Examples from Polish publications:

* *Badanie zjawiska niepełnosprawności w przekroju powiatów*
* *zastosowanie analizy wielowymiarowej do badania wybranych zjawisk społecznych.*
* *badania o charakterze metodologicznym, analitycznym i symulacyjnym*
* *badanie własności estymatorów*
* *dane z badania reprezentacyjnego*

a **study** is a single research project

a **survey** is a method of data collection

a measurement

**research into / on** a subject - the act of performing research

**a body of** research – accumulated research on a given topic

**a strand of** research (*nurt*) – a line of research, a particular series of published articles on the same topic (typically at least 10)

**INVESTIGATE = RESEARCH = STUDY = EXPLORE**

**Basic (pure, fundamental)** research s………s to improve scientific theories for a better understanding or prediction of natural or other phenomena

**Applied research** uses scientific theories to develop technology or techniques to intervene and alter natural or other phenomena

**Exploratory research** is c……………d for a problem that has not been studied more clearly, intended to establish priorities, develop operational definitions and improve the final research design

**Descriptive research** is used to describe characteristics of a population or phenomenon being studied. It does not answer questions about how/when/why the characteristics occurred. Rather it addresses the "what" question. (cf. *cel poznawczy*)

**Explanatory research** is an attempt to connect different ideas and to understand the different reasons, causes, and their effects.

**Primary research** (*badania pierwotne*) is defined as a methodology used by researchersto collect data directly, rather than depending on data collected from previously done research

**Secondary research** involves the summary, collation and/or synthesis of existing research

**Qualitative research** is a scientific method of observation to gather non-numerical data. This type of research refers to the meanings, concepts definitions, characteristics, metaphors, symbols, and description of things and not to their counts or measures.

A **longitudinal study** (or **longitudinal survey**, or **panel study**) is a research design that involves repeated observations of the same variables (e.g., people) over short or long periods of time (i.e., uses longitudinal data). It is often a type of observational study, although they can also be structured as longitudinal randomized experiments.

A **cross-sectional study** (or **cross-sectional analysis**, **transverse study**, **prevalence study**) is a type of observational study that analyses data from a population, or a representative subset, at a specific point in time—that is, cross-sectional data.

In **inductive research**, the goal of a researcher is to **infer** theoretical concepts and patterns from observed data. In **deductive research**, the goal of the researcher is to test concepts and patterns.

**Methodology** is the systematic, theoretical analysis of the methods applied to a field of study. It comprises the theoretical analysis of the body of methods and principles associated with a branch of knowledge. Typically, it encompasses concepts such as paradigm, theoretical model, phases and quantitative or qualitative techniques. A methodology does not **set out** to provide solutions—it is therefore, not the same as a method. Instead, a methodology offers the theoretical **underpinning** for understanding which method, set of methods, or best practices can be applied to a specific case, for example, to calculate a specific result.

**NOTE:** *Methodology* and *method* are not interchangeable. In recent years, however, there has been a tendency to use *methodology* as a "**pretentious** substitute for the word *method*". Using *methodology* as a synonym for *method* or *set of methods* (*metodyka*) leads to confusion and misinterpretation and **undermines** the proper analysis that should go into designing research.

A **research paradigm** is a distinct set of concepts or **thought patterns**, including theories, research methods, postulates, and standards for what constitutes **legitimate contributions** to a field.

**Paradigm shifts** tend to appear in response to the accumulation of critical anomalies as well as the proposal of a new theory with the power to encompass both older relevant data and explain relevant anomalies. New paradigms tend to be most dramatic in sciences that appear to be stable and mature. Some examples of paradigm shifts include:

* in physics, the transition from inaccurate Aristotelian mechanics to Newtonian mechanics
* in genetics, the shift from non-scientific beliefs about inheritance to systematic rules formulated by Gregor Mendel
* in medicine, the transition from "clinical judgment" to evidence-based medicine
* In social psychology, the transition from **p-hacking** (a.k.a **data fishing**, **data snooping**, **data butchery**) to replication

It is important that a research can demonstrate a **novelty**, or **research impact** (*nowum, wkład naukowy*) of their studies. The **impact agenda**[[1]](#footnote-1) is the expectation that research will have a demonstrable academic, economic and/or societal impact. It can also be defined as an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia.

**Academic impact refers to a demonstrable** **contribution** that excellent research makes to academic advances, across and within disciplines, including significant advances in understanding, methods, theory and application.

The increasing emphasis placed on novelty brings significant dangers. As it becomes more and more important for scientists to be “the first to demonstrate” some claim, the influence of the **priority rule[[2]](#footnote-2)** will increase and more scientists will feel pressure to sacrifice rigor for speed of publication.

1. the term used by the UK’s Higher Education Funding Council for England (**HEFCE**) to assess performance in the Research Excellence Framework (**REF**) [↑](#footnote-ref-1)
2. **Priority rule** awards the most recognition to the first investigator to support a hypothesis, which is an especially powerful incentive in science. [↑](#footnote-ref-2)