Developmental Relationships as the Active Ingredient: A Unifying Working Hypothesis of ''What Works'' Across Intervention Settings

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Developmental relationships are characterized by reciprocal human interactions that embody an enduring emotional attachment, progressively more complex patterns of joint activity, and a balance of power that gradually shifts from the developed person in favor of the developing person. The working hypothesis of this article is that developmental relationships constitute the active ingredient of effective interventions serving at-risk children and youth across settings. In the absence of developmental relationships, other intervention elements yield diminished or minimal returns. Scaled-up programs and policies serving children and youth often fall short of their potential impact when their designs or implementation drift toward manipulating other ''inactive'' ingredients (e.g., incentive, accountability, curricula) instead of directly promoting developmental relationships. Using empirical studies as case examples, this study demonstrates that the presence or absence of developmental relationships distinguishes effective and ineffective interventions for diverse populations across developmental settings. The conclusion is that developmental relationships are the foundational metric with which to judge the quality and forecast the impact of interventions for at-risk children and youth. It is both critical and possible to give foremost considerations to whether program, practice, and policy decisions promote or hinder developmental relationships among those who are served and those who serve.

Traditionally rooted in medical and pharmaceutical science, the term *active ingredient* refers to the critical component of an intervention that is responsible for producing desired change in outcomes (e.g., sodium fluoride in toothpaste).

What if everything we do to promote children's positive development hinges upon a similarly essential element? What if the efficacy of every policy, program, or intervention is determined by whether such effort ultimately promoted or hindered the active mechanisms associated with such an ingredient—the developmental *active ingredient*? In this article, we advance the working hypothesis that there is such a universally applicable active ingredient underlying effective interventions. We propose that *developmental relationships,* characterized by attachment, reciprocity, progressive complexity, and balance of power, consistently promote positive development for children and youth across diverse developmental settings. Furthermore, we argue that the effectiveness of child-serving programs, practices, and policies is determined first and foremost by whether they strengthen or weaken developmental relationships.

We will first define developmental relationships with sufficient theoretical and operational specificity. Then, using case exam-ples drawn from empirical studies, this working hypothesis is applied to explain what distinguishes effective or ineffective interventions or programs for diverse at-risk populations. We conclude with the practical implications of our hypothesis on program design, professional practice, and policymaking.

Competing Hypotheses of Active Ingredients

When we adopt a particular scientific theory to address real world problems, we use the corresponding active ingredients both as the lens to examine the problems and as the road map to formulate our solutions. For example, the various uses of incentives and accountability to reform educational systems or social services are rooted in behaviorist theories (Fryer, 2010; Pawson & Tilley, 2004; Schwartz, 2001; Stecher & Kirby, 2004), and economic theories have influenced the use of parent-choice vouchers as a market instrument for pruning ineffective schools. Many of our educational reform efforts such as test-based accountability, merit pay for teachers, pay for grades for students, and school choice can all trace their roots to the basic theoretical ingredients of negative reinforcement, incentive, and market competition. However, very few policies or programs based on these behaviorist or economic active ingredients yield consistent or lasting positive effects (e.g., Hanushek & Raymond, 2005; Levitt, Janta, & Wegrich, 2008; Newmann, King, & Rigdon, 1997).

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What is the alternative to the misapplication of behaviorist or economic constructs to matters impacting children's learning and development? On the basis of the cumulative theoretical and empirical knowledge in developmental sciences, we propose developmental relationships as the active ingredient for positive and lasting developmental change.

Developmental Relationships as the Active Ingredient

The idea that relationships are important in human development is neither new nor controversial to our common sense or scientific understanding.

> Stated simply, relationships are the active ingredients of the environment's influence on healthy human development. They incorporate the qualities that best promote competence and well-being.... Relationships engage children in the human community in ways that help them define who they are, what they can become, and how and why they are important to other people (National Scientific Council on the Developing Child, 2004, p. 1).

It is evident from the cumulative scientific knowledge that relationships not only are of central importance to children's early cognitive, social, and personality development, but also have lasting influence on long-term outcomes, including social skills, emotion regulation, conscience development, trust in others, and general psychological well-being (see review by Thompson, 2006).

To formulate a testable or falsifiable hypothesis regarding the indispensable role of relationship in human development, we need to operationalize "relationship" beyond the common notions of emotional attachment or connection. Emotional connection is necessary, but insufficient to account for the totality of how a developing person is relating to others in her community. A working hypothesis of relationships must also account for interactions, activities, and power. We begin with a classical and succinct theoretical definition of optimal dyadic interactions (Bronfenbrenner, 1979):

> Learning and development are facilitated by the participation of the developing person in *progressively more complex* patterns of *reciprocal activity* with someone with whom that person has developed a *strong and enduring emotional attachment* and when the *balance of power gradually shifts* in favor of the developing person (p. 60; emphasis added).

The four criteria specified previously—attachment, reciprocity, progressive complexity, and balance of power—are simple without being simplistic. They describe a particular *style* of relationship that can apply to both dyadic and group relationships. Therefore, whereas Bronfenbrenner coined the term *developmental dyad* