

# Methodological challenges

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# The purpose of thesis

- Introductory training in scientific research  
(Initiation stage before serious scientific work)
- Production of new scientific knowledge, new approaches in research, promotion of paradigm shift (Thesis does not repeat old research problems, but is a creative up to date work)
- A personal status symbol and career step

# Scientific explanation

- Simple linear cause – effect explanation (Classic ideal: one cause and one effect; intervening factors are eliminated)
- Mutual cause – effect relations when effect influence back to cause. Specification difficulties are met because there are weak methods to indicate causal relations and explain specifying them (Problem: boxes and lines connecting them indicating that there is a mutual relation; but nobody knows what kind of relation)

# Descartes dualism

- Causality crossing boundary between physical and psychological
- A special dilemma: psychological (mental) causes of physical phenomena
- Another dilemma of brain research: what can be said about psychological phenomena on the basis of localization and activity of certain parts of the brain?
- Early social interaction – brain architecture

# Non-classic methodology (Vygotsky)

- Against ex post facto research: psychological phenomena cannot be studied afterwards. In early works only he writes about reconstruction
- Research has to be integrated with the origination of phenomena and functions
- “Genetic experiment” – intervention method?
- Higher mental functions (psychological systems) are experimentally produced

# Vygotsky's critique of classic experiment

- All experiments are based on stimulus – response framework and the essence of higher forms is not revealed
- Adequate experimental method is carried out on the level of higher mental functions
- 3 principles
  - Analyzing processes, not object
  - Explanation instead of description
  - Dialectical method (the process of change)

# The aim of psychological analysis

- Process analysis
- Reveals real, causal or dynamic relations
- Return to the source; reconstructs all points of development of a given structure
- The result should be a qualitatively new form that appears in the process of development

# Genetic experiment

- Background: general genetic law – new higher mental functions are first social relations (interpsychological stage) and after that they are internalized to individual functions (intrapsychological stage)
- In genetic experiment we should organize such a system of social relations, in which new higher mental functions and systems are born



# Vygotsky's experiment

- As an example often is referred to “double stimulation” as a genetic experiment
- But this is a problem solving situation where a neutral object is integrated by the subject to the structure of solution. It becomes a tool for solution.
- In this situation social relations are not important after the subject has adopted the task. This was not studied.

# Best genetic experiments?

- El'konin – Davydov system of developmental education starting ca. in 1960
- Problem: “In a classroom there may be 1 or 2 independent learners who are able to master theoretical thinking. But how the whole class could do the same?” (Vasili Davydov)
- What are the main characteristics of the experiment?

# El'konin – Davydov system

- What is the theoretical knowledge basis (basic concepts) behind every school subject, system forming idea of math, language etc.
- What kind of learning activity is necessary in order to learn and master theoretical thinking tools
- Theoretical thinking tools are learned at the beginning of school life during the 1<sup>st</sup> and 2<sup>nd</sup> grade. The rest will be their applied use.

# New type of learning interaction (G.A. Zuckerman)

- A new interpretation of learning activity forces to change learning interaction in the classroom (Thesis “Types of interaction”)
- The new object of teacher’s work is social interaction between children, not each individual child separately (Book: Introduction to school life)
- Introduction to literacy at preschool age based on El’konin’s work

