‘Muddling Through’ revisited – the long term development of the dualistic Austrian VET system

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Input: to International Research Conference
“History of Vocational Education and Training: Cases, Concepts and Challenges”
Zurich, 8.-9. September 2014
Agenda, questions

- Overall question: Dualistic structure of two sectors: fulltime schools and apprenticeship, how did it emerge historically?
  - Empirical picture

- Theoretical/explanatory questions
  - Persisting/changing structure; how to define?:
  - Description/explanation, historical institutionalism as a theoretical-methodological approach for analysis of institutional change
  - can the 'muddling through' hypothesis contribute something?
**STRUCTURE**

- Differentiated structure from age 10 (very early)
- One of the highest proportions of vocational education
- 'DUALISM': Strong apprenticeship and strong full-time vocational schools
<table>
<thead>
<tr>
<th>Country</th>
<th>Proportion of Vocational Education (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Czech Republic</td>
<td>74</td>
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<tr>
<td>Belgium</td>
<td>73</td>
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<td>Slovak Republic</td>
<td>72</td>
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<td>Austria</td>
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<td>Finland</td>
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<td>Netherlands</td>
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<td>Switzerland</td>
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<td>Slovenia</td>
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<td>Luxembourg</td>
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<td>Australia</td>
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<td>Austria</td>
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<td>Denmark</td>
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<td>EU19 average</td>
<td>48</td>
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<tr>
<td>Poland</td>
<td>44</td>
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<tr>
<td>France</td>
<td>44</td>
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<tr>
<td>Spain</td>
<td>44</td>
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<td>OECD average</td>
<td>43</td>
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<td>Turkey</td>
<td>39</td>
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<td>Indonesia</td>
<td>37</td>
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<td>Chile</td>
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<td>United Kingdom</td>
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<td>Greece</td>
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<td>Russian Federation</td>
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<td>Italy</td>
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<td>Korea</td>
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<td>Japan</td>
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<td>Portugal</td>
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<td>Mexico</td>
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<td>India</td>
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<td>China</td>
<td>21</td>
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<tr>
<td>United States</td>
<td>21</td>
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<tr>
<td>New Zealand</td>
<td>21</td>
</tr>
</tbody>
</table>

OECD average = 43%

- VET between 74% and 2% at upper secondary level
- OECD 43%
- EU(19) 48%
- Austria 71%
- Switzerland 65%
- Germany 57%
Participation in education and employment, OECD-Indicators, AT, CH, D, EU21, age groups

- 15-19; 20-24, 25-29 y age groups
Participation in education and employment, OECD-Indicators, AT, CH, D, EU21, age groups

- Proportion apprenticeship (education in employment and school)
- Differentiated structure from age 10 (very early)

- One of the highest proportions of vocational education

- 'DUALISM': Strong apprenticeship and strong full-time vocational schools
Upper secondary Participation 1924-2008 (4-5 Generations)

- Academic school
- Teacher education
- VET college (BHS)
- VET school (BMS)
- Apprenticeship

Enrolment at upper secondary level related to 15-19 yrs population in Austria 1924-2008

(4-5 Generations)
Entwicklung der Beteiligung auf der oberen Sekundarstufe 1924-2008 (4-5 Generationen)
Proportion full-time (VET) school/apprenticeship

- Full-time school incl. acad/apprenticeship
- VET-school/apprenticeship

Graph showing the proportion of full-time VET school/apprenticeship from 1924 to 2008, with notable years labeled.
**System of Education**

- **Primary school** (4 years)
- **General secondary school** (4 years)
- **Special schools**
- **University (Bologna)**
- **Polytechnics (3-4 yrs)**
- **Non-University postsecondary (2-3 yrs)**
- **Academic secondary school (Upper 4 yrs)**
- **Academic secondary school (Lower 4 yrs)**
- **Higher Education**
- **Intermediate vocational school (1-3 yrs)**
- **Dual Voc training (2-4 yrs)**

**Age**

- 16
- 15
- 14
- 13
- 12
- 11
- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1

**Elementary education**

**Additional upward path through upper level vocational schools**

**Cooling out structure gradually complements tracking at lower secondary level**
Longer term historical developments

- Institutional change at lower secondary education
  - cooling out structure complements tracking at lower secondary level

- Vocational education and overall participation in education

- Vocational education: Roughly the same institutions constitute different structures
  - Long term processes of system building bring distant parts increasingly nearer to each other…
  - …vocational education moves towards other parts…
  - …apprenticeship moves towards full-time schools
System of Education

- University (Bologna)
- Polytechnics (3-4 yrs)
- Non-University postsecondary (2-3 yrs)
- Academic secondary school (Upper 4 yrs)
- Academic secondary school (Lower 4 yrs)
- Special schools
- General secondary school (4 years)
- Dual Voc training (2-4 yrs)
- Upper Vocational School (5 yrs)
- Intermediate vocational school (1-3 yrs)
- Elementary education

Gradual change from tracking to self-selection

Tracking > cooling out

100% of age group
Logic of cooling out long term change?

