

Research paradigms of cultural- historical approach

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RESEARCH PARADIGM

- CONSISTS OF PHILOSOPHICAL PRESUPPOSITIONS, WHICH GUIDE OUR THINKING AND RESEARCH ACTIVITY (Not always conscious!)
- THE CONCEPT HAS BEEN USED TO DESCRIBE HISTORICAL DEVELOPMENT OF SCIENCES
- THE CHANGE OF PARADIGM \approx SCIENTIFIC REVOLUTION (KUHN)
- WHAT IS THE SITUATION IN PSYCHOLOGY AT THE MOMENT?

DOMAINS OF PARADIGMS

- ONTOLOGIA – WHAT IS THE NATURE OF BEING, EXISTENCE AND REALITY? BASIC CATEGORIES OF BEING AND THEIR RELATIONS?
- EPISTEMOLOGIA – WHAT IS THE NATURE AND SCOPE OF KNOWLEDGE (THEORY OF KNOWLEDGE)? HOW IS KNOWLEDGE ACQUIRED?
- METHODOLOGIA – HOW THE KNOWER ATTAINS KNOWLEDGE AND UNDERSTANDING?

Classic criteria of scientific knowledge

- 1) Objectivity
- 2) Reliability
- 3) Validity
- 4) Repeatability
- 5) Representativeness of samples
(GENERALIZATION FROM SAMPLE TO
POPULATION)

Objectivity

- ✓ Researcher's presuppositions should not influence the results of research
- ✓ Objectivity may be impossible with human subjects, but it should any way be the goal/ ideal of doing research

Reliability

- ✓ If the study is repeated in the same conditions the result should be the same as earlier
- ✓ Independent observers should write similar descriptions

Validity

- ✓ The collected material should correspond/ represent the phenomenon, which is claimed to be studied
- ✓ Types of validity
 - A. Construction validity e.g. A measuring instrument measures what it is claimed to measure (intelligence test measures intelligence and nothing else)
 - B. Internal validity. Changes of in dependent variable are caused by independent variable. Controlling measures are important!

Repeatability

- ✓ Other researchers get the same results using the same methods
- ✓ For example new born babies imitate facial expression they see. But other researchers did not get the same results using the same methods

Representative sample

- ✓ When groups are studied they often are too big for collecting data from all people
- ✓ Instead a sample representing all essential factors of population
- ✓ If the sample is not representative it is not correct to generalize results to any population

COMPETING APPROACHES

TRAITS	CLINICAL TRIALS	DESCRIPTIVE
PURPOSE	TESTING HYPOTHESES	GOOD FOR GENERATING HYPOTHESES
FUNCTION	DIRECT MANIPULATION, MEASURE, STATISTICAL ANALYSIS	REVEALING HISTORICAL CAUSALITY
POINT OF VIEW	LINEAR CAUSALITY	OBJECTIVE STUDY OF SUBJECTIVE EXPERIENCE

OBJECTIVE STUDY OF SUBJECTIVITY?

- It seems impossible to obtain objective knowledge from subjective experience. Scientific knowledge is assumed to be abstract, general, and formal. Concrete, specific, informal and personal has to be eliminated in coding. Particular things have value only as exemplars of general concepts (Packer, 2010)
- To understand a text one has to reconstruct the author's subjectivity (Dilthey)

Looking for disproving evidence

- It is necessary to avoid the temptation of making hasty conclusions only because some evidence hints about them. We have to be sure that we have evidence enough and made attempts to disprove it. If it is impossible to disprove detected relations we might talk about "objective" knowledge. But evidence is never final. The task of science is to disprove "eternal truths"

How to define a scientific method?

- A particular methodology or the way of posing questions and finding answers?
- Important questions or popular design?
- Qualitative research can answer only descriptive questions and quantitative explain by identifying causal mechanism?

