

RUNNING HEAD: Ecologically valid strengths-based developmental science

Ecologically Strong:
Toward a Strengths-Based and Ecologically Valid Developmental Science

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Abstract

This chapter examines long-standing recommendations of and emerging opportunities in ecologically valid and strengths-based developmental science. The chapter discusses issues of both contextualization and politicization, which are argued to be key features of developmental research that advances strengths-based findings and ultimately equitable policy and intervention in educational and developmental practice. The chapter discusses several cases of developmental research with varying degrees of success in contextualization to illustrate how strengths-based commitments for conducting research with nondominant communities can be integrated into the designs, methods, and analytical approaches of empirical studies in developmental psychology. Several practical recommendations for conceptualizing, designing, conducting, and analyzing strengths-based developmental research conclude the chapter.

Keywords:

qualitative methods; ecological validity; naturalistic methods; developmental science; ethnographic; diversity; equity; inclusion; cultural research; nondominant communities

Ecologically Strong: Toward a Strengths-Based and Ecologically Valid Developmental Science

The resources available to psychological and developmental science for advancing strengths-based evidence in our scientific practices, including the social interventions they inform, are now well-developed and characterize the leading edge of scholarship in fields such as critical learning sciences and cultural psychology (e.g., Nasir et al., 2020). In addition, the important contributions of, for example, Indigenous, decolonial, anti-racist, and feminist approaches challenge core traditions of developmental science in terms of relevance to a world increasingly committed to issues of equity, shared social power, and diverse representation.

This volume is a positive step toward developmental science making progress on these issues, particularly in its inward gaze at issues of measurement and conceptualization. The focus of this chapter's reflexive gaze is how developmental science can recalibrate in ways that advance a larger and more robust body of strengths-based research with minoritized (but, indeed, all) communities. Specifically, we revive the long-standing issue of ecological validity as fundamental to advancing strengths-based developmental science. We discuss several examples from developmental literatures and give research recommendations toward advancing an ecologically valid, strengths-based, and ultimately equity-oriented developmental science.

Our view is that a strident methodological commitment to ecological validity is crucial for developmental science advancing its scientific and political relevance. This ecological commitment means deepening connections between, on one hand, a desire to understand and generate valid evidence on the everyday learning and developmental processes common to individuals and cultural communities and, on the other hand, the social interactions and methods in which we ask participants to enact those processes. Ecologically committed developmental science departs from the study of racial and ethnic diversity as an "object" of inquiry and takes

up critical questions about how developmental research is conducted and its role in challenging the marginalization or misunderstanding of underrepresented social and cultural groups.

This chapter aims to be useful to a broad audience of developmental researchers and practitioners with interest in exploring the strengths and contributions of ecologically committed research. We draw on ethnographic and cultural-historical perspectives but do not suggest that those working in other traditions need to “abandon ship” and take up entirely new approaches in their work – a non-starter for many established scientists. Strengths-based research is not partial to method or discipline. Prominent strengths-based research stems from work in fields such as sociolinguistics, anthropology, and cognitive psychology as does research advancing deficit-based findings and frameworks. Any approach to research can benefit from deepening ecological parallels between methods and the activities of participants’ everyday lives (Rogoff et al., 2018).

Also, this chapter does not revive oversimplified and now-outdated debates that pit qualitative research against quantitative research; such dichotomous categories are neither helpful nor descriptively accurate. Qualitative research is not necessarily a refuge from the scientific and political problems of deficit frameworks, as we demonstrate in cases below. Similarly, controlled experiments or large-scale numerically or statistically driven approaches do not necessarily generate evidence that perpetuates oppressive interventions and policy (e.g., consider W.E.B. Du Bois’ work using large-scale demographic data visual analysis techniques to communicate inequities among southern Black communities in the US [Du Bois et al., 2018]).

Said differently, our focus is not on the superficial characteristics of data – after all, words can be counted or assumed to carry objective meaning (Packer, 2018) and numerical counts and scores always derive from lived, interactive research moments that require interpretation. Although we firmly support calls for the integration of qualitative and quantitative

methods (see Dixon-Román et al., 2020; Hammersley, 1992), even successful mixed-methods approaches do not necessarily resolve issues related to contextualization and ecological validity, or ultimately advance strengths-based developmental evidence.

Our chapter centers two overarching considerations for building strengths-based and equity-promoting developmental science findings and interventions: *contextualization* and *politicization*. Key to contextualization, we discuss the long-standing issue of ecological validity in the developmental research designs. As the primary focus of the chapter, we present prominent cases of research in developmental science to explore the pervasive issue of poor ecological validity and its potential role in undermining strengths-based research in the field. Throughout, we argue for the explicit politicization of developmental research as a counter move to the political assumptions of deficit-model research. We then discuss recent methodological advances in research on learning and development which carry with them implications for how the concept of ecological validity might evolve. The chapter concludes with recommendations for strengths-based developmental research across methods and areas of inquiry.

What is “strengths-based” developmental research?

A helpful starting place for conceptualizing “strengths-based” developmental research is a decades-long conversation in psychological literatures regarding how to understand the meaning of group-level patterns of variability in individual performance on a wide range of social and psychological tasks – the “difference versus deficit” debate:

The academic arguments about diversity and deficit at the end of the 1960s when Bruner and I undertook to write on the topic were polarized around explanations for the continuing achievement gap between middle class and working class children, with particular concern focused on African Americans. Most of those who adopted a deficit view assumed that growing up in conditions of poverty deprives children of essential cultural conditions for normal intellectual development. In the parlance of the day, the “*cultural deprivation*” that accompanied poverty and ethnic marginalization produced a “deficit in *psychological functioning*.” (Cole, 2013, p. 85, italics in original)

The debate has been a near constant in psychological and developmental research with antecedents prior to the 1960s found in racialized research programs in intelligence and recapitulation theory (Danziger, 1997; Koops & Kessel, 2015), and more recently taking up residence behind terms such as “at risk” and “school readiness.” Importantly, opposition to deficit perspectives has been active in educational and psychological fields for at least as long. (For descriptions of the history and mechanisms of deficit-based research see Avineri et al., 2015; Dinishak, 2016; Valencia, 1997, 2010.)

