

Dynamic and semi-dynamic procedures in sociological studies

Theory and practice in studying social changes phenomenon

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Problem of Time

Many of us explore social dynamics ...

Very common approach in studying social dynamics

- Question: how a given phenomenon evolves in time
- Assumption: this evolution is simply caused 'by time-passing-by and everything that is related to it'
- The essence: in this approach time becomes an 'umbrella term' for all that is unknown, for unspecified factors that remain hidden and thus 'non-problematised'
- The consequence: such explanation can be hardly satisfying scientifically. In fact it is nothing more than a pseudo-explanation.

What is the problem?

- The problem is that
 - the duration of a given phenomenon is just one of the factors that determine change,
 - time is not just a continuous variable,
 - and it comes in different variations.
- Its rank is increasing when we want to define the significance of human populations in the process of social change
 - the time factor is usually hidden and blurred,
 - so one of major concerns of sociological analysis is to separate age effects from cohort effects and effect of social time (the broader context)

Dynamic and semi-dynamic designs

Some general models

The design of simultaneous cross-sectional studies

Age	Sample	Time of measurement	Observed variables
A_1	S_1	T_1	$V_1, V_2, V_3 \dots V_g$
A_2	S_2	T_1	$V_1, V_2, V_3 \dots V_g$
..
..
A_m	S_m	T_1	$V_1, V_2, V_3 \dots V_g$

Source: von Eye 1985: 3141.

Some specific aspects/problems of CSS

- It is a procedure that is used when ...
 - the studied processes are significantly extended in time,
 - changes occur slowly,
 - and a researcher has no observations of the changing subjects at sufficiently spaced time intervals.
 - So he/she selects the subjects who may be assumed to represent the same process, only at different stages of advancement.
- Von Eye (1985): *cross-sectional studies* are both simple and economical; however, because they cover only one point in time, the uncertainty as to which factors influence the measurement results is not clearly reduced.

The design of time-series studies

Age	Sample	Time of measurement	Studied variables
A_1	S_1	T_1	$V_1, V_2, V_3 \dots V_g$
A_1	S_2	T_2	$V_1, V_2, V_3 \dots V_g$
..
..
A_1	S_m	T_m	$V_1, V_2, V_3 \dots V_g$

Source: J.P. Keeves. 1990. *Longitudinal Research Methods*, p. 470.

Some specific aspects/problems of TSS

- This design generates two types of problems:
 - The first is related to the meaning and importance of indicators in situations when the entire context changes.
 - The second arises in connection with statistical procedures and scales applied for comparing measurements.
- The main drawback: the time factor cannot be separated as an attribute of the study sample from the time factor as an attribute of the context.
- Attempts to manage this problem (like different age groups distinguished within one population or studies designed on an international scale) are not satisfying.
- A researcher has to make presumptions with respect to both studied population and the context → the operationalisation process is based on an assumption knowledge.

The design of longitudinal studies

Age	Sample	Time of measurement	Observed variables
A_1	S_1	T_1	$V_1, V_2, V_3 \dots V_{\epsilon}$
A_2	S_1	T_2	$V_1, V_2, V_3 \dots V_{\epsilon}$
..
..
A_m	S_1	T_m	$V_1, V_2, V_3 \dots V_{\epsilon}$

Source: J.P. Keeves. 1990. *Longitudinal Research Methods*, p. 471.

Five advantages and one disadvantage

- 1/ because observations are repeated with respect to the same subject, they make it possible to directly identify the intra-individual constancy and change → individual profiles can be drawn much more precisely;
- 2/ this type of study, if conducted on a larger, internally diversified population, enables to establish similarities and common points in the subjects' fate as well as differences across groups;
- 3/ longitudinal studies record images of social diversity and their inner dynamics (the so-called flows);
- 4/ because these studies register only the impacts that occur in the examined period of time as natural influences, they allow to determine a broader social context;
- 5/ by placing the biographical time in a certain social period, longitudinal studies can make assumptions about the relationship between them.
- But they do not specify the relationship between age and cohort ...

Pragmatic aspects of longitudinal research

Only in methodological books is it so simple ...

Main problems and typical solutions in LS

- Main problems:
 - Finance (longitudinal studies are a very expensive undertaking)
 - The dropout rates and the attrition bias (that can distort the results of the entire study)
 - Observations (always limited they may result in crucial information being omitted)
- Solutions:
 - Interest in a retrospective („instant”) version of prospectively oriented longitudinal studies
 - Sample salvaging by „filling” it with respondents with identical parameters
 - Collecting surplus data, just in case - to have empirical material for the respective hypotheses (*ad libitum* approach)

Data collection and data management

- Wide range of techniques (quantitative and qualitative) to record:
 - objective situations and subjective feelings
 - in real-time and retrospectively,
 - easily comparable variables (through tests, projection techniques, scales)
 - and one-off variables
- Databases and data archives:
 - bulk up from the compiled empirical material which then needs to be properly organised and stored
- For such studies it is critical to ensure the minimal continuity of research teams and responsible management

The crucial is analytical level

- Analysis of longitudinally collected data like in a regular survey
 - Which is a waste of opportunities offered by a longitudinal, pure dynamic study
- Panel analysis
 - Which gives the unique possibility to observe so called flows – inner dynamics of studied phenomenon, to determine not only NET CHANGE, but also GROSS CHANGE
 - Sometimes net changes suggest stability, while gross changes reveal the underneath dynamics that would otherwise remain invisible.
- Due to dropouts longitudinal studies may be arduous and even frustrating, but the possibilities that come with panel analysis are worth the effort and sacrifice.

