

Hilliard's Single Case Methodology

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The Basic Logic

- Single case research is often viewed merely in terms of its sample size:
- $N = 1$ research
- More appropriate is to view single case research as a sub-class of *intrasubject* research
- Where aggregation across cases is avoided
- And
- Generality of findings is addressed through replication on a case-by-case basis.

Hilliard RB (1993) Single case methodology in psychotherapy process and outcome research. *J. Consult. Clin. Psychol.* 61: 373-380

SCR as Intrasubject Research

- Variation within subject
- and
- Variation across subjects
- Intrasubject variation implies that a variable is free to vary within individual subjects.
- Each variable can only take one value at a specific time point within an individual;
- This repeated measurements of the variable(s) over time are involved.

Process

- Intrasubject variation is relevant to psychotherapy process research:
- the study of patient-therapist interaction within the session.
- The term *process* implies the temporal unfolding of variables within therapeutic dyads.

Therapeutic Change

- Greenberg (1986) has argued that if we are ever to discover what aspects of a particular psychotherapeutic modality actually result in therapeutic change and how they do so,
- we must break down global outcome into a series of smaller interrelated changes
- And attempt to discover how the therapist's intervention and patient's responses contribute or explain these smaller changes.
- Greenberg LS (1986) Change process research. *J. Consult. Clin. Psychol.* 54: 4-9

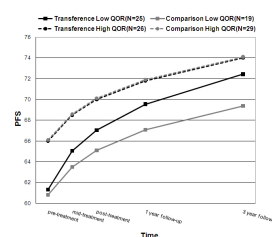
Aggregation Across Cases

- After assessing intrasubject variation directly, one is faced with the question of whether to aggregate these measures of intrasubject variation across a number of subjects or to analyze the data for each subject separately.
- SCR refers to the situation within intrasubject research in which the data are NOT aggregated across any subjects, even as few as 2; they are analyzed on a case-by-case basis.

Why not?

- Aggregating across subjects prematurely may be highly misleading when the basic form of the relations (between two variables) is different across subjects.
- Example:
- A certain class of interventions (e.g. transference interpretation) may lead to insight in one type of patient, to greater resistance in another type of patient, and to no impact on a third type of patient.
- Obviously, if one were to fail to segregate the three types of individuals before the data analysis, the average impact of the intervention may very well appear to be a flat curve.

Psychotherapy with and without Transference Interpretation



Høglend P, Bøgwald K, Amlo S, Marble A, Ulberg R, Sjaastad Mc, Sørbye O, Heyerdahl O, Johansson P (2008) Transference interpretations in dynamic psychotherapy: Do they really yield sustained effects? *Am J Psychiatry* 65: 763-771

Homogeneity

- One a phenomenon is sufficiently well understood at the single case level,
- intelligent aggregation may be possible.

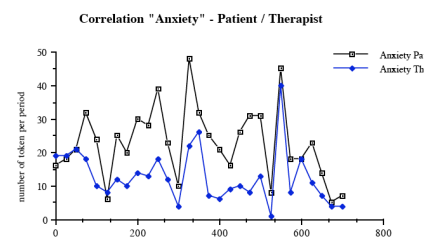
Aggregation within Subjects

- Aggregation within subjects may prove to be misleading as aggregation across subjects.
- Example:
- If one aggregates within a single subject over different phases of therapy (e.g. beginning, middle and end), and the relation between the examined variables varies across the different phases, it is very possible that the systematic patterns within each phase will be obscured.

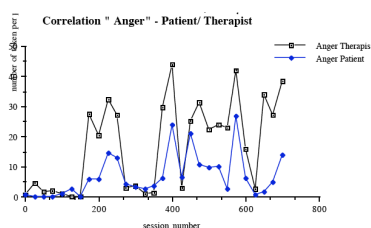
Anxiety-Anger-Pleasure

- In one of our first studies on the patient Christian Y
- we studied the correlation of the frequency of three nouns
- ANXIETY, ANGER and PLEASURE in a sample of 5x10 sessions.
- In the beginning phase ANXIETY was highly positively correlated to the PLEASURE;
- In the endphase the correlation of ANGER to PLEASURE dominated.
- Kächele H, Schaumburg C, Thomä H (1973) Sprachliche Elemente als Interaktionsvariable in der psychoanalytischen Prozessforschung, in: H Thomä, H Kächele and C Schaumburg (Hrsg) Psychoanalytische Verlaufsforschung. Abteilung Psychotherapie, Ulm

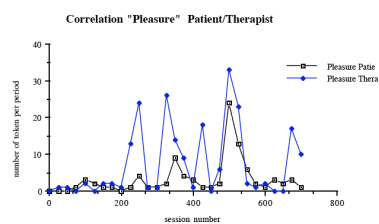
Anxiety Pat -Ther



Anger Pat - Ther



Pleasure Pat - Ther



P-Factor Analysis

- Cattell RB, Luborsky L (1950) P-technique demonstrated as a new clinical method for determining personality structure. *J. Gen. Psychol.* 42: 3-24
- Luborsky L (1953) Intraindividual repetitive measurements (P-technique) in understanding psychotherapeutic change. in: OH Mowrer (ed) *Psychotherapy. Theory and Research*. Ronald Press, New York, pp 389-413

Luborsky's ShowCase

- Young man suffering from stomach ulcer
- five times for 10 weeks
- Questionnaires and a session on the couch
- 'Up' and 'down' were correlated to mood swings
- Luborsky, L. (1996). The context for stomach ulcer pain. In L. Luborsky (Ed.), *The Symptom-Context Method* (pp. 177-199). Washington, DC: American Psychological Association.