Quantitative vs. qualitative research (biased view)

QUANTITATIVE	QUALITATIVE
Provides explanations	Provides only descriptions
Is objective	Is subjective
Studies causes	Studies experiences
Can test hypotheses	Can only generate hypotheses

Dilthey: Natural vs. human sciences

NATURAL SCIENCES	HUMAN SCIENCES
Provides explanation	Provides understanding
Fitting observed facts under general causal laws	Empathic attunement with another person's experiences
Study of nature	Study of mind
Requires study of the regularities of nature	Requires interpretation of the expressions of mind

Randomized clinical trial

- Evaluates a treatment intended to change people (e.g. foster learning)
- Compares two or more groups (one treated)
- Participants are assigned randomly
- Outcomes are measured (tests)
- Null hypothesis (no effect)
- No effect-differences by chance
- Analysis-statistical test-probability by chance

Science – logical positivism

- Scientific knowledge involves matters of facts not of values
- Goal – networks of knowledge
- Research based on measurement and logical inference
- Measurement is the objective application of an instrument
- Observation and theory are distinct

Science – logical positivism

- Scientific method is universal
- Scientific knowledge accumulates
- Scientific statements include no metaphysics only logical propositions and statements of empirical regularities
- Observations provide elementary statements
- Propositional logic combines them to theoretical statements

National Research Council 2001 (USA)

QUESTIONS	ANSWERS	METHODS
1. What's happening	A description	Case studies
2. Is there a systematic (causal) effect?	Causal connection: X caused Y	Randomized clinical trials. Quasi-experimental and correlation studies
3. What is the causal mechanism? How does it work?	A causal model	Longitudinal studies Artifact constructions

Comprehensive data

- Our findings often are based on samples, which are formed by personal liking (not random or stochastic sampling). Presumptions may influence findings through sampling even when there is no purpose of cheating. Our generalizations should be based on all possible representative cases. It is better to prefer modeling instead of correlations. Obs. There are several types of models! All are not good

Analysis of exceptional cases

- Sample average and other indicators hide interesting individual cases and relationships
- Qualitative analysis of individual cases may reveal much more than sample data.
- We should use so called chain sampling: 1. Find out from sample data exceptional cases on the basis of our research problems, 2. Carry out in depth qualitative case study of this second sample. E.g. Anketa – qualitative interview

Research questions and problems

- Descriptive questions

Information about what happened or is happening with out research object E.g. The researcher wants to describe the life situation of his subjects before intervention study starts. In this case it is possible to evaluate the effects of intervention by comparing before and after setting

Research questions and problems

- Normative research questions

Information from descriptive questions are compared to some standards or expectations

- Correlative questions

Looking for relations in order to explain. But correlation is not causal explanation! E.g. Correlation between the family size and emotional disturbances of children

Research questions and problems

- Influence

Causal relations between independent and depended variables are looked for.

The ideal often is to find a clear causal relation between two variables, but in life they are seldom (never?) met. In real life relations often are a mess of mutual dependences.

- Laboratory research contra real life research

- * Hypotheses in form: if....so

Research questions and problems

- Riddles

Research metaphor – solving a riddle (Alasuutari). Data collection continues until the riddle is solved. Evidence and testimony is collected using different methods as long as we have it enough.

Problems requiring explanation

- How or why X developed? The riddle of development
- How X functions? The riddle of mechanism
- What caused X or how X influences Y? The riddle of causes

Levels of research

- Theoretical level includes understanding about the character of phenomena and principles of explanation with help of which phenomena are delimited for study and development is explained. There are often several competing theories and explanation about the same phenomenon. E.g. Theories of play and learning.




