

Describing Social Science Methods in Proposals

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Overview

- Brief Overview of CAHSSA & SSRIC
- Describing/explaining methodology in grant proposals:

Guest Presenters:

Holli Tonyan, Professor of Psychology, California State University, Northridge

Erin Ruel, Professor of Sociology, Georgia State University

- Qualitative, quantitative, & mixed methods proposals
- Q&A
- Virtual Networking

Overview of CAHSSA

*California Alliance for Hispanic-serving
Social Science Advancement*

CAHSSA: California Alliance for Hispanic-serving Social Science Advancement

- Funded by a 3-year Build and Broaden 2.0 NSF grant
- Webinars available to CSU and UC faculty
- Writing groups/retreats
- Understanding barriers and proposing solutions

Overview of SSRIC

Social Science Research & Instructional Council

CSU Social Science Research & Instructional Council (SSRIC)

- 21 of 23 CSU Campuses have representation
- Annual faculty awards: CalSpeaks Fellowship, ICPSR Stipends, Instructional Materials Awards
- Access to secondary data sources: ICPSR and others
- Annual Student Research Conference
- Workshops
- Coming Soon: possible grant support (\$ +/-or admin)
- *Billy Wagner, Executive Director of SSRIC: billy.wagner@csuci.edu*

Explaining Methodology

Poll: *Have you applied for an external grant before?*

How should you explain your methods?

- It is important to provide enough information for the reviewers to know exactly how you will carry out the project.
- But exactly *how* much information (and what information) is appropriate?
- Quantitative, Qualitative, & Mixed Methods

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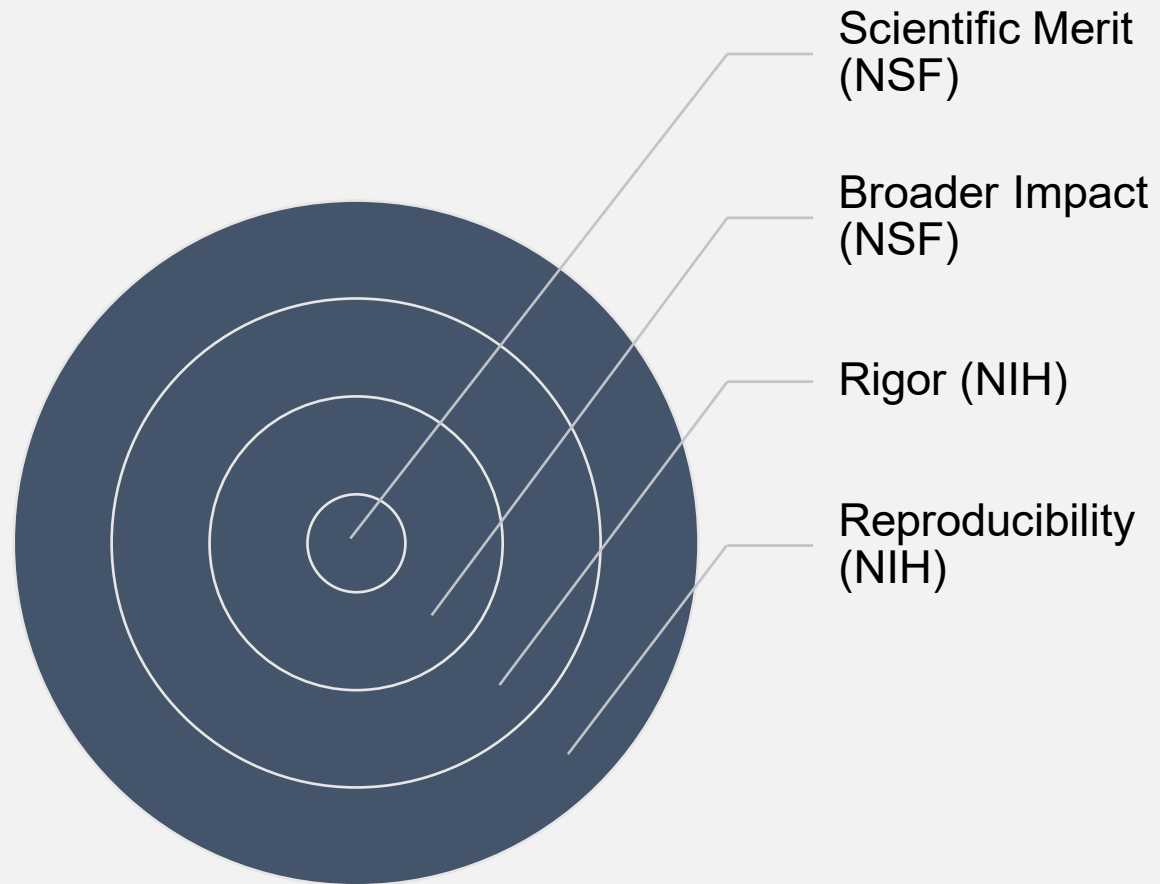
Including Qualitative Methods in Research Proposals

Holli Tonyan, Ph.D.

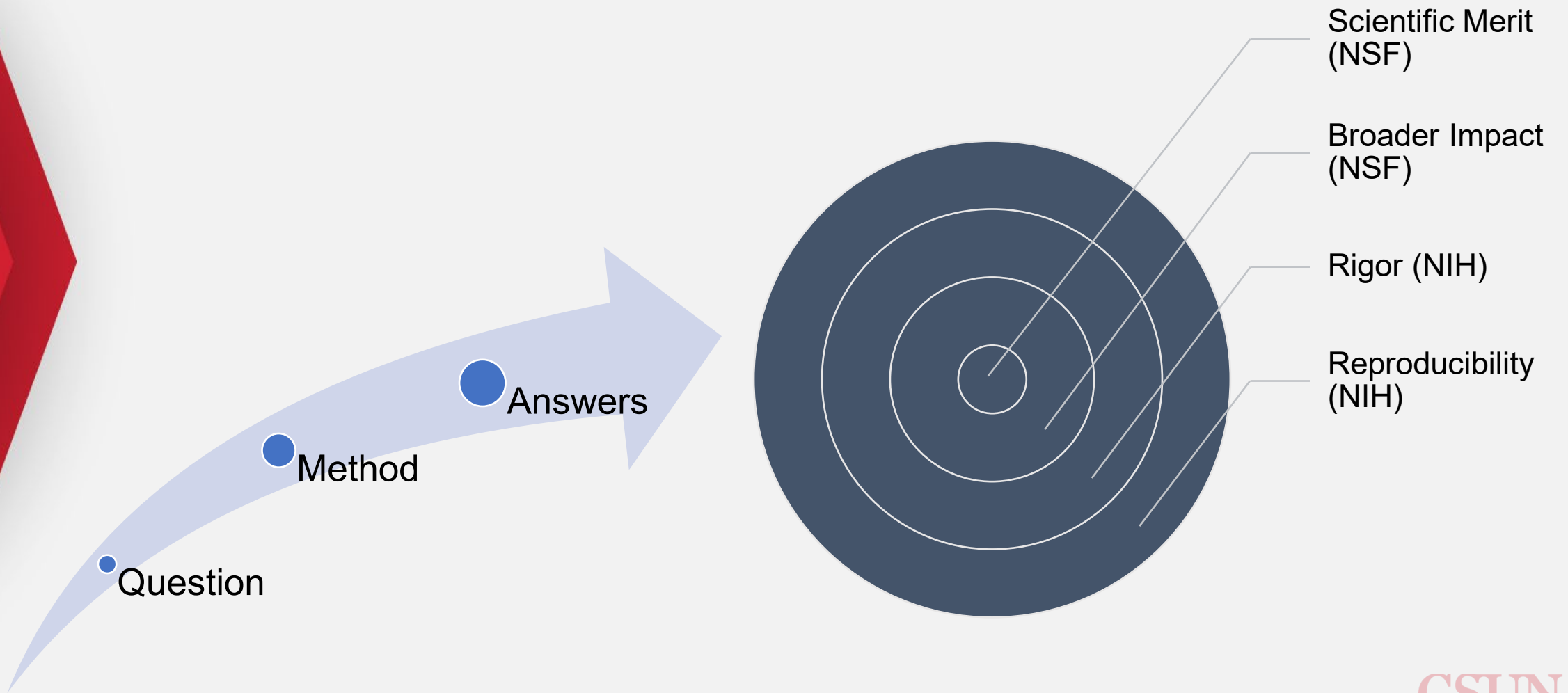
Professor of Psychology

California State University, Northridge

To get funded...



Methods must show you can hit your target



Methods are Central to Your Proposal

Questions

- (Practical or scientific problem)
- Answerable questions to advance knowledge

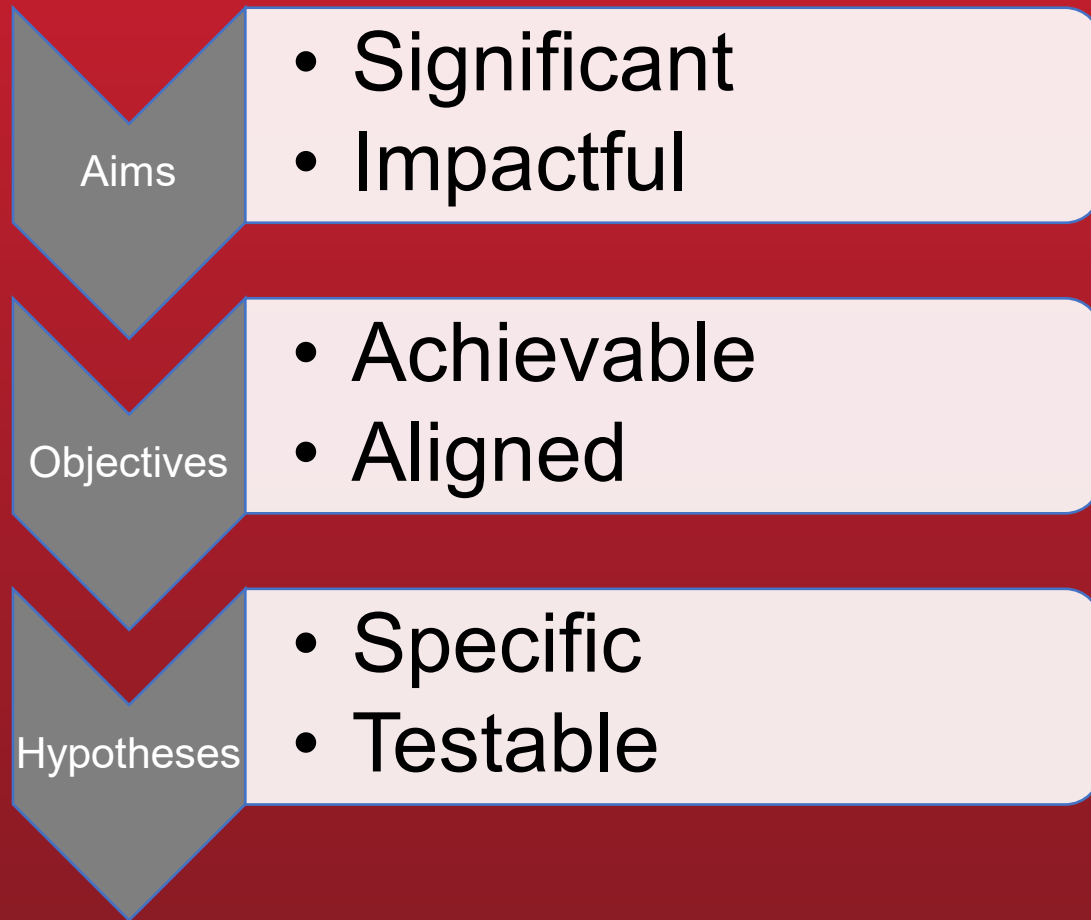
Method

- How will you generate evidence?

Answers

- What answers are possible?
- How will those answers be useful?

Quantitative



Qualitative

- Qualitative methods do not lend themselves as readily to
 - “variables”
 - Hypothesis testing



How can you harness the strengths of qualitative research...

...in a format designed largely for
quantitative research?

**Workshop ON
INTERDISCIPLINARY STANDARDS FOR SYSTEMATIC
QUALITATIVE RESEARCH**

**Cultural Anthropology, Law and Social Science,
Political Science, and Sociology Programs**

**National Science Foundation
Supported Workshop**

Report prepared by:

**Michèle Lamont
Harvard University**

**Patricia White
National Science Foundation**

Strengths of Qualitative Research

- “rich methodological tools...including interviews, archival research, and ethnography are particularly well-suited for examining complex social structures, processes, and interactions that **require consideration of numerous dimensions and levels of analyses**” (p. 10).
 - “micro-social phenomena”
 - “cultural understandings actors bring to social experience, interactions, and institutions”
 - “unraveling the mechanisms underlying causal processes, especially those that **occur over time**” (p. 10)
 - “Thick” description and holistic comparison across cases
 - Process tracking: examining how processes emerge and evolve
 - Sense-making and subjective experiences

Lamont, M., & White, P. (Eds.) (2008). Workshop on interdisciplinary standards for systematic qualitative research. Washington, DC: National Science Foundation

When are qualitative methods most appropriate? (In MUCH to simple a summary)

| | Hypothesis Testing | Context-Specific Analysis |
|--|--|---|
| Goal | Generalizability and universal law-like developmental trends | Usability and accuracy for each case and each context |
| Sampling | Random | Purposive |
| Criterion for judging the quality of research | Internal validity valued over external validity | External validity valued over internal validity |
| Procedures | Standardized, uniform | Systematic, planned variations |

Most important is that your methods advance your aims!

Standards Shared with Quantitative

- Clear research question well-framed
- Define and operationalize **key constructs** and specify **expected relationships** between concepts
- Choose the **type and source of data** that will enable the researcher to answer the research question
- Demonstrate the **significance** of the project
- Undertake systematic and thorough data collection
- Provide a careful articulation of the connection between theory and data
- Conduct systematic and thorough **analysis** of data, specifying the particular strategies used to identify patterns and relationships in the data
- Pay close attention to **negative cases** and explore **alternative explanations** when available

Lamont, M., & White, P. (Eds.) (2008). Workshop on interdisciplinary standards for systematic qualitative research. Washington, DC: National Science Foundation

Standards Unique to Qualitative Research

- Small samples can sometimes yield big insights
 - Choose cases carefully to reveal regularities between categories that can be overlooked in large-sample studies
 - Harness depth and detail
 - Illuminate the social, contextual and dynamic
- Systematic sampling can still be scientific, even if it is not random
 - Selection methods and data generation must be closely aligned with the purpose of the study
 - Flexibility of qualitative methods can be good for hard-to-reach populations
 - Ensure you have both breadth of sample and depth of information
- Meaningfulness beyond the specific data gathered must be intentional and specified (as opposed to generalizable)

Lamont, M., & White, P. (Eds.) (2008). Workshop on interdisciplinary standards for systematic qualitative research. Washington, DC: National Science Foundation

Sampling

How will you harness the strengths of qualitative research in the sample size and sampling strategies?