- Cooling out: self-selection instead of predetermined tracking

- Tracking at lower secondary level changed…
  – from three tracks as schooltypes until 1920s…
  – to two (+one) schooltypes including three tracks until 1970/80s
  – to two schooltypes including 2 tracks including 3 achievement levels until 2000s
  – to two tracks with internal differentiation currently into the future

<table>
<thead>
<tr>
<th>Change: 1920s</th>
<th>to</th>
<th>1960s/70s</th>
<th>to</th>
<th>2000s</th>
<th>to</th>
<th>future?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic 'elite'</td>
<td>Bürgerschule</td>
<td>Academic 'elite'</td>
<td>Hauptschule one&gt; two tracks</td>
<td>Academic 'elite'</td>
<td>Hauptschule three achievement levels</td>
<td>Academic 'elite'</td>
</tr>
<tr>
<td>Primary school upper cycle</td>
<td>Primary upper</td>
<td>Hauptschule</td>
<td></td>
<td></td>
<td></td>
<td>Hauptschule</td>
</tr>
</tbody>
</table>

3 school types > 2(+1) types, 1 tracked > 2 types, 1 achievement > 2(+1) types, indiv.
Historical participation in education

- 1859: full participation in primary schools
- 1924: ~20% total participation upper secondary level
- about second generation after full participation in primary school

<table>
<thead>
<tr>
<th></th>
<th>1924 (23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apprenticeship</td>
<td>11%</td>
</tr>
<tr>
<td>VET full time schools (BMS)</td>
<td>2,4%</td>
</tr>
<tr>
<td>VET full time colleges (BHS)</td>
<td>2,0%</td>
</tr>
<tr>
<td>Upper secondary teacher education</td>
<td>0,6%</td>
</tr>
<tr>
<td>Academic school (AHS)</td>
<td>2%</td>
</tr>
</tbody>
</table>
**Historical participation in education**

- How is upper secondary participation related to mass compulsory education?

- Reconstruction of generations since full participation in mass education 1859
  - Participants 6-12 old, birth cohort 1847-53
  - Next generation born after 18-35 years: 1865-1888
  - Upper secondary school next generation after 15-19 years: 1880-1907
  - Etc. …

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1853</td>
<td>1871 1888</td>
<td>1886 1907</td>
<td>1889 1923</td>
<td>1904 1942</td>
</tr>
<tr>
<td>1847</td>
<td>1865 1882</td>
<td>1880 1901</td>
<td>1883 1917</td>
<td>1898 1936</td>
</tr>
<tr>
<td></td>
<td>1865 1888</td>
<td>1880 1907</td>
<td>1883 1923</td>
<td>1898 1942</td>
</tr>
<tr>
<td></td>
<td></td>
<td>not in picture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>picture: 2nd generation after full prim school</td>
<td>1924</td>
<td>1936</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

not in picture
Historical participation in education

- Relation of upper secondary participation to mass compulsory education
  - begin of upsec statistics related to 2nd generation of parents that have fully participated in (at least some) basic compulsory education

Enrolment at upper secondary level related to 15-19yrs population in Austria 192

- Academic school (AHS)
- Upper secondary teacher education
- VET full time colleges (BHS)
- VET full time schools (BMS)
- Apprenticeship

about 2nd generation after full participation in compulsory school had been reached (~1860)
Historical participation in education
generations after 1924

- **Same procedure of reconstruction of next and 2nd generations**
  - participants upsec 1924
  - participants upsec 1953
  - participants upsec 1973

- *(age range widens from one generation to the next)*

<table>
<thead>
<tr>
<th>up sec</th>
<th>1924</th>
<th>1st children (18-35)</th>
<th>upsec school (15-19)</th>
<th>2nd children (18-35)</th>
<th>upsec school (15-19)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1923 1944</td>
<td><strong>1938-1963</strong></td>
<td>1941 1979</td>
<td><strong>1956-1998</strong></td>
</tr>
</tbody>
</table>