The duration and intensity of the difference-vs-deficit debate in psychological and developmental research makes it reasonable to characterize a strengths-based perspective as “critical.” Packer and Tappan (2001, p. 14) describe critical approaches in two ways, as involving: (1) *contextualization* or “examination of the conditions of the possibility of some phenomenon” and (2) *politicization* or “identification of forms of exploitation and the criticism of those considered responsible.”

Much of the heterodoxical progress that can be attributed to those engaged in the difference-vs-deficit debate has focused on the area of *contextualization*, demonstrating the frequent inadequacy of educational and psychological testing for bringing about or describing the sophisticated skills and competencies of children from marginalized social and cultural groups. Such contextualization efforts have often included keen awareness of the political implications of deficit-model science. Again from Cole (2013), quoting Cole and Bruner (1971): “In the present social context of the United States, the great power of the middle class has rendered differences into deficits because middle-class behavior is the yardstick of success” (p. 87).

Putting in relief the political undercurrents of this work, our view is that a strengths-based approach to developmental science cannot challenge deficit perspectives without an equally

explicit political position, which a “difference” perspective may or may not make obvious. We suggest there is an important difference between developmental research on variability *per se* and research that produces evidence of strengths-based psychological and developmental practices, which can benefit from but does not require evidence of variability.

Our use of the term “strengths-based” as an aspirational descriptor for a contextualized and often ecologically valid developmental science draws on cultural-historical or sociocultural traditions (see also Plaut, 2010). Although developmental and psychological researchers often operationalize context as separate from and a force “acting on” individuals, we oppose this view (see also Cole, 1996; Rogoff, 2003). We argue that the unit of analysis (i.e., individuals, often children or caretakers) assumed by many theories and forms of measurement in developmental research (e.g., academic testing, observational paradigms focused on children’s behavioral reactions to imposed stimuli, etc.) may predispose researchers to explaining phenomena in terms of individual and often cognitive processes, opening vulnerabilities to findings being linked to deficit explanations.

Contextualized forms of developmental research are, first, sensitive to the mutually constituting relation between individual and cultural/contextual processes of learning and development (Rogoff, 2003). That is, the objects of psychological or developmental inquiry are fundamentally emergent phenomena, rooted in the mutual constitution of individual *psychological* processes and *social, cultural, political, and historical* processes. In this perspective, efforts to explain differences among social groups in terms of some phenomenon of interest must transcend the “structure versus agency” dualism – that *either* individuals *or* the contexts of their learning and development are causally prominent – and reconceptualize the phenomenon as distributed across these individual and supra-individual features of activity.

Second, a contextualized developmental science responds explicitly to the fact that efforts to conduct research – whether via surveys, laboratory tasks, interviews, or even many naturalistic observations – are *context creating*. This notion requires that researchers specifically theorize these created contexts as full social, cultural, and political encounters, which is rare in developmental psychology but has been undertaken admirably in other fields (e.g., Briggs, 1986; Wortham et al., 2011; Vossoughi & Zavala, 2020). Even in research interviews, when ostensibly the entire conversation is oriented toward *denotational* facts such as past events, absent people, and views and values grounded in experiences dissimilar to the interview itself (see Packer, 2018; Wortham et al., 2011), all parties simultaneously undertake efforts to coordinate self-performances with their approximations of what appear to be the purposes and evaluative assumptions of the interview (e.g., reporting views and events that present one’s self as a “good parent” in an interview conversation about parenting in general). Other instances of context creation in interviews are more obvious, such as Susan Harding’s (1992) brilliant analysis of an attempt to catalyze Harding’s own religious conversion amidst a more general interview about a Christian reverend’s life and beliefs. These *interactional* moments in created contexts are not inherently “bias” or “noise” but, instead, often can be analyzed as sources of evidence directly relevant to the research questions at hand (e.g., Coppens et al., 2020).

The creation of discrete research activity contexts, which is unavoidable in nearly all methodological designs, also requires that researchers understand and specifically theorize relations between individuals’ performance in those contexts and how individuals learn and develop in the activities common to their everyday lives – “ecological validity.” Later in the chapter, we present an in-depth discussion of both exemplary cases of ecologically valid empirical research – such as Rheingold’s (1982) laboratory-based, developmental research on

prosocial helping among young children – as well as cases of developmental research that we believe miss the mark on ecological validity.

Third, a contextualized developmental science that leads to strengths-based insights is often primarily grounded in *actor perspectives*, as opposed to *observer perspectives*.

