological) lock-in

- Sticking to "inferior" technology despite availability of better alternative

- Many more examples

  - VHS cassette (vs. *Betamax*)

  - X86-processing units (vs. *Itanium*)

  - …

Path-dependencies

- **Scale effects:** Utility of activity/option increases with growing utilisation

  - Activity becomes relatively more advantageous and will be used and further developed

- **Effect of proximities (e.g. cognitive & geographic)**

  - Existing knowledge determines search for new knowledge

  - Existing knowledge determines absorption capacity and efficiency of new knowledge

  - **Learning is path-dependent**

- …

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