What is your sampling plan?

- Characteristics of population
 - Plan for drawing from that population
- Plan for recruiting sample
 - Inclusion/exclusion criteria
 - Representativeness of sample to the population
- Approaches to sample size in qualitative research
 - **Range:** how many interviews/observations will you need *to capture a representative* view of the phenomenon under study
 - **Redundancy or saturation:** how many individuals/cases do you need to study until no new concepts emerge from analysis indicating that the boundaries of the phenomenon have been reached
 - **Stratification:** representing categories along a single dimension (e.g., socioeconomic status)



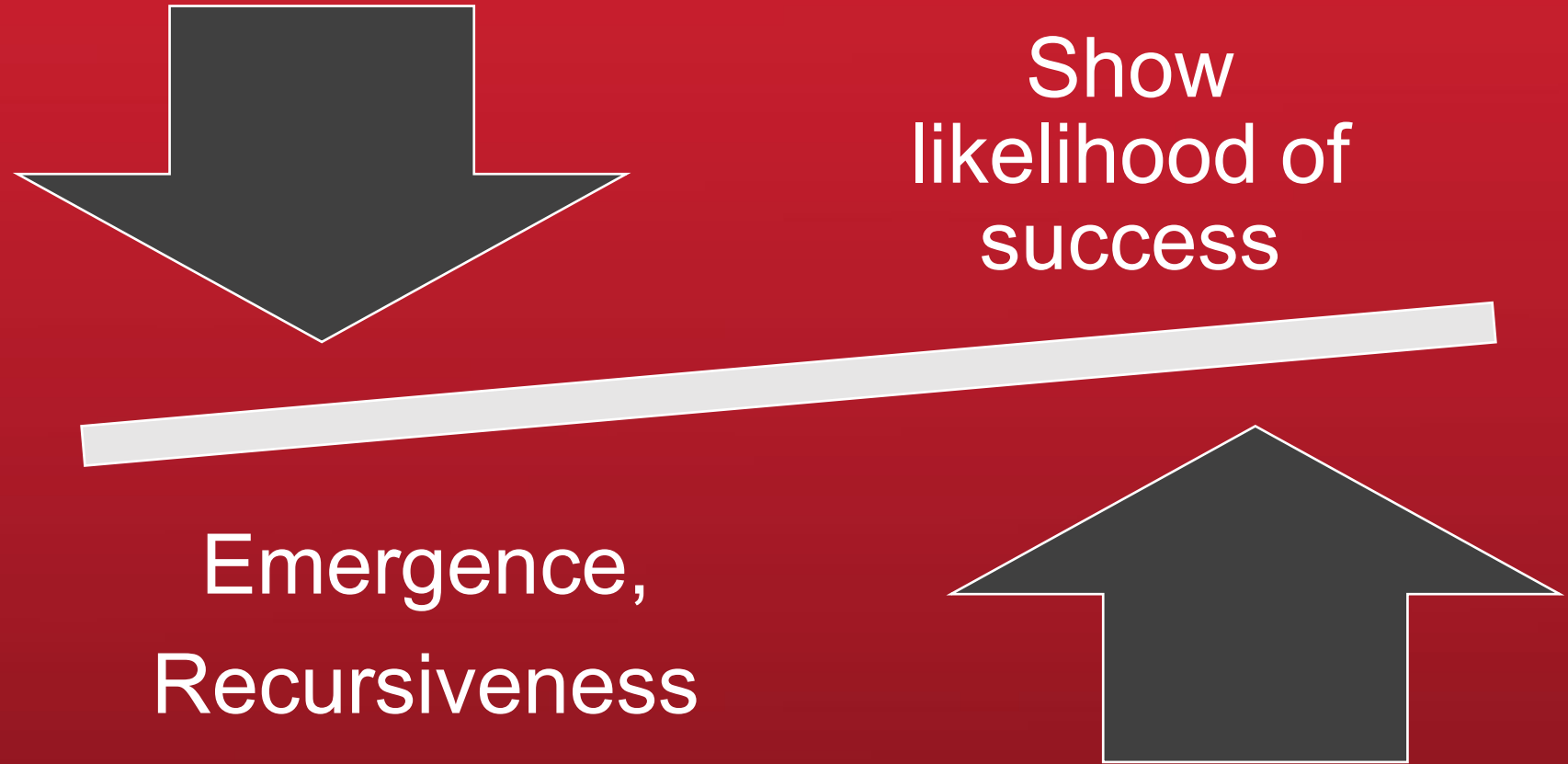
Example: Hard-to-Reach Population

- Licensed Home-Based Child Care
 - Three naturally-occurring groups
 - In target program
 - In an alternative program
 - Not in any program
 - Two different geographic areas
- Used measures similar to a national survey to be able to compare local findings with national trends

Getting from theory and questions to measurement

Harnessing the strengths of qualitative research while showing you can succeed

Key tension in grants for qualitative research

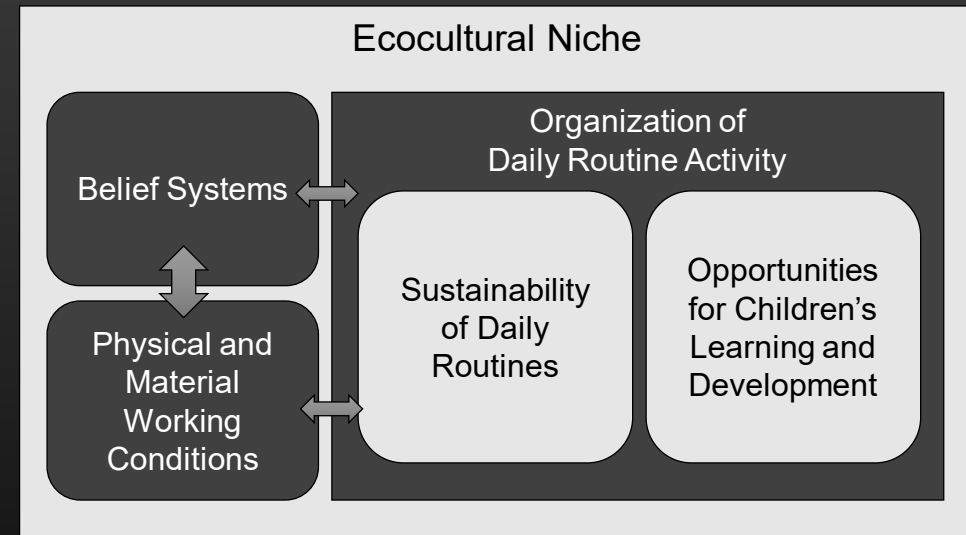


Guide Reviewers to the Key Constructs Measured

- I use bold font to highlight key constructs in the background & significance section
- I cite “best practices” documents for qualitative research
- I cite “expectations” to show that the methods I propose will get to measurable outcomes
- I show the alignment between aims, objectives, and “expectations”

- For example

Figure 1. Quality as sustainability with opportunities for learning and development in an ecocultural niche.