As observers... we're looking at the actor, the person doing the behavior we're trying to explain. Thus the actor dominates our literal and mental field... and the circumstances to which he is responding are obscured from view. ... this picture causes a bias when we try to explain the actor's behavior. We emphasize the things we can see. We emphasize things about the actor – characteristics, traits, and so on – that seem like plausible explanations for her behavior. And we deemphasize, as causes of her behavior, the things we can't see very well, namely, the circumstances to which she is adapting. (Steele, 2010, p. 18)

Gharabaghi & Anderson-Nathe (2017) make clear the methodological implications of this observer-actor distinction in perspectives:

strengths cannot be identified through the objectification of young people as phenomena of interest. They can only be identified through the immersion of the researcher into the everyday life strategies employed by young people in navigating their social contexts and a curiosity on the part of the researcher not about outcomes but about human relationships. (p. 178)

We argue that it may be possible to develop *non-deficit* findings and interpretations while also coming up short of articulating a robust strengths-based view if research findings are not sensitized to actor perspectives and built on politically reciprocal research relationships. As an example of the distinction between *non-deficit* and *strengths-based* insights, the well-known non-deficit “funds of knowledge” framework for recognizing the cultural capital of minoritized communities has made invaluable contributions toward understanding and recognizing the learning and developmental resources available to participants in politically marginalized communities (González et al., 2005). Nonetheless, Esteban-Guitart and Moll (2014) suggest that those resources can only be understood as *strengths* when one understands how such resources

are agentially taken up and put to use by families and individuals in self-determined and culturally sustaining ways.

Strengths-based research, in many of its forms, combines these insights when designing studies, posing questions, and interpreting evidence – such as adopting a critical (i.e., contextualized and politicized) stance regarding what it means to have created evidence of cultural or social group differences via measures of some phenomenon of interest. In strengths-based perspectives, individuals' performance in research contexts (or any context of intervention, such as schools) are not necessarily taken to accurately represent their abilities generally. For this reason, strengths-based designs and insights are often cross-contextual or multi-sited (Marcus, 1995; Gutiérrez & Larson, 2007; Vossoughi & Gutiérrez, 2014), which facilitates insights into how research contexts and everyday settings both afford and constrain forms of performance deemed as competent or indicative of learning or development.

The elephant in the room: Ecological validity as foundational to “calls for change” in developmental research

In the social sciences generally, as well as in developmental psychology, there are several long-standing calls to change the ways that research is conducted to make progress on issues of representation and equity. The most straight-forward of these calls is to increase the cultural, racial, ethnic, political, gender, class, ability, nationality, and other diversities of participants who take part in developmental research. Henrich et al. (2010) made a version of this recommendation with widespread citation; however, similar recommendations had existed for years prior and have been made since (e.g., Arnett, 2008; Graham, 1992; Jahoda, 1986; Nielsen et al., 2017). This is a crucial agenda for developmental science.

Many other calls for change in developmental science are deeper than diversifying who takes part in its studies and relate to epistemological and methodological issues in the studies themselves. For example, dominant assumptions of developmental science, for much of the history of the discipline, have assumed that “the child” can be studied as an integrated and bounded whole and that the psychological determinants of developmental outcomes travel with children relatively unfettered from one context (e.g., children’s everyday lives in families and communities) to others (e.g., laboratory settings; schools). Kessen (1979) outlines the problem:

The child – like the Pilgrim, the cowboy, and the detective on television – is invariably seen as a free-standing isolable being who moves through development as a self-contained and complete individual. Other similarly self-contained people – parents and teachers – may influence the development of children, to be sure, but the proper unit of cultural analysis and the proper unit of developmental study is the child alone. The ubiquity of such radical individualism in our lives makes the consideration of alternative images of childhood extraordinarily difficult. ... The seminal thinkers about children over the past century have, in fact, been almost undeviating in their postulation of the child as container of self and of psychology. Impulses are in the child; traits are in the child; thoughts are in the child; attachments are in the child. In short, almost every major theory of development accepts the premises of individualism and takes the child as the basic unit of study, with all consequences the choice has for decisions that range from selecting a method of research to selecting a therapeutic maneuver. Uniform agreement on the isolable child as the proper measure of development led to the research paradigms that have dominated child psychology during most of its history; basically, we have observed those parts of development that the child could readily transport to our laboratories or to our testing sites. (p. 819)

In essence, this is the problem of *contextualization*. It seems the issues Kessen (1979) summarized have not been addressed, at least not comprehensively, in the more than 40 years since the critique’s publication. Rogoff et al. (2018) contend that “the portfolio of our field needs a course-correction” (p. 5); namely that, “if psychology focuses too narrowly on children’s reactions to situations controlled by researchers, without much attention to children’s lives outside of this unusual setting, we are in danger of losing track of the phenomena that we are trying to understand” (p. 9). Similarly, Packer and Moreno-Dulcey (2020; see also Packer & Moreno-Dulcey, 2022) cite a “deep issue” in laboratory-based developmental research that

“assumes that the psychological abilities or functions under investigation are [solely] characteristics of the individual child” (p. 12). We agree with both Packer and Moreno-Dulcey’s (2020) concerns as well as Rogoff et al.’s (2018) urging to ground developmental research in the settings and activities of participants’ everyday lives – this would be a productive rebalance for the field of developmental psychology (which would not preclude laboratory- or survey-based research).

Yet, as we previously discussed, strengths-based developmental research may be as much an ethical and political commitment as it is an epistemological and methodological commitment to research in naturalistic settings. Locating the child as inseparable from family and community contexts, when it has happened in developmental theory and research, has not necessarily precluded deficit thinking regarding nondominant families and communities. For example, “culture of poverty” research rooted in the 1960s and continuing today can be read as indeed locating children’s development as inseparable from family and community social and cultural processes. However, the *pathologizing* of those processes has led to blaming marginalized communities for their supposed shortcomings in supporting developmental outcomes benchmarked on the values and practices of dominant communities, leaving the cultural resources and strengths of marginalized families and communities either undervalued, not recognized, or erased (Rogoff et al., 2017).

Strident commitment to ecological validity as key to strengths-based developmental research

We argue that a transformational reorientation and commitment to ecological validity is needed in developmental research, as a means to better and more politically equitable science – a view with decades of precedent. Much of developmental science is guided by strong and often implicit “ecological commitments” (Dahl, 2017; see also Rogoff et al., 2018), a concern for and

interest in generalizing to the everyday developmental contexts and processes shaping children's lives. Yet, ecologically valid developmental research is uncommon.

The confusions that Urie Bronfenbrenner (1977) articulated decades ago about what ecological validity is and what it is not remain relevant to developmental research. The main confusion involves a conflation between superficially *naturalistic* research and *ecologically valid* research. Naturalistic research methods often use words, phrases, objects, tasks, settings, or even people that are familiar to study participants and common to their everyday lives – potentially beneficial methodological choices (Dahl, 2017; see also Valsiner & Benigni, 1986). However, superficially naturalistic research settings and materials do not necessarily align, from study participants' perspectives, the meaning of the research procedures with the meaning of the everyday settings and activities from which their skills and strengths often derive.

Concern for cross-contextual meaning is essential to ecologically valid research, as compatibility in meaning from one situation to the next is likely to evoke in participants similar cognitive, social, or other processes of interest to developmental researchers. To see ecological validity as fundamental to psychological research requires a notion of mind and development that is much more highly contextualized than is the norm in American psychology. Although several definitions of ecological validity exist (e.g., Bronfenbrenner, 1977; Cole et al., 1997; Schmuckler, 2001), we center our discussion on the following:

Ecological validity refers to the extent to which the psychological processes observed and recorded in a particular psychological experiment reflect the processes that actually occur in other, naturally occurring settings. Ecological validity is also used to address the problem of generalizability, which is the extent to which it is legitimate to apply the lessons learned in an experimental setting to the “real world” of events not deliberately set up for purposes of psychological testing. (*The Story of LCHC: A Polyphonic Autobiography* <http://lchcautobio.ucsd.edu/polyphonic-autobiography/section-2/chapter-4/>)

Ecological Validity in Action: Clear and Counter Cases

Like any definition, the concept of ecological validity is probably most helpful put to use. In what follows, we consider several cases in which ecological validity plays a prominent role in their successes or shortcomings as strengths-based research.

Case 1: Studying children via theatrical tasks: The “theory of puppets” debate

In summer 2020, an interesting and lively debate surfaced on the listserv of the Cognitive Development Society (i.e., COGDEVSOCC) about what issues and assumptions are at work when researchers animate otherwise inanimate objects such as dolls and wooden blocks in games or theatrical pretense, with the aim of demonstrating social phenomena to infants and young children and measuring their behavioral responses. The discussion was rich, with many challenges, variations, connections to related topics, and complex technical justifications raised. The listserv conversation resulted in a handful of published papers which source aspects of the debate we take up.

Packer and Moreno-Dulcey (2020) coined the phrase “theory of puppets” to raise objections to the ecological validity of a particular kind of laboratory-based developmental research. They argue that several kinds of normativity – broadly, cultural expectations regarding what children ought to be doing and agreeing to in laboratory tasks – function as unexamined assumptions in pretense- or game-based developmental methodologies often used to study young children’s social-cognitive understanding. Although these authors critique a particular type of design known as the protesting paradigm, their points are relevant to many other experimental or otherwise laboratory-based tasks that embed representational stimuli in games or other theatrical forms of pretense for the purpose of provoking behavioral reactions in children.

the experimental procedure known as the protesting paradigm presumes, but does not study, sophisticated normative competences on the part of its child participants. The research simply could not take place if a child did not respect adult authority, did not understand how to take turns and make moves in a game, and did not understand that puppets can be assigned

the status of players in the game. Arguably, these taken-for-granted competences are more advanced than the ability that the research is investigating. (Packer & Moreno-Dulcey, 2020, pp. 10-11).

In fact, we take even this as a relatively generous stance – the concerns may be greater. For example, the issue is not only *whether* children respect authority or *whether* they understand how to take turns. Also at issue is *how* children approach such adult-managed games and whether the culturally normative assumptions built into such highly constrained laboratory scripts are consistent with the cultural backgrounds of children taking part in the study. A young child appearing to not respect adult authority may in fact be approaching adult interactions with a cultural orientation to the interaction that is *different* – not deficient – than the understanding of expected adult-child relations implicit in the design of the laboratory task. And this different approach, in other contexts, may be a cultural and developmental strength.

Notwithstanding, justification for theatrical or game-based pretense was proposed on the basis of two fundamental assumptions (Kominsky et al., 2020). The first assumption is that the presentation of objects, puppets, and plain visual displays to infants and young children “simplifies” the input or stimulus and thus clarifies for children the researcher’s intended point of focus. Kominsky et al. argue that this supposed simplification is not only necessary for studying infant cognition but also increases measurement validity, the likelihood that children’s behaviors are responding to the focal stimulus and not to other “distracting” or “overwhelming” aspects of the situation. The second assumption is that such simplifications increase the likelihood for researchers to evoke children’s specific “cognitive subsystems” of interest (Revencu & Csibra, 2020) such as their understanding of physics, causality, or prosociality.

The seemingly abstract theoretical assumptions undergirding the justifications proposed by Kominsky et al. (2020) are concerning for a developmental science seeking to understand

cultural strengths of children across a range of communities, including when researchers and children share cultural backgrounds. As we argued above, all research methods including laboratory-based developmental research tasks are *context creating* rather than context reducing. In the laboratory research methods that are the focus of the “theory of puppets” debate, efforts to simplify laboratory stimuli may instead *replace* or even *add* complexity via the introduction of implicit cultural expectations which may not be shared across cultural communities in the same way as *might* be the case when researchers study children of their same backgrounds.