1st gen from upsec 1924: 1953 until 1963
2nd gen from upsec 1924: 1963 until 1977

|--------|------|-----------------------|-----------------------|---------------------|---------------------|

1st gen from upsec 1953: 1973 until 1983
2nd gen from upsec 1953: 1993 until 2006

|--------|------|-----------------------|-----------------------|---------------------|---------------------|

1st gen from upsec 1973: 1973 until 1983
2nd gen from upsec 1973: 1993 until 2026
Participation of generations after 1924

Enrolment at upper secondary level related to

15-19yrs population in Austria 192

- Academic school (AHS)
- Upper secondary teacher education
- VET full time colleges (BHS)
- VET full time schools (BMS)
- Apprenticeship

...further parents generations of participants in upper secondary education

1924 gen (1905-1909)
1st gen after 1924
2nd gen after 1924
1st gen after 1953
2nd gen after 1953
1st gen after 1973
Change in participation per generation after 1924

- Overall: +20 p.points per generation
- Apprenticeship: only 1920s to 1950s
- VET colleges: 1950s to 1970s, 1970s to 2000s

**Percentage points change, generations**

- **Overall:**
  - Apprenticeship: +19%
  - VET colleges: +17%

**Per cent (index) change, generations**

- **Overall:**
  - Apprenticeship:
    - 2020s-2050s: +19%
    - 2050s-2070s: +4%
    - 2070s-2090s: -1%
  - VET colleges:
    - 2020s-2050s: +25%
    - 2050s-2070s: +20%
    - 2070s-2090s: +22%
  - Academic school:
    - 2020s-2050s: +21%
    - 2050s-2070s: +18%
    - 2070s-2090s: +17%
  - Upper secondary teacher education:
    - 2020s-2050s: +18%
    - 2050s-2070s: +17%
    - 2070s-2090s: +17%

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<table>
<thead>
<tr>
<th>Generation</th>
<th>Apprenticeship</th>
<th>VET colleges</th>
<th>Academic school</th>
<th>Upper secondary teacher education</th>
<th>Sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920s-1950s</td>
<td>+19%</td>
<td>+25%</td>
<td>+21%</td>
<td>+18%</td>
<td></td>
</tr>
<tr>
<td>1950s-1970s</td>
<td>+4%</td>
<td>+20%</td>
<td>+22%</td>
<td>+18%</td>
<td></td>
</tr>
<tr>
<td>1970s-2000s a.</td>
<td>+5%</td>
<td>+19%</td>
<td>+22%</td>
<td>+17%</td>
<td></td>
</tr>
<tr>
<td>1970s-2000s b.</td>
<td>-1%</td>
<td>-2%</td>
<td>+21%</td>
<td>+18%</td>
<td></td>
</tr>
</tbody>
</table>

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**Percentage points change**

- Apprenticeship: +19%
- VET colleges: +17%
- Academic school: +21%
- Upper secondary teacher education: +18%
- Sum: +20%

**Per cent (index) change**

- Apprenticeship: +19%
- VET colleges: +25%
- Academic school: +21%
- Upper secondary teacher education: +18%
- Sum: +20%
System building
stylized account
Process of structuration and integration of originally separate institutions

Higher Education (academic)  Vocational Education and Training

Basic education (foundation)
Process of structuration and integration of originally separate institutions

Higher Education (academic)

Basic education (foundation)

Vocational Education and Training

General Education

Academic Schooling

Higher Education

Employment
Process of structuration and integration of originally separate institutions

- Universities founded 14th, 16th cent.

Higher Education (academic)

- Academic schooling 13th-15th cent. preparatory to univ

- 1781-91 'Philosophicum' - Lyceum, competing with gymnasium

- 1848 basic structure of academic school

- Ac. related to mass education 1920s

Vocational Education and Training

- Basic education (foundation)

Higher Education

Vocational Education and Training

Employment
Process of structuration and integration of originally separate institutions

-Universities founded 14th, 16th cent.

Higher Education (academic)

-1781-91 'Philosophicum'-Lyceum, competing with gymnasium
-1848 basic structure of academic school
-ac. related to mass education 1920s

1920s

Vocational Education and Training

-1760s-70s early founding of various occupational academies
-Sunday, evening schools for apprentices founded 18th cent. compulsory 19th cent.
-after 1800 new vocational academies, end 19th cent. Higher education (TU, WU)
-new medium level vocational schools mid 19th cent. sectorially separate (business, trades, womens‘...); orig undifferentiated, 1880s network trade schools
-1938-45 German occupation: expansion of apprenticeship (part-time school compulsory also for unemployed)
-1947 integrated system
-1969 Vocational Training Act

-Originally only in employment: masters in guilds, 13th religious, 14th economic, social
-power fights 15th to 19th century
Process of structuration and integration of originally separate institutions

Higher Education (academic)

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Vocational Education and Training

Basic education (foundation)

- Late 19th
- 1920s

Universities founded 14th, 16th cent.