For example

| Research Objective | Research Question |
|---|---|
| 1. To <u>supplement</u> the RTT evaluation of QRIS effects by focusing on family child care providers' working conditions and engagement with QI. Specifically, we will compare providers who are "in" QRIS, "in" QIS, and "not in" either QRIS/QIS. | <ul style="list-style-type: none">• What are the similarities and differences among providers who are "in" QRIS, "in" QIS, and "not in" either QRIS/QIS (<u>group</u>) in <u>working conditions</u>, <u>beliefs</u>, <u>opportunities for learning and development</u> and <u>sustainability</u>? |
| Expectation: <ul style="list-style-type: none">• <u>Working conditions</u> (economics and enrollment) will constrain desire to participate and/or remain in QRIS/QIS, engagement in PD, and desire to remain in the workforce.• Better <u>working conditions</u> will be associated with higher <u>engagement in/desire for QI</u>.• Engagement with QI will be higher when QI aligns with <u>beliefs</u> and <u>working conditions</u>. | |
| Outcome: <ol style="list-style-type: none">1. A systematic analysis of the working conditions in diverse family child care settings to inform the RTT-ELC implementation, engagement, communication and TA. | |

Measurement and Analysis...

- What methods will you use to generate data?
 - Provide topics and sample questions

Sample Topics for Interview (in appendix)

Daily Routine

Tell me a little about a typical day

Probes: Personal care, Snacks, Meals, Physical Activity, Arrival & Departure

How do you feel about your current daily routine?

Think of a worst day that has actually happened. Describe that day.

How typical or atypical was this worst day?

Think of an ideal day, if everything happened exactly as you would like.

How long have you had this routine?

Measurement and Analysis...

- What methods will you use to generate data?
 - Provide topics and sample questions
 - Provide templates for field notes
- How will you ensure quality control?
 - Transcribing manual (e.g., we will use the 3-step process developed...)
 - Training interviews and observers (e.g., we will use the training protocol...)
- What specific kinds of analyses will you conduct?
 - Provide examples of the kinds of dimensions you expect based on prior research

Show the kinds of data
and analyses
funders can expect

Tonyan/Romack Appendix H: Draft Adaptation of EFI Dimensions

| Original from Weisner (1984) | Draft Adaptation for Tonyan/Romack |
|---|---|
| Work and subsistence | Work and subsistence: Please tell me a bit about your income. What role does the income generated through your child care program play in meeting your family's needs? |
| Health and demographic circumstances | Health and demographic circumstances – What is the relationship between FCCPs' ethnicity, educational background, SES, and that of the children they care for? |
| Community safety | Community safety and characteristics – How is home structured? How is neighborhood? |
| The division of work by gender and age | The division of work by gender and age – What are the tasks to be done to make the day run smoothly? For own family life? For child day care? |
| Children's participation in the routine | Children's participation in the routine – How do the children contribute to the daily routine? What do they do to help? Or make it harder? |
| Children's and parents' workloads | Children's participation in the routine: how do the children contribute to the daily routine? What do they do to help? or make it harder? |
| Organization of child care | Organization of child care – How are daily routines organized? |

Resources

- National Science Foundation: [Workshop on Scientific Foundations of Qualitative Research](#)
- National Science Foundation: [User-Friendly Handbook for Mixed Method Evaluations](#) by the Division of Research, Evaluation, and Communication of the Directorate for Education and Human Resources
- National Science Foundation: [Workshop on Interdisciplinary Standards for Systematic Qualitative Research](#)
- National Institutes of Health: [Best Practices for Mixed Methods Research in the Health Sciences](#)
- National Institutes of Health: Qualitative Methods in Health Research: Opportunities and Considerations in Application and Review. (no longer available online)

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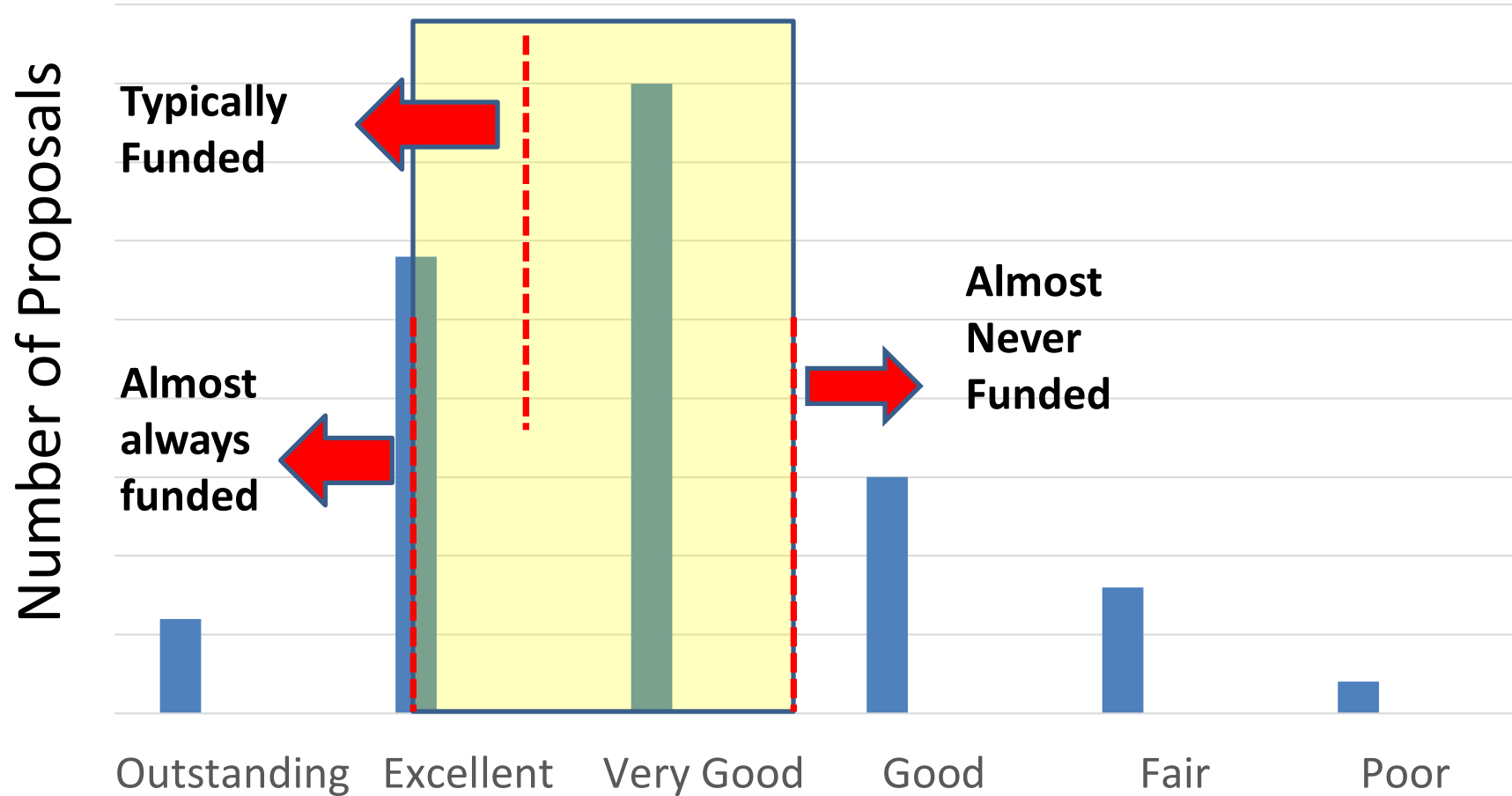


WRITING A QUANTITATIVE NSF GRANT PROPOSAL

Erin Ruel, Ph.D.
Professor of Sociology

CAHSSA webinar
May 19, 2022

NSF Funds Who?



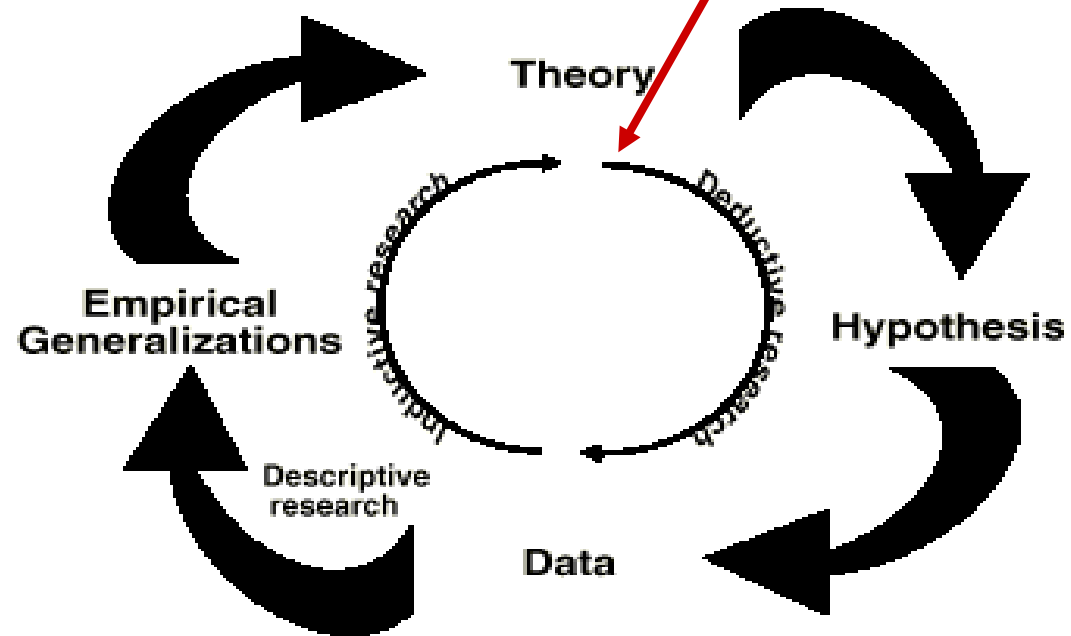
Gisele Muller-Parker,
NSF

Why Rated Highly?

- “This proposal suggests a clear, elegant, well-documented approach to a problem that has plagued this field for decades.”
- “The PI has a **beautiful plan**. Undergraduates or new graduate students can step right into this work, yet it solves a major problem and will be publishable in a first-rate journal.”
- “I frankly would have doubted it could be done. Yet the PI has proven the method in preliminary work AND had it accepted by a peer-reviewed journal!”
- “I have rarely seen a proposal, even from long-established investigators, that shows such careful thought and meticulous presentation.”

Deductive Research

Deductive research starts with a theoretical premise and *deduces* a specific expectation.



Hypotheses

- H1: Improvements to the built environment due to the Beltline will be associated with increased physical activity, lower perceived neighborhood crime, and greater community cohesion.

Diagram Experimental Design

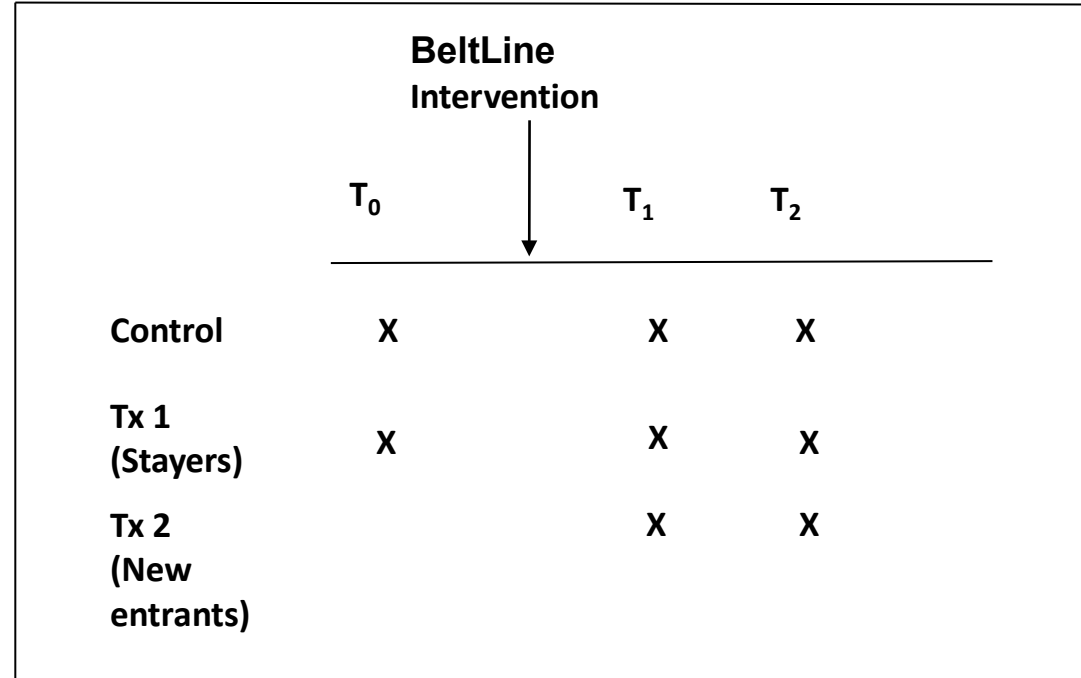
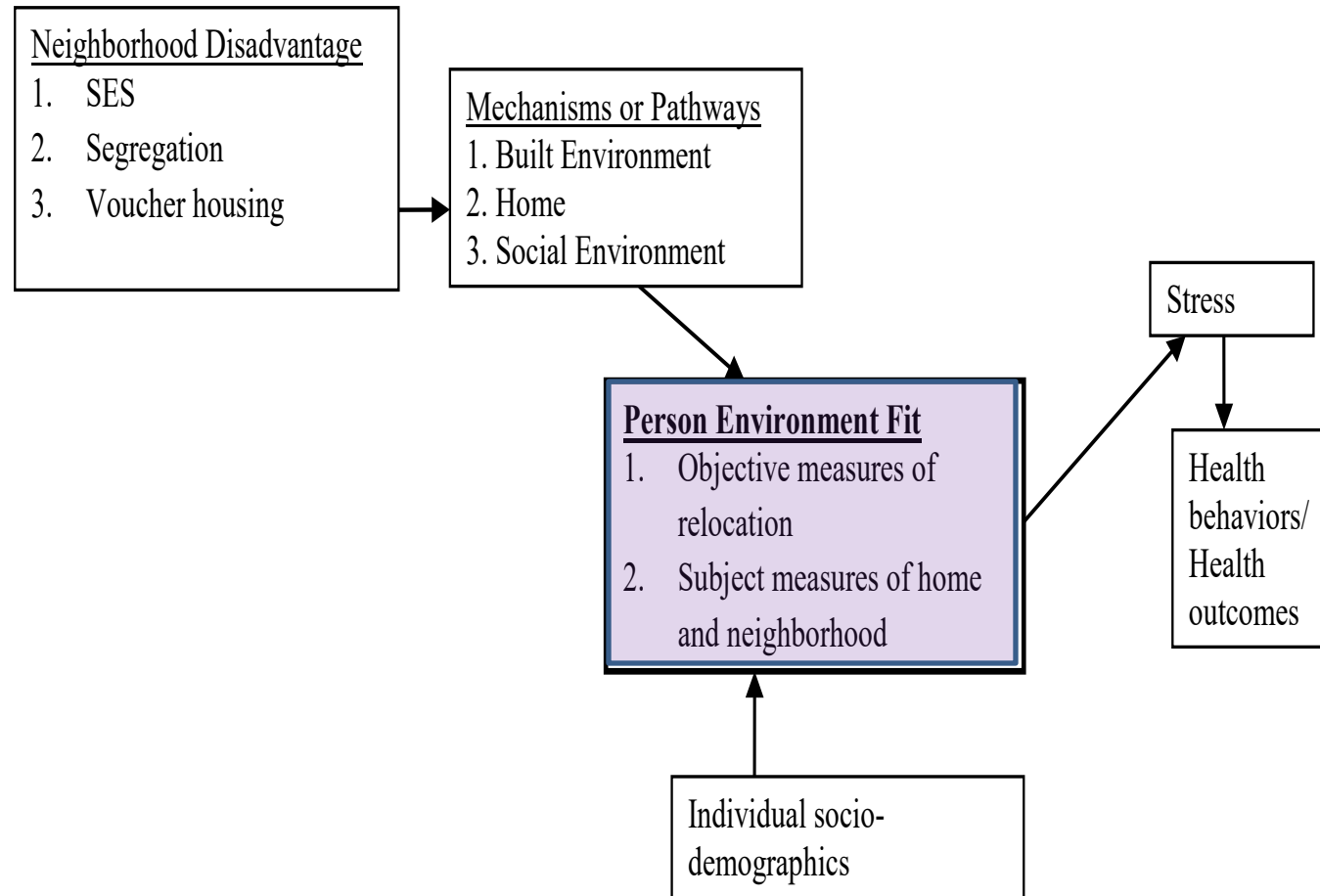