Kominsky et al. (2020) focus a portion of their discussion on cross-cultural issues but appear not to appreciate the cultural aspects of the research interactions in which children are directed to participate. Instead, their discussion of issues related to cross-cultural generalizability focus on the familiarity of stimuli arguing that “there are some types of stimuli that we would expect to work perfectly well in any human culture” (p. 24). We take this as related to the confusion Bronfenbrenner articulates between superficially *naturalistic* and *ecologically valid* modes of research. What makes any stimulus “work” has less to do with whether a child has seen a puppet before and much more to do with the degree of intersubjective agreement between children and researchers regarding the cultural norms, values, and practices delimiting what’s expected and what’s going on with the real people orchestrating or taking part in the research.

We raise a second objection to the assumption that “simplification” is possible in the contexts created for the purposes of developmental research, regardless of the method. From a cultural psychological perspective, children’s social-cognitive systems are not “subsystems” dressed up superficially and made opaque by the cultural values, practices, and normative expectations of children’s families and communities. On the contrary, individual social-cognitive processes are *made possible by* and exist in *mutually constituting relation with* social and cultural

processes. The overarching proposal by Kominsky et al. (2020) that developmental researchers can, or even must, “trade” concern with external validity (i.e., ecological validity) for concern with internal validity (i.e., measurement validity) reflects a deep epistemological and methodological fallacy that laboratory experiments can be thought of as closed systems that permit isolation from “external” considerations such as cultural values and practices. Building on decades of experience wrestling with issues of ecological invalidity in cross-cultural research, members of the *Laboratory of Comparative Human Cognition*, with us, instead argue:

our work, as well as studies by others, showed that even psychological tests and other presumably “closed system” cognitive tasks were permeable and negotiable. Insofar as the psychologist’s closed system does not capture the elements of the open system it is presumed to model, experimental results systematically misrepresent the life process from which they are derived.

(<http://lchcautobio.ucsd.edu/polyphonic-autobiography/section-2/chapter-4/>)

Again, that these concerns have decades of precedent (e.g., Cole et al., 1978) raises urgent questions about how the current balance of methods in developmental science is rationalized.

Cases 2 & 3: Exemplary and ecologically valid laboratory-based developmental studies

The foregoing discussion is not a dismissive attack on laboratory-based research. Below, we present two examples of studies using standardized laboratory methods with robust ecological validity. Given our overarching argument that there are numerous parallels between the characteristics of strengths-based developmental research and the criteria for ecologically valid research, we believe that highlighting exemplary cases of ecologically valid developmental studies is especially valuable.

Rheingold’s (1982) study of children’s early prosocial helping. The first case of ecologically valid laboratory-based developmental research is Rheingold’s (1982) study on young children’s prosocial helping, classically defined as “voluntary behavior intended to benefit another” (Eisenberg et al., 2015, p. 610). Everyday household work is a central context of many

young children's early prosocial development, providing regular and accessible opportunities for children to help, collaborate, and contribute to others' efforts. Thus, many contemporary studies of young children's prosociality focus on children's engagement in these tasks and activities. Rheingold's study is frequently cited as foundational to a recent wave of developmental research on young children's prosocial helping, often in reference to a concluding speculation that parents' early exclusion of their children from everyday opportunities to help diminishes children's prosociality as they grow older. Recent research supports this keen speculation (Coppens & Rogoff, 2021; Rogoff & Coppens, under review), and this study continues to be relevant for its accomplishments in ecological validity.

Briefly, Rheingold's (1982) team invited 18-, 24-, and 30-month-old children, their mothers, their fathers, and a couple of unfamiliar adults to complete nine chores set up in a research laboratory space furnished to resemble the rooms of a home. Parents were introduced to the tasks (e.g., chores such as sweeping, setting a table, folding laundry, picking up strewn objects) and asked to "talk about what they would be doing... to maintain a natural milieu" and to "perform the tasks slowly so the children might participate." They were told that reading, playing, or spending time doing things other than tidying up was acceptable, and that all tasks did not need to be completed. In line with research questions focused on children's *prosocial* (i.e., voluntary) helping, parents were instructed to "refrain from telling the children what to do." Children were given no instructions and were not present for parent briefings. Parents and children were then shown the rooms and given 25 minutes to take part.

We focus on a few design features of the study that were crucial to the study's high ecological validity and cross-cultural compatibility. First, Rheingold's (1982) design was not an exact replica of the social situation of participants' households, which would be impossible

across the 80 families they studied. Instead, the designed social setting (i.e., the spaces, materials, and instructions for engagement) was sufficiently open-ended to allow for children and adults to fit their own capacities, interests, family and cultural practices, and on-the-spot interpretations into the affordances provided. In this sense, the study is an exemplary model of *ecological validity as a joint accomplishment* between researchers and participants.

Second, the laboratory activity was designed in ways that permitted the research questions to be addressed by delimiting the construct of interest – children’s helping – to the level of *shared family activity* rather than delimiting to the more constrained level of stimulus-and-behavioral-response that pervades contemporary laboratory studies of toddlers’ prosocial helping. The design was focused, not a simplification; it retained numerous key features of the everyday contextualization of children’s helping. By contrast, narrowly constrained stimulus-response designs both present researchers with an enormous burden to “get it right” in an ecological sense and introduce an array of new and potentially confounding contextual features.

Third, social aspects of Rheingold’s (1982) design implicitly invited both parents and children to engage *as potential collaborators* by permitting children and parents to share overarching goals of the activity (e.g., spending time together or cleaning up the rooms) in addition to more instrumental goals such as sweeping or picking up pieces of paper. In most contemporary developmental studies of toddlers’ helping, children are only able to help an unfamiliar adult and are engaged with adults at only the task, not activity, level.

Together, these ecologically valid design features permitted Rheingold (1982) to creating space for children’s voluntary and autonomous helping and subsequently permitted the identification of a type of helping similar to one that is widespread among Indigenous American and other under-represented and politically non-dominant communities: children’s *initiative-*

based helping (Coppens et al., 2016; Coppens & Rogoff, 2021; Correa-Chávez et al., 2015; de Haan, 1999; Gaskins, 1999; López et al., 2012; Paradise & Rogoff, 2009). To be sure, the cross-cultural compatibility of the design may have been accidental as this type of helping had not yet been formally observed by developmental psychologists, though anthropologists had described young children's autonomous helping among many Indigenous American communities (Lancy, 2020; Modiano, 1973; Whiting & Whiting, 1975). The possible happenstance of the design's cross-cultural compatibility further illuminates the value of conceptualizing strengths-based ecologically valid research as a joint accomplishment among research participant and researchers. Flexible and somewhat open-ended social designs in developmental research permit participants to "bring" or enact cultural strengths in ways that researchers may not anticipate but can observe and measure with precision.

If the families in Rheingold's (1982) study were of middle-class European-heritage backgrounds (likely, but family backgrounds were not reported), it is possible that parents in fact often tell children what to do at home (see Alcalá et al., 2014; Coppens et al., 2016; Coppens & Rogoff, 2021) – an apparent strike against the ecological validity of the study. However, this social design feature may have been justified by research questions that were focused on children's capacity for *voluntary* prosocial helping. We argue that a concept of ecological validity in which (1) developmental research tasks are required to exactly mirror the social and behavioral processes of participants' everyday activities and (2) that place the burden of such social and cultural isomorphism entirely on researchers is unnecessary, epistemologically under-leveraged, and ultimately doomed to fail (Lave, 1997).

Legare and Souza's (2012) study of the causal efficacy of ritual-based problem solving.

The second case of ecologically valid laboratory-based research is Legare and Souza's (2012)

series of studies examining the implicit criteria people use to judge the causal efficacy of rituals used for problem-solving purposes. Although the study is more cognitive than developmental psychology in discipline, the ecologically valid experimental design is applicable across the psychological sciences as an exemplary model of research.

Legare and Souza (2012) sought to examine the implicit causal “logic” embodied in the prescribed behavioral patterns of ritual-based cultural artifacts – that is, the properties of a ritual (e.g., the number of steps it involves, or the level of specificity of its prescriptions) that create the perception that it will be causally effective or “work” when enacted to solve a problem in everyday life. The authors chose a metropolitan area of southeastern Brazil in which curative or remedial behavioral prescriptions were common, locally called *simpatias* (which are purchased ritual “recipes” for a set of behaviors that, if enacted with fidelity, are believed to intervene on problems of health or interpersonal relations). *Simpatias* were widely “available, endorsed, and used for everyday problem-solving purposes” among the general public in this area of Brazil.

The study began with a content analysis of fifty extant and commonly purchased *simpatias*, from which Legare and Souza (2012) identified shared criteria such as specificity of time or place, repetition of procedures, and number of procedural steps. The researchers then used these derived criteria to design 18 new experimental stimuli (designed as *simpatias*) which systematically varied nine criteria across the later three studies. For example, two paired and otherwise identical experimental *simpatias* varied “specificity of time” by appending, in one, the phrase “in the first day of last quarter phase of the moon” to the behavioral prescription shared by both, “take the milk from a coconut and give it to the affected person to drink...” Differences in participants’ estimations of the efficacy of the two *simpatias* were taken as evidence that “specificity of time” was or was not a causally important criterion of everyday ritual.

The authors *specifically tested* the ecological validity of the experimental stimuli with 60 Brazilian adults to ensure they felt familiar but also to ensure they were not conventionally associated with particular everyday problems (e.g., illness, infidelity), which could confound criterion-based judgments of efficacy. The authors reported that, “many of the participants spontaneously answered that they had used several of these particular *simpatias* themselves in the past” (p. 5), which of course they had not, as Legare and Souza had created them. The participants’ apparent déjà vu provided excellent support for the ecological validity of the newly created experimental stimuli. Although the study’s findings are not central to the present discussion, three experiments found that the presence of a narrow set of “intuitive causal principles” in the experimental *simpatias* such as repetition of procedures, number of procedural steps, and specificity of time increased estimations of ritual efficacy in both Brazil and, subsequently, the United States.

This ecologically valid approach to the standardization of stimuli deserves special focus.

Legare and Souza (2012) argue that their “ecologically valid paradigm maximizes the best possible trade-off between internal and external validities.” What permitted the success of this trade-off in our view was the high fidelity of the experimental stimuli to both the material “look and feel” as well as the underlying principles of everyday Brazilian *simpatias*, a degree of ecological fidelity made possible by the authors’ ethnographic and content analysis work to understand and formally validate their experimental *simpatias*. As a result, their study is an exemplary case of ecological validity in the sense that instead of, “carry[ing] around our laboratory task and mak[ing] it happen in a lot of settings” they first “*discover[ed]* the way it occurs (or doesn’t occur) in non-laboratory settings” (Cole et al., 1997, p. 54) and used this information as strict criteria for the design of experimental stimuli.