Examples of longitudinal studies

Tradition of longitudinal research in sociology

- Malmö, Sweden – the project started in 1928 and lasted nearly 60 years, led by T. Husen; professional careers of men (Husen 1969; Fagerlind 1975).
- The UK – two large edition of research covering all children born in March 1946 and in March 1958; data collected regarding health status and educational development (Douglas 1964, Davie et al. 1972; Fogelman 1983; Butler and Golding 1986);
- The US – in the first half of the 20th century eight major longitudinal research projects were implemented, producing an enormous variety of data on children's development (Bloom 1964);
- Russia – school and life careers of a cohort observed since 60. almost until today (D. Konstantinovskiy)
- Poland – S. Nowak (study on generational gap – 70.), A. Firkowska-Mankiewicz (life careers of young people with various IQs – 90.), Z. Kwieciński, K. Szafraniec (educational careers and generational experience with political transformation – since 70. till now).

A common experience

- The biggest challenge - to maintain contact with the respondents and track their fate (the alternative name: tracer studies).
- The major concern - to make sure that the natural and inevitable process of respondents dropping out from the study does not distort its final results.
- As a result: increased methodological sensitivity to time and a particular interest in strategies applied to data collection and analysis.
- The problem: While their descriptions may be found in numerous methodological publications, in practice a researcher who opts for this type of study must turn into 'DIY enthusiasts'.

The case study from Poland

The developing idea

- Launched in the 1970s, this study has followed the life paths of a cohort of people born in 1957 in the region representing the average level of socio-economic development.
- For many years the study focused on social conditions behind educational careers of youth from different backgrounds.
- In 80. the studied population was found to be representative of a sociologically interesting generation:
 - Born in the times of Communist Poland and shaped by that system, our respondents grew to be a generation of historical change.
 - Observed since they were 15 years old, they have evolved along with the history of Poland creating their own story.

The first five waves of the study

- The first research (1972) included entire cohort of school-age youth (over 7000 of students).
- The cohort was studied repeatedly – typically at critical points in life, i.e. at the time of choosing schools and taking decisions regarding further education.
- Aspirations and educational plans were confronted with the final educational decisions, personal abilities of pupils and their socio-cultural background.
- The data were collected through different methods and techniques, mainly in the form of surveys (questionnaires, psychometric tests, time budget diaries).
- The school-period included five surveys (1972-1977).

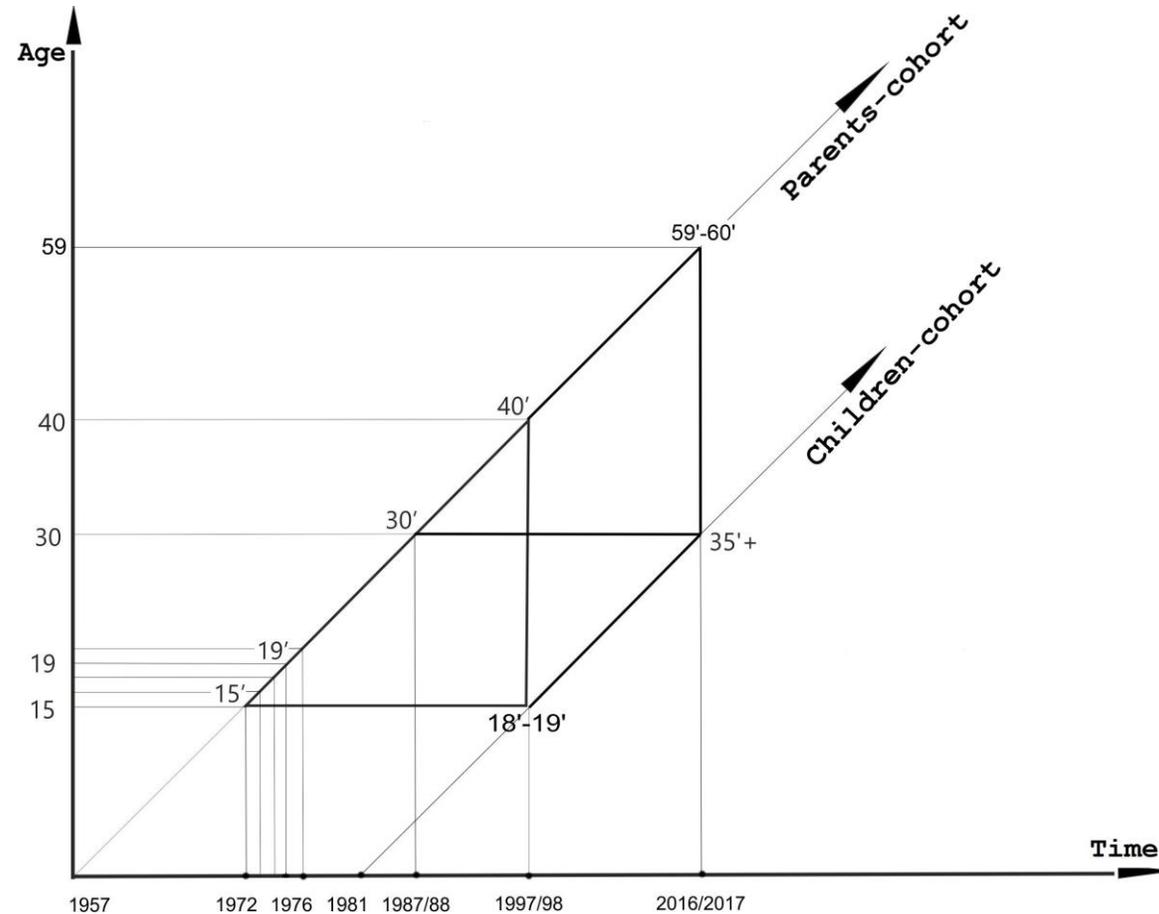
The sixth wave of the study – the end of socialism