Higher Education (academic)

Academic schooling 13th -15th cent. preparatory to univ

1781-91 'Philosophicum' - Lyceum, competing with gymnasium

1848 basic structure of academic school

Academic schooling 13th -15th cent.

1781-91 'Philosophicum' - Lyceum, competing with gymnasium
Process of structuration and integration of originally separate institutions

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Higher Education (academic)

Vocational Education and Training

Basic education (foundation)

- 1920s press for comprehensive lower secondary school
- 1962/69 prep school apprentices, increase of comp. school age (8>9y)
- Tracking, cooling out

- 1st y full-time compulsory
- 1920s late 19th
- latest part, 18th cent., compulsory between 1774 and 1860 (supply and enforcement)
- 1920s cooling out

1920s

- 1920s

cooling out

Originally

1st y full-time compulsory

EMPLOYMENT

Higher Education (academic)

Vocational Education and Training

Basic education (foundation)

1st y full-time compulsory

1920s

cooling out

Originally

Vocational Education and Training

Basic education (foundation)

1920s

cooling out

Originally
Process of structuration and integration of originally separate institutions

Higher Education (academic)

Vocational Education and Training

Basic education (foundation)

EMPLOYMENT

HIGHER EDUCATION

ACADEMIC SCHOOLING

GENERAL EDUCATION

VOCATIONAL EDUCATION AND TRAINING

Higher Education

Basic education

Basic education
Process of structuration and integration of originally separate institutions

- Higher Education (academic)
- Vocational Education and Training
- Employment
- Basic Education (foundation)
Process of structuration and integration of originally separate institutions

Dynamics of „system building“: Unification
Process of structuration and integration of originally separate institutions

Borders & tensions

Higher Education (academic)

Vocational Education and Training

Basic education (foundation)

EMPLOYMENT

Borders & tensions
Explanations, ‘muddling through‘, institutionalism

- Muddling through: logic of decision making that brings incremental change to the fore
  - Basic idea: administrators do not make their decisions ‘technocratically’ on basis of the scientific ideals (considering all possible values, and all available knowledge (today: ‘evidence based’)…
  - …but based on past experience ‘successive limited comparison’
  - Much critique, then forgotten, since 2010 some revival: uncertainty, systematic trial and error policy as alternative to broad based reforms

- Institutionalisms, rational choice, sociological vs. historical
  - Quite remarkable differences
  - ‘Muddling through‘ might be complementary to rational choice institutionalism
  - Historical institutionalism much wider concept…
  - …also emphasis on incremental/gradual change…
  - …main mechanisms:
    - critical junctures and positive feedback
  - …identified five modes of change…
    - displacement, layering, drift, conversion, exhaustion
exemplary modes of institutional change, superficially 'the same' institutions

- **Displacement**
  - traditional institutions may become discredited or marginalised

- **Layering**
  - layers of new institutions may be added to old ones

- **Drift**
  - old arrangements may atrophy and cease to operate as intended

- **Conversion**
  - institutions may be converted into functioning in a different way

- **Exhaustion**
  - patterns of behaviour permitted under institutions may eventually undermine these institutions

(see Gospel/Edwards 2011, 3-4)
Preliminary conclusions
explanation of dualistic system

- critical junctures
  - academic: 1790s-1840s: long form of gymnasium
  - vocational: 1880s separate framework of higher level trade schools, 1947 integration of full-time vocational school sector, 1960s making 1st year compulsory, 1970s expand upper level vocational schools
  - question somehow open: sustainability of apprenticeship
    separation from school sector, change of selection regime from school to firm; collecting pond / 2nd alternative for drop-outs from full-time schools
    positive feedback from employment

- modes of change
  - Layering: long term process, network of trade schools (1880s), integration of full-time sector (1947)
  - Conversion1: 1st year of full-time vocational schools part of compulsory school
  - Conversion2: upper level vocational schools as transition agency to higher education (business, service more than engineering)
  - ?Exhaustion: stick to early selection to academic school (sponsored 'elite‘ selection‘)
Thank you!