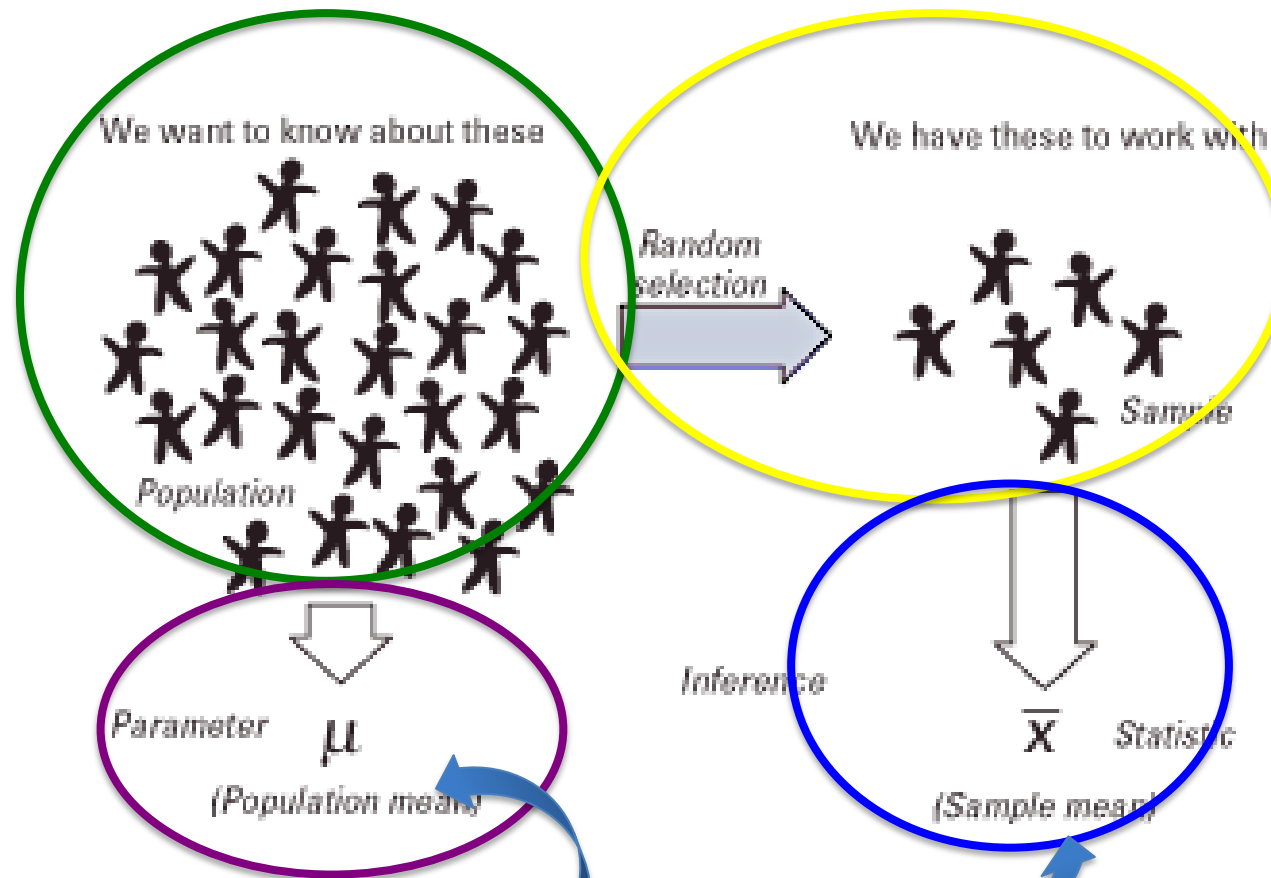
Diagram Observational Model



Methodology

- Give a brief overview of full design.
- Three needed sections
 - Data
 - Constructs
 - Analysis

The Data



We want to know this but we can only infer what this is by calculating this

Sampling

- “We selected respondents by drawing a **disproportionate stratified probability sample** of housing units from the seven public housing developments.”

Issues with sampling

- “**Retention** is clearly a serious problem with a marginalized population such as this. To aid in retention, we have provided respondents \$15.00 incentives for completing the baseline interview and intend to offer a similar incentive for each post-relocation interview. We have already **instituted three measures to maintain contact with the respondents** at the baseline study stage and we will employ other tracking measures post-relocation as necessary.”

Constructs Example

- We also include measures of social capital adapted from Sampson, Raudenbush, and Earls' (1997) work on collective efficacy and community cohesion to now also include measures of social support, sense of community and place attachment, and various forms of civic engagement.
- Because crime or perception of crime can affect perceptions of social capital, we include questions concerning fear of criminal victimization and perceived risk of victimization (see Reid & Konrad 2004; Reid, Roberts, & Hilliard 1998).