It is notable that a similar “trade-off” argument is made by Kominsky et al. (2020); however, measurement (i.e., internal) validity is accomplished in the infant research they reference by making use of theatrical pretense, inanimate objects, or “highly simplified stimuli” that are “potentially far less realistic” (p. 6) than how infants encounter the phenomena under investigation in their everyday lives. To be sure, the demands of studying the cognition of pre-verbal infants presents researchers with significant interpretative burdens. Nonetheless, our view is that the trade-off as operationalized by Legare and Souza (2012) – which required neither the *additional* contextual complexities of theatrical pretense (e.g., “imagine this was a *simpatia* that a neighbor had followed in order to cure a cold...”) nor the addition of symbolically abstract stimuli – reflects a fundamental commitment to ecological validity that cannot be reduced to the relative ease of studying adults instead of children. Legare and Souza’s (2012) deep understanding of the ecological realities of ritual and *simpatias* in Brazil facilitated a high degree of experimental control without the need for dissection or artificiality.

Connections to other prominent cases of deficit-oriented developmental research

Our hope is that the foregoing discussion articulates and puts to use several general criteria of ecological validity as lenses into the extent to which research is designed to observe and describe the cultural strengths of communities involved in the research. The recommendations we provide in the next section intend to help researchers carry this critical analysis into a variety of methodological approaches. To that end, here we very briefly mention two prominent programs of research in developmental psychology which have been robustly critiqued for having poor ecological validity and, in part as a result, for advancing deficit frameworks regarding the skills and strengths of non-dominant communities. Both literatures explore the limits of the notion that research outside of the lab, in observational contexts,

necessarily makes progress on the issue of ecological validity and, by extension, strengths-based developmental science.

First, critiques of developmental research on caretaker-child attachment on conceptual, cross-cultural, and methodological grounds are robust and long-standing (see Burman, 2008; Keller & Bard, 2017; Otto & Keller, 2014; Quinn & Mageo, 2013; Vicedo, 2014). Because such well-developed critiques exist, we do not summarize them in this chapter. Nonetheless, there is much to be learned by studying how large portions of research on attachment – especially those rooted in Bowlby’s ethological and psychoanalytical approach – have emerged as a paradigmatic case of deficit-oriented, ethnocentric research characterized by systematic shortcomings with regard to ecological validity. For example, this research has often assumed that biological mothers are young children’s primary and most important attachment figure and that positively valenced “secure attachment” consists of universal behavioral characteristics on the part of caregivers and children (i.e., behaviors common to American middle-class mothers and children) – both assumptions have been robustly challenged with cross-cultural evidence. This body of research is a key example of how the ecological invalidity of rigidly standardized laboratory observation methods and ethnocentric analytic approaches, even with cross-cultural samples, can result in empirically questionable and politically/ethically oppressive developmental research findings and interventions (see Morelli, Quinn, et al., 2018).

Second, developmental research on the supposed “language gap” and the challenges from researchers in linguistic anthropology and from ethnographically sensitive language acquisition researchers in developmental psychology together amount to a master class in the nuances and pitfalls of advancing strengths-based and ecologically valid developmental science. Much of the critique centers on the controversial empirical and policy-oriented legacy of Hart and Risley’s

(1995) study claiming a “30 million word gap” in the quality of the linguistic environments of children from various racial and socioeconomic backgrounds, with affluent White children argued to be most advantaged. Critique was both swift and robust; however, unfortunately, so were large-scale family interventions and social policy that assumed the veracity of Hart and Risley’s findings. Hart & Risley’s research used observational methods in families’ homes which might tempt an assumption of good ecological validity. However, despite extensive in-home recordings and observations, a key omission in Hart & Risley’s research was an appreciation of the importance and developmental significance of overhearing and multi-party storytelling as robust linguistic practices supporting children’s language development in many minoritized cultural communities. We recommend the following for more through, nuanced heterodoxical stances against this deficit-oriented research paradigm: Adair et al. (2017); Avineri et al. (2015); Miller and Sperry (2012); Morelli, Bard, et al. (2018); Sperry et al. (2018); and a recent special issue of *International Multilingual Research Journal* devoted to the debate (Johnson & Zentella, 2017).

Recommendations for building ecologically valid, strengths-based developmental research

In this chapter we have integrated criteria for both strengths-based and ecologically valid developmental research. We have also reviewed the details of several studies that serve as clear and counter cases of ecologically valid research, building on our argument that ecological validity is a key aspect of strengths-based research. In this section, we extend these discussions into a set of recommendations, in no particular order and not a comprehensive “checklist,” that invite researchers working from a wide range of methodological approaches and areas of inquiry to enhance the potential of their research to advance strengths-based developmental findings.

Recommendation: Critically examine unit of analysis

It is crucial for strengths-based developmental researchers to understand the vulnerabilities of deficit-thinking that arise when conceptualizing developmental phenomena as delimited or located in individuals and merely “impacted” or “effected” by social/interactional and cultural/institutional processes (see Rogoff, 2003; Rogoff, 1995; Gutiérrez & Rogoff, 2003; and the extensive theoretical tradition of cultural psychology for alternatives to the conventional views of developmental psychology). For example, consider motivation. Classical theories of motivation locate the phenomenon as a property of individuals, creating a binary scale ranging from “intrinsically” (i.e., internally) motivated individuals to “extrinsically” (i.e., externally, or contingently) motivated individuals (e.g., Ryan & Deci, 2000). Observations of apparently low motivation are easily attributed to something – that is, motivation – lacking in individuals, a deficit perspective. However, cultural-historical perspectives locate motivation as a property of cultural activity in which individuals engage at varying and developmentally shifting levels of proximity (Roth, 2011). In this latter view, motivational shortcomings are conceptualized as participatory constraints such as barriers to access rather than something that individuals lack.