- The subsequent (sixth) wave of the study took place in 1987-88, when the studied population turned 30, starting a new stage in their life and political system has been collapsing.
- This survey was focused on the socializing (biographical) and structural factors determining the life situation and identity of a generation shaped by real socialism.
- The biographical interview used in the survey was constructed around the question 'Who am I?' and the theory of anomie related to questions about identity provided the theoretical framework for this part of the study.
- Because the updating of personal data this was the largest and logistically most complex study in the entire project.
- The total number of effectively reached and interviewed respondents was 4831 (over 2000 addresses were lost).

Time of transition – the seventh wave of the study

- In the years of 1997-1998 the seventh survey on the population that was now **forty years old**, and tried to cope with new political and economic reality.
- For pragmatic (financial) reasons the sample was visibly reduced (from 4831 to 1100 people); the selecting variable – the respondents' social mobility
- The technique of collecting data – the interview questionnaires, with the content referred to the question about emergence of a new axio-normative order in post-communist Poland.
- The new component of this study – the adolescent children of our respondents, who open the new track of the study → *a cross-sequential design* (W.S. Schaie):
 - In such study several age groups belonging to different cohorts are studied and compared in several, repeated surveys.
 - The basic advantage of such study provides for a more precise isolation of age, cohort and social/ time effects.
- Sample-related problems

The design of the Toruń longitudinal studies



Time of the late transition - the eighth wave of the study

- The need for a closure the fate of both sociologically intriguing generations:
 - The original respondents were re-examined **at the age of sixty**, their children were aged 30+
- The aim of this survey was
 - not only to complement the life paths and generational experience with transformation,
 - but also to study the generational solidarity in the face of new challenges brought by the late transition (marked by expansive consumerism, crisis of global ideas and demographic imbalance).
- As usual the critical task was to update the contact data
 - The plan of doing 600 extensive questionnaire interviews in each generation ended with 360 interviews among 60-year olds and 240 among the young cohort.
 - Such result significantly limits the possibility to carry out a panel analysis.

Remedial solutions

- Anticipating this type of problems two other solutions were introduced to the study:
 - in-depth interviews in non-randomly selected generational pairs of respondents (30 cases)
 - and inclusion to our study aa external research done as a semi-panel on nationwide samples ('The Poles' study conducted since 80.)
- The first solution allows to use Geertz's concept of thick description, opening the space for more detail qualitative analysis
- The other one compensates for shortcomings of induction by enumeration – an unavoidable element of longitudinal studies.

General conclusions

- Advantages:
 - The collected material enables both quantitative and qualitative analyses.
 - Comparing the groups of respondents from different generations at the same time and those of similar age at different times provides space for various analytical experiments (with particular focus on age, cohort and context effects),
 - while adjusting the phenomena observed in the longitudinal study for trends revealed in studies with nationwide samples reinforces the statistical foundations for conclusions.
- Limitations:
 - Extrapolation the conclusion to general population – such study does not allow it, but ...
 - For sure such research provides us with what proponents of positivist epistemology value so much: the possibility to draw more accurate conclusions about the cause and effect.

Citation of some research results could be the „happy end“ of this lecture, but it is the material for another story

Thank you very much