Multivariate Process Research

- Czogalik, Dietmar; Russell, Robert L.
- Interactional structures of therapist and client participation in adult psychotherapy: P technique and chronography.
- Journal of Consulting and Clinical Psychology, Vol 63(1), Feb 1995, 28-36.
- doi: [10.1037/0022-006X.63.1.28](https://doi.org/10.1037/0022-006X.63.1.28)

Multivariate Process Research

- In previous studies, the utterances of 6 clients and their therapists in early, middle, and late sessions were rated on 34 and 39 speech categories, respectively. **P-technique analyses** revealed 4 client and 4 therapist factors. For the present study, therapist and client utterances were assigned factor scores. A 17×17 correlation matrix was constructed, consisting of correlations across 4 lagged utterances (therapist-client-therapist-client), with each utterance represented by 4 factor scores and a score for the third from which the utterance was sampled. all rights reserved)

Multivariate Process Research

- Principal-components analysis of this matrix revealed 4 therapist–client interaction factors:
- Mutual Therapeutic Engagement, Therapeutic Negotiation, Undirected Client Reminiscence, and Sustained Therapist Work.
- Unsuccessful cases deviated most from successful cases on at least 1 factor.
- Discussion highlights the power of **P technique** to reveal structures of psychotherapeutic discourse.

Extensive and Intensive Design

- The terms *extensive* and *intensive* designs, introduced by Chassan (1979) to distinguish between single case research and group research, capture the difference between single case research, which involves gathering large amounts of data on a limited number of subjects,
- and
- group research, which involves gathering a small amount of data on a large number of subjects.
- Chassan JB (1979) Research design in clinical psychology and psychiatry. Appleton-Century-Crofts, New York

Project TR-EAT

- 1200 eating-disordered patients in 50 hospitals nationwide.
- Questionnaires
- EDI, SCL-90, Narcissm Inventory, Freiburg Personality Inventory
- Measurement points
- Beginning, end of treatment and follow-up 2.5 years after beginning
- Kächele H, Kordy H, Richard M, Study Group TR-EAT (2001) Therapy amount and outcome of inpatient psychodynamic psychotherapy of eating disorders. Results of a multi center study across Germany. Psychother Res 11: 239-257

Generality Within SCR

- The basic approach to establish the generality of one's findings within a single-case paradigm is expressed by Thorngate (1986):
- „To find out what people do in general, we must first discover what each person does in particular, then determine what, if anything, these particulars have in common.....
- Nomothetic laws lie at the intersection of ideographic laws; the former can be discovered only after we find the latter.“ (pp. 75-76).
- Thorngate W (1986) The production, detection, and explanation of behavioral patterns. in: J Valsiner (ed) The Individual Subject and Scientific Psychology. Plenum Press, New York, pp 71-93

Replication: direct or systematic

- **Direct replication** refers to the attempt to replicate the findings in subjects that are similar in terms of the individual-difference variables that are viewed as affecting the phenomenon of interest.
- **Systematic replication** refers to the attempt to show that the findings differ in predictable ways when one selects subjects that differ along the critical individual-difference variables.

Vanderbilt I Study

- Strupp (1980a-d) presented a forward-looking example of the forms that both direct replication and systematic replication can take with psychotherapy research.
- In a series of four case studies, he compared four sets of 2 patients, each of the 2 patients having been treated by the same therapist. All 8 of the patients were highly similar in terms of certain individual-difference variables (diagnosis, sex, age, and occupation), but within each pair was 1 patient with a good outcome and 1 with a poor outcome.
- Strupp HH (1980) Success and failure in time-limited psychotherapy: a systematic comparison of two cases (Comparison I). Arch. Gen. Psychiatry 37: 595-603

Basic Categories of SCR

- A) quantitative vs qualitative
- B) experimental vs passive-observational
- C) context of discovery vs context of justification
- Three basic categories of SCR:
 - (a) single-case experiment
 - (b) single-case quantitative analysis
 - (c) case studies

Single-Case Experiment

- Single-case experiment involves quantitative data and direct manipulation of the independent variable.
- Single-case experiment have been conducted almost exclusively within behavioral oriented research.
- ABAB – Design
- This tradition has reached a high level of methodological sophistication.
- Kazdin AE (1982) Single case research designs: Methods for clinical and applied settings. Oxford University Press, Oxford

Single-Case Quantitative Analysis

- Quantitative techniques for analyzing the temporal unfolding of variables
- such as time-series analysis, sequential analysis, and growth curve analysis
- without direct manipulation of the variables studied.
- Either generation of hypothesis or testing may be the goal.
- Spence DP, Dahl H, Jones EE (1993) Impact of interpretation on associative freedom. *J. Consult. Clin. Psychol.* 61: 395-402
- Kächele H, Leuzinger-Bohleber M (2009) Dream series as process tool. in: H Kächele, J Schachter and H Thomä (eds) *From psychoanalytic narrative to empirical single case research*. Routledge, New York, pp 266-278

Case Study

- Case study is proposed for designs involving qualitative data.
- This approach has been associated primarily - although not exclusively - with psychoanalysis, going back to Freud's classic case studies.
- Both advocates and critics of case study methodology have identified this approach with hermeneutic epistemology.
- This has been challenged by Edelson (1985)
- Edelson M (1985) The hermeneutic turn and the single case study in psychoanalysis. *Psychoanal. Contemp. Thought* 8: 567-614