# Critical questions: experiment

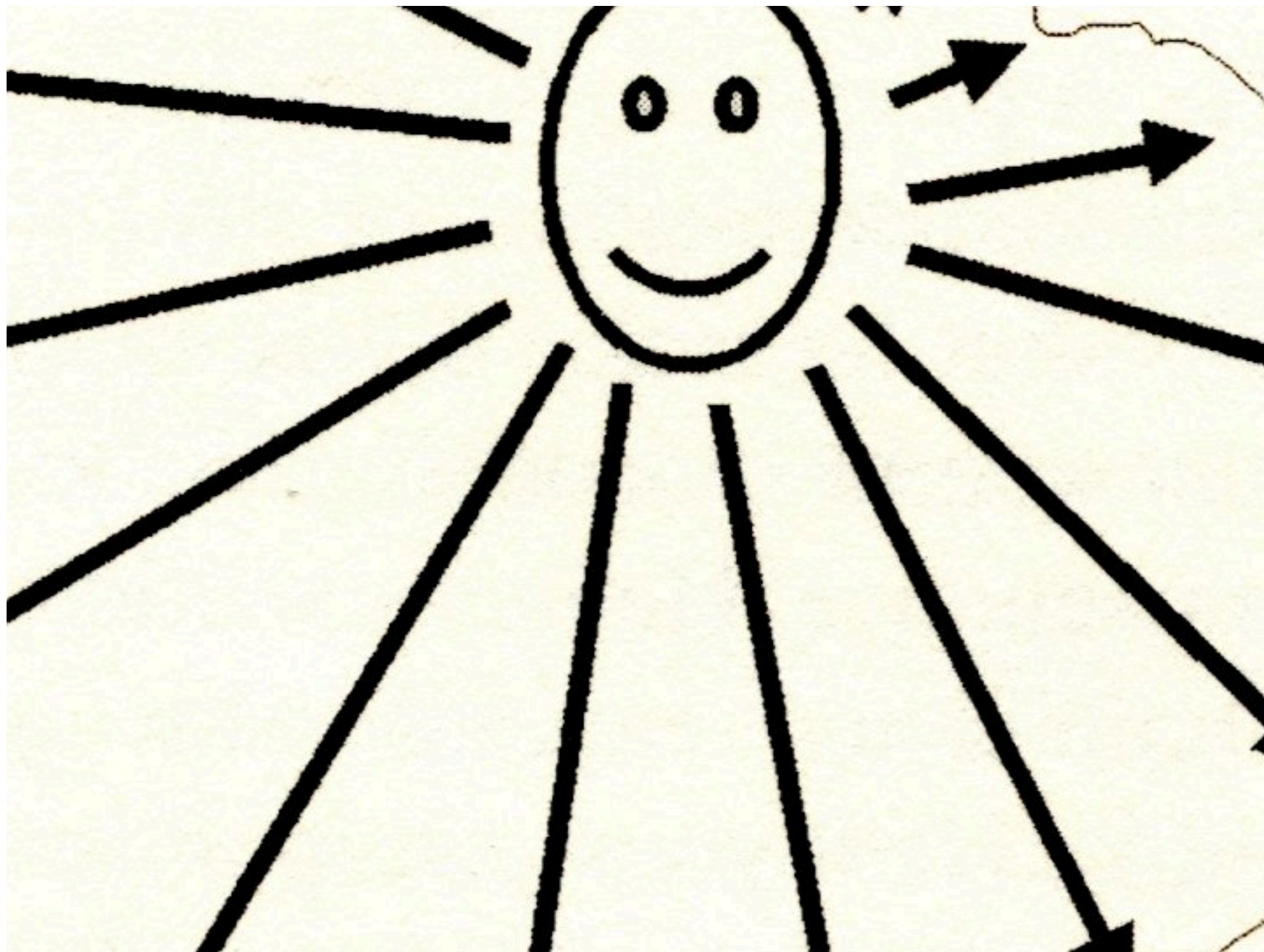
- Genetic experiment has a new function compared to classic experiment (From testing hypotheses and producing facts to originating new psychological functions and system)
- But are the procedures still linear: new functions are modeled, goals are set, experimental treatment planned and results evaluated and related to goals?

# Critical questions: experiment

- What is the role of the subject in genetic experiments. Is the subject just object of treatment (Zinchenko, El'konin jr., Zuckerman)
- Ideal and real forms (of behavior): Ideal forms are invitations and proposals. A subject (not agent) has an opportunity to answer to the invitation; take or leave and forget it. If taken it may become his real form.
- What is the role of subject? Does the subject make choices in genetic experiments?

# Social genetic experiments

- Vygotsky has the concept of “social situation of development”, which is individually most actual at crisis stages because transition to a new system of social relations takes place
- According to the general genetic law a new system of social relations should originate new higher mental functions by definition of the law. These “experiments” are spontaneous
- Should organized experiments focus on social





# Non-linear ZPD

- Children's initiatives and choices are important and may change the direction of activity (In joint pretend play improvisation rule "yes – and" and dialogic check may lead to negotiation outside role relations)
- Ideas define meanings and this may promote children's creativity and produce unexpected turns in activity processes
- Adult help should support child initiatives

# Non-linear experiment

- Play-world of creative play in our developmental play pedagogy
- One rule for adults: you are not allowed to force children to any activity
- Adults plan and organize play supporting activities, but children decide what they want to do (They can leave the activity at any moment).

## Some published sources

- SAGE Handbook of Play and Learning in Early Childhood (September 2013, on narrative basis of play)
- European Early Childhood Education Research Journal 2013, 21(2), 213 – 225 (on adult play guidance)
- International Journal of Educational Research 47(2008), 292 – 300. (on play-world as transitory activity system to school)