The Analysis

- Multiples ways to do this:
- How complicated is your study? How many distinct aims do you have?
- How many hypotheses do you have?
- How many types of analyses will you conduct

The Analysis: Aims based

- Aim 1 is to systematically examine the neighborhoods of relocated public housing residents, including the built environments, and social environments.
- Step 1. Due to our large number of covariates and small sample size, we propose to perform principal components analysis (PCA), using varimax rotation, to create variables that represent the six dimensions of the built environment, Horn's parallel analysis test, and the eigenvalue > 1 criteria (Kaiser's rule).⁹⁸

The Analysis: Complicated & Hypothesis based

- If, we find no evidence of endogeneity, we will employ propensity score matching to estimate treatment effects using Stata's procedure "teffects" (because this gives more precise standard errors than does "eteffects"). We will try a number of approaches to selecting a matching algorithm and use several strategies to evaluate whether the groups are balanced after matching (e.g., Rosenbaum & Rubin, 1983 and Dehejia & Wahba 1999, 2002).
- To address Hypothesis 7, we will also include an interaction term between measures of social and economic capital. Additionally, in order to control for neighborhood context for our individual-level analyses, we will begin with a descriptive analysis of the CLT and non-CLT neighborhood demographic and socioeconomic characteristics using census data.

The Human subjects

- Don't forget to address:
 - ethical issues
 - Safety issues
 - Inclusion and eligibility criteria
 - Vulnerable populations

Data Management Plan

- Will you make your data publically available?
- Where?
- When?
- How will you ensure it is de-identified
- Will any of it be restricted?

Mixed-Methods Research

Resources and Considerations

Holli Tonyan, Ph.D.

When $1 + 1 \neq 2$

- “If qualitative and quantitative each have limitations, why not combine them?”
- Make sure your aims necessitate both methods
 - E.g., evaluating the efficacy of an intervention: planning qualitative interviews nested within a quantitative study to identify unanticipated barriers (e.g., New Hope for the Working Poor study)
 - E.g., compare local trends to larger-scale data collection
- Have a plan for how each kind of method complements the other...

Creswell, J. W., Klassen, A. C., Plano Clark, V. L., Clegg Smith, K. (2011). Best practices for mixed methods research in the health sciences. Bethesda, MD: National Institutes for Health.

Examples of specific mixed-method designs

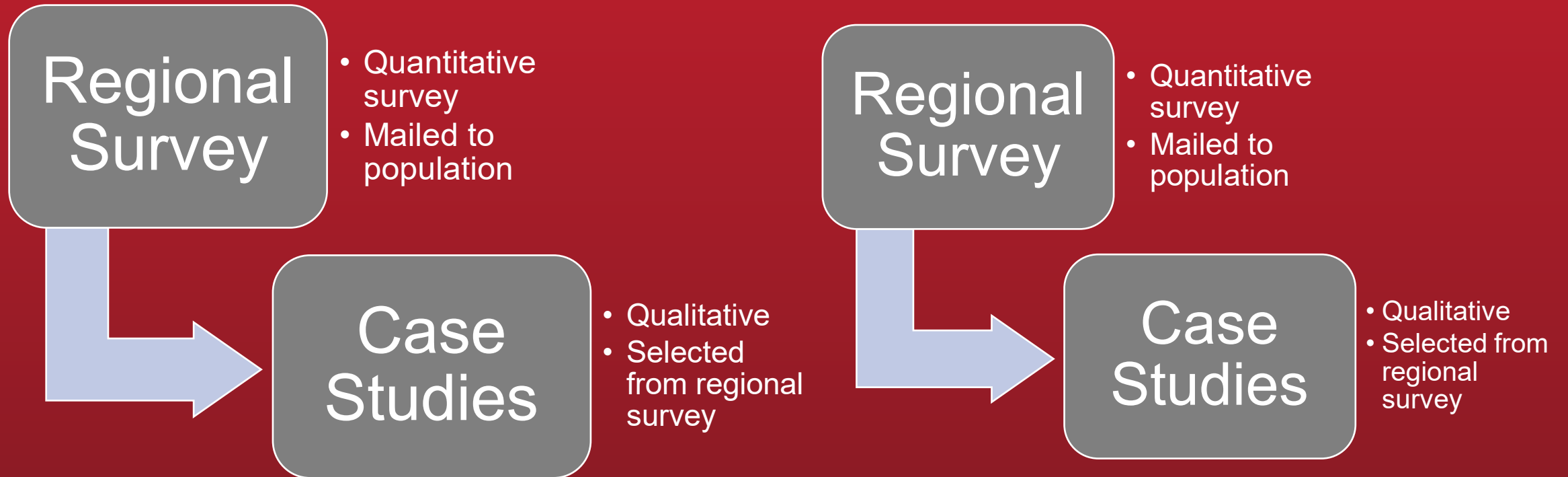
- **Convergent:** both kinds of data collected at the same time and merging data together for analysis
- **Sequential:** one data set builds from the other
 - Exploratory sequential: qualitative to explore, then create a measure to use for quantitatively measuring at a large scale
 - Explanatory sequential: quantitative to test hypotheses, then qualitative follow-up data to understand (e.g., quality of life scale, followed up with a sub-set of in-depth interviews to better understand the meaning)
- **Embedded (or nested):**
 - Within a quantitative study, qualitative data collection might capture subjective experiences with the intervention
- **Multi-phase study:** similar to sequential

Creswell, J. W., Klassen, A. C., Plano Clark, V. L., Clegg Smith, K. (2011). Best practices for mixed methods research in the health sciences. Bethesda, MD: National Institutes for Health.

