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| RESEARCH DATA AND METHODS  |

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|  | **KEY CONCEPTS** | **ADVANTAGES** | **DISADVANTAGES** |
| **RESEARCH** | * Scientific Method
* Theory
* Hypothesis
* Operational Definitions
* Replication
* Validity vs Reliability
 | * dispel “belief bias”
* dispel illusory correlations
* informs basic research (knowledge) and applied (practical solutions) research
* longitudinal/cross-sectional research
 | * ethical or methodological breaches
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| **DESCRIPTIVE METHODS** | Case Studies | Detailed study of one or more cases in great depth to suggest hypotheses to test, i.e. Freud’s cases, Piaget’s children | Given cases may be *atypical*, limited generalizability to larger groups (validity) |
| Surveys | A method to describe and make correlations; many “cases,” less depth compared to case studies; data based on individual reports/opinionsSome “economy” reaching larger numbers of respondents | Wording effects/”framing” issues, i.e. “aid to the needy” or “welfare”Sampling errors like sample size (too small) or sample selection (not random) |
| Correlational studies – how two or more factors relate to each other * direct correlation
* indirect (inverse) correlation
 | May be used to predict tendencies, never causal (cause and effect) relationships |  |
| **EXPERIMENTAL METHODS** | Experiments | Clearest way to determine cause and effect relationship by manipulating a variable (IV) and recording changes in dependent variable (DV)Control – random selection of subjects and random assignment to experiment and control groups.Single/double blind to control placebo effectObjective (statistical data) comparisons, i.e. central tendency (mean/medians) and variability (standard deviation) | Confounding /extraneous (uncontrolled) variables bias results Laboratory presents an “artificial” situation that may reduce real-world application or generalizability (external validity)Methodological errors (internal validity)Experimenter bias/expectancy effectsConditional bias (physical) – temperature, time of dayOrder effects  |