Recommendation: Understand all research as context creating

Strengths-based developmental researchers must account for the “research moment” – e.g., taking a survey, completing an educational assessment, performing a laboratory task, or answering a set of interview questions – as a full social, cultural, and political context of activity which may or may not be experienced as representative of seemingly similar activities in participants’ everyday lives. In this chapter we focused on several ways that laboratory-based developmental research is context-creating (see Lave, 1997 for an excellent discussion of how created experimental contexts can be leveraged for comparative, strengths-oriented insights). Semi-structured qualitative research interviews are also a discrete conversational genre and

context that is different than “normal” everyday conversation in important ways (see Packer, 2018 for an excellent discussion). Developmental researchers rarely theorize research interviews as unique interactional contexts; however, insights from sociolinguistics suggest that, for this reason, interview data in developmental research are severely under-leveraged for recognizing the skills, strengths, implicit theories, and identity commitments of participants. For an example of developmental research with mothers of two cultural groups that leverages the “interactional text” of interviews (Wortham et al., 2011) as a focal source of strengths-based developmental evidence, see Coppens et al. (2020).

Recommendation: Employ diverse samples, with nonethnocentric group comparisons

The problem of lacking diversity across the samples used in developmental research is widespread and widely recognized. However, when developmental studies include samples from more than one social or cultural group new potential problems can arise vis-à-vis comparative methodological designs. We recommend that researchers reflect on whether they are conflating *norm-referenced* comparisons with *criterion-referenced* comparisons. Given the extreme lack of diversity of sampling in developmental research (Nielsen et al., 2017), norm-referenced comparisons are the most vulnerable to deficit-oriented and ethnocentric conclusions as they use the developmental processes or outcomes of an over-sampled and politically dominant social group (often, middle-class European-heritage families and communities) as a normative point of reference for making judgements about the differing processes and outcomes of comparison groups. By contrast, *criterion-referenced* comparisons benchmark evaluations of developmental processes and outcomes on ethnographically grounded and culturally valued points of reference, such as being *acomedido* (López et al., 2012; Rogoff & Coppens, under review) or the amounts and kinds of talk in which children are socialized to be skillful in their own communities (see

above citations regarding critical perspectives on “language gap” research). An emphasis on criterion-referenced comparisons prevents consideration of diverse cultural and social group perspectives in developmental science from being reduced to relativism (Rogoff, 2003), whereby judgments about the value and efficacy of behavioral patterns or developmental outcomes are made impossible. Instead, the judgements of developmental scientists are scrutinized according to the values and socialization goals of the same social or cultural groups under investigation.

Recommendation: Prioritize actor- over observer-perspectives in developmental science

Interpretative qualitative researchers often stress the need to address problematic politics in conventional relationships among researchers and study participants. We argued above for prioritizing *actor* over *observer perspectives*, which includes but also has deeper significance than knowing what participants think about the tasks they are prescribed or the questions they are asked in developmental studies. Centering actor perspectives reconsiders relational-epistemological orientations conventional to developmental science. An actor-oriented developmental science becomes attuned to the goals, interests, relationships, and aspirations that children, youth, and adults are pursuing in the social and cultural activities that are the focus of developmental research, *in addition to* understanding the extent to which such aims are consequential for the developmental outcomes that concern researchers. Bang and Vossoughi (2016) argue against just this tendency

to [only] highlight relationships between social actors *in so far as* they are consequential to subject–object relations, such as the ways particular forms of classroom discourse or collaboration improve normatively defined academic outcomes. These theoretical and methodological decisions risk constraining the forms of knowledge and practice we develop, enact, and share, and thereby narrow the valued forms of learning and development we study and theorize. (p. 179)

Future considerations for ecological validity and strengths-based developmental science

We have characterized mainstream developmental research in a somewhat monolithic way; however, there are many notable exceptions in the field to the critiques that we have articulated as well as recent efforts underway to address issues that undermine an equity-oriented developmental science. For example, a new task force is being formed through the American Psychological Association focused on promoting anti-racist science and calls for an explicit “diversity science” in psychological research are increasing (e.g., Broesch et al., 2021; Miller et al., 2019; Plaut, 2010).

The concept of ecological validity itself requires scrutiny and theoretical attention to keep pace with innovations underway in research on learning and development. One read of existing concepts of ecological validity is they incline toward a conservative view of the existing social and cultural ecologies to which they allude. What happens when the concept of ecological validity is reconstituted as a forward-looking or imaginative criterion, holding research designs accountable to the family and community aspirations and children and youths’ future selves? What new methodological demands might this reconstitution introduce?

Critical learning scientists and developmental researchers working in emancipatory methodologies are swiftly advancing this agenda. For example, the syncretic research-intervention hybridities characteristic of social design-based experiments (e.g., Gutiérrez & Jurow, 2016), formative interventions (e.g., Sannino et al., 2016), participatory design research (see Bang & Vossoughi, 2016), as well as work aligned with politically imaginative frameworks such as culturally sustaining pedagogies (Paris & Alim, 2017) raise important new questions for how commitments to new concepts of ecological validity can advance both strengths-based and strengths-catalyzing forms of developmental research and intervention. In the foregoing discussion we suggested that the idea of *ecological validity as a joint accomplishment between*

researchers and participants may be a productive avenue for resolving the pervasive but fallacious stalemate between standardization and ecological validity in developmental research designs, highlighting the relational politics of researcher-participant interactions as a key issue. We highlight these emancipatory methodologies and developmental research programs to point out that this work is already underway.

The remaining question, which we pose as closing to the chapter, relates to the new demands of contextualization made visible by learning and developmental research whose explicit aim is to intervene on oppressive ecological realities and to both imagine and organize new future possibilities. To what ecology ought strengths-based developmental research or interventions be valid when the intervention's aim is the creation of new social ecologies?

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