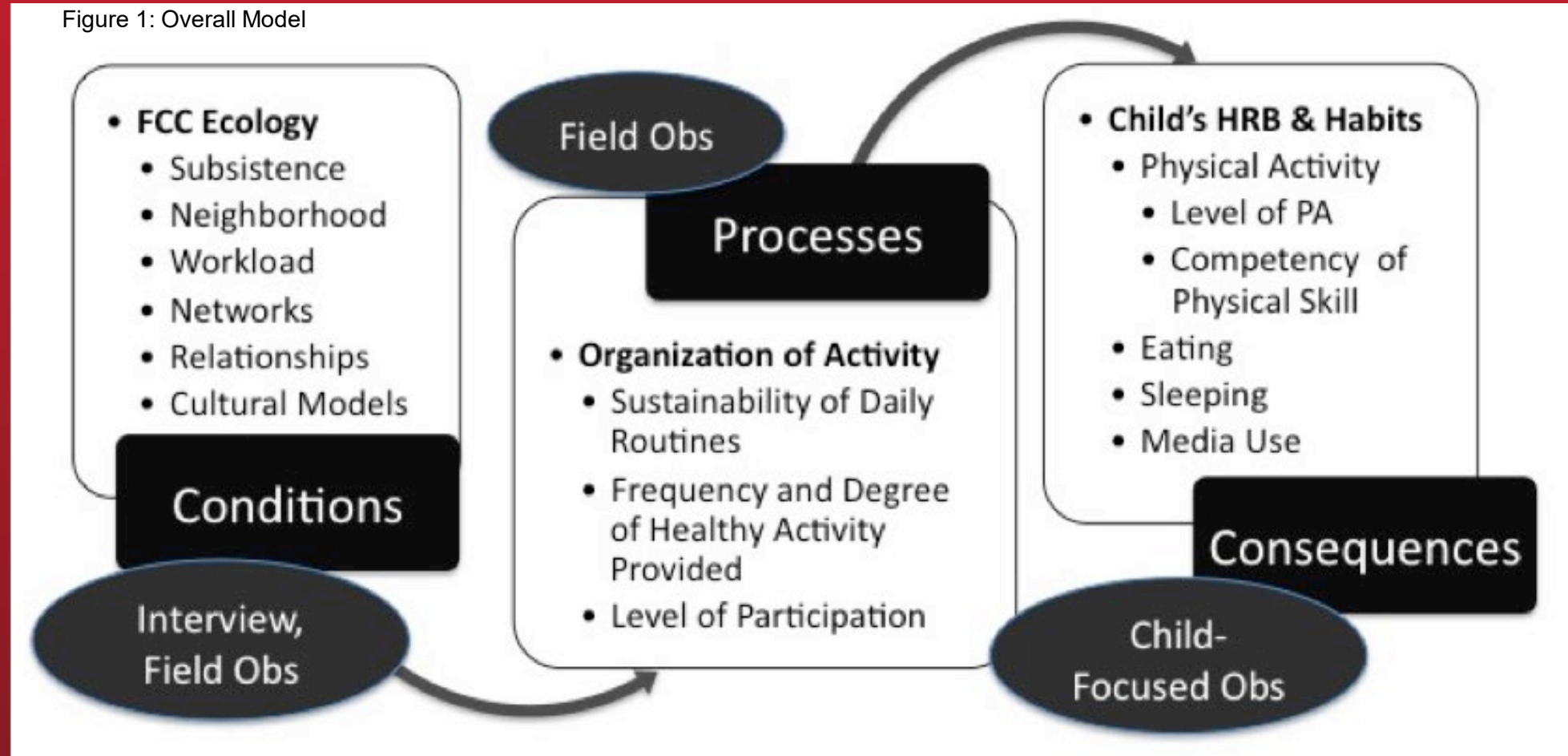
Funded Example: Sequential

Region 1 (Year 1)

Region 2 (Year 2)



Overall design of a (too complex) multi-phase mixed-method study

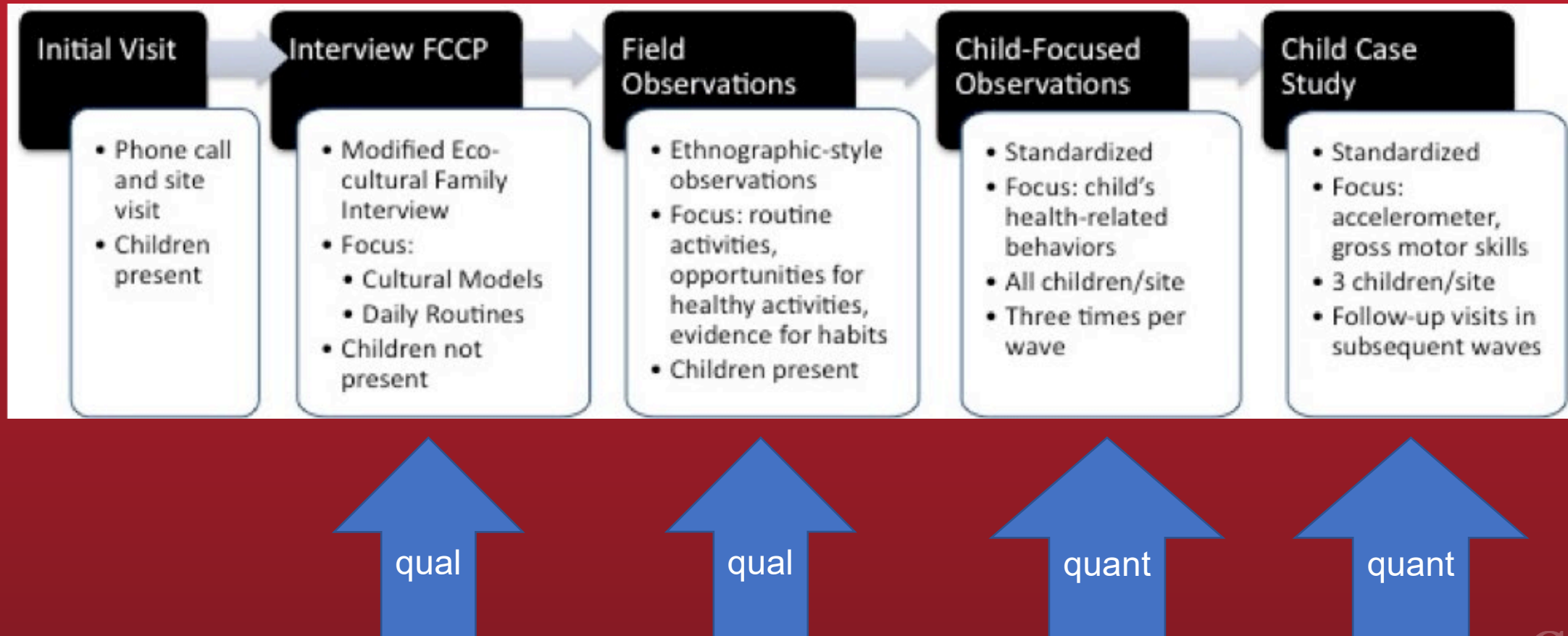


Example mixed-method specific aims (NIH)

1. Use in-depth, mixed methods analyses to describe how CCPs organize activity and explain why some CCPs embed healthy activities for children into a sustainable daily routine based on **conditions** under which they work. Expected Outcome (EO1): A reliable and valid measure of daily routines, a new version of the Eco-cultural Family Interview (EFI), including scales for sustainability and regular provision of healthy activities.
2. Classify types and extent of **activities** (healthy/ not healthy) CCPs provide for children on a routine basis. Expected Outcome (EO2): Usable, ecologically valid Case Study descriptions of healthy activities within sustainable routines. Hypothesis (H1): CCPs with better conditions (e.g., reliable subsistence, manageable workload) will be more likely to have sustainable routines and regular provision of healthy activity.
3. Understand the **consequences** of participating in healthy activities for children's HRB. Hypothesis (H2): children who are exposed to and participate in frequent, well-organized healthy activity will engage in HRB specific to the activities they experience (e.g., more competent physical skill versus healthier food choices).
4. Explore the child care conditions under which healthy behaviors are sustained or adopted over time. Expected Outcome (EO3): Usable, ecologically valid Case Study descriptions of the development of children's healthy habits over time. Hypothesis (H3): Children will be most likely to adopt or sustain healthy habits over time (i.e., taken-for-granted healthy behaviors) when healthy activities are embedded in sustainable daily routines.

Illustrating the phases

Figure 3. Overview of data collection



Questions?

Evaluation link: 3 questions

- Please take a couple of minutes and complete a quick feedback evaluation survey. Link in Chat.

Networking Breakout Prompts

1. Introduce yourselves

- Brief Description of Your Research Interests
- What is your favorite vacation destination?

2. OTHER Prompts for Discussion

- How can CAHSSA networking support your research goals?
- Are you looking for a collaborator?
- What is your experience with collaboration?

THANK YOU from the CAHSSA team!



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