Levels of research

- The level of models and theoretical units of analysis, which delimits a certain part of reality as the object of research. This level describes essential elements and their relations of a phenomenon on the basis of available knowledge. A model tries to crystallize essential knowledge about a phenomenon. There are several types of models and they have different explanatory potential! Further reading: Max Wartofsky

Levels of research

- Level of research methods and tools. Data and evidence is collected about the phenomenon under study with these. Different methods work differently in this task. This is why it is recommended to combine different methods in data collection – “methodological triangulation”

Levels of research

- Theoretical level

- Level of models

- Level of methods

- Empirical level = changing reality

Units of analysis

- Theoretical unit of analysis = how the research object is presented using concepts
- Empirical unit of analysis = what is looked for in data (presumptions about research object guide analysis)
- Unit of observation = how raw data is grouped in a way which reveals empirical unit of analysis (thematic wholes, events, topics)

Data and raw material in qualitative research

- Data = elaborated raw material ready for analysis (transcript of audio tape, a scheme of event on video tape)
- Raw material = interview tapes, observation protocols, field notes, video tapes

Three approaches

Features	Classic	Non-classic	Qualitative
Source of development	Heredity + environment	Culture	Experience, understanding
Who develops?	Individuals	Multi-subject	Individuals
Unit of analysis	Individual as unit	Personality	Individual experience
How to study development	Laboratory experiment	“Genetic experiment”	Hermeneutical methods

How science develops?

Classic psychology	Qualitative approach	Non-classic psychology
Scientific facts are cumulated and rejected	Possibilities are charted and enlarged	Zones of development are constructed
Facts are results of objective (controlled) experiments – causes and effects are documented	One case is enough to demonstrate that a phenomenon is possible	New cultures are created opening up new developmental trajectories
Generalization from sample to population	Generalization from one case: phenomenon is possible in general	Cultural creativity, cultural innovation
Finding strong bonds: causes and effects	In which circumstances a phenomenon is possible?	Revealing and developing cultural mechanisms of development

Methodological challenges created by Vygotsky

- What develops? Vygotsky's units of development: Psychological functions – system of functions – personality/ consciousness (structure and dynamics)
- Why development takes place? (Mechanism of development?) From biological to cultural at birth; Lower – higher functions; ideal – real forms; social relations – internalized individual functions
- The unit of analysis of development: molecular unit (on atomic level development is lost)

Challenges created by Vygotsky

- Development can be studied in statu nascendi only = artificial production of development; ex post facto study is impossible
- “Genetic experiment” – what kind of experiment ≠ natural scientific experiment – the object of study = subject involvement
- Crisis contra latent stages and periods of human development – the activity type or leading activity = a stage of development (e.g. El’konin)

Challenges created by Vygotsky

- What is the content and relations between central psychological concepts (structure, system) of human cultural development: culture, consciousness, individual, personality, lower and higher functions
- Did Vygotsky solve the problem of dualism in psychology? (lower – higher functions)
- Continuity: Vygotsky – Leontiev – Luria

How to study cultural development?

- Critique by Shedrovitsky: time lines describing changes are constructed, but the mechanism of development is not changing e.g. Piaget (Butterworth et al. present the same critique)
- Stages in development are descriptions, but the main idea of science is explanation! Why and how qualitative changes are born?
- How qualitatively new psychological systems are constructed at crisis periods? (Is a new type of motivation = personality level unit?)

What can be studied empirically?

- Is it possible to study development empirically?
- We think that theoretical study only equals Vygotsky's unit of analysis (personality) = modeling or system construction
- We need new types of dynamic modeling because static structure models are too simple
- There are attempts: measurement – changes in time – development (e.g. Sigel). These lack a theory!

From theory to empirical level and back


- Construction of “genetic experiments”
- Manipulation and restricting experimental settings is not possible as in classic experiments because self change is aimed at
- Primary task with human subjects: subject’s need and motive for self change – indirect guidance through ideal forms and personality forming methods
- Secondary task: joint problem solving

Levels of research

- Theoretical level

- Level of models
- 

- Level of methods
- 

- Empirical level = changing reality
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Evidence of development

- Where to look for evidence/indicators of development?
- Human conscious action (Zinchenko 'postupok') serve as evidence \neq scientific measurement (objective facts)
- Challenge: how to study qualitative changes from one system to another (personality 1 – personality 2)
- Dilemma: surrounding culture does not accept the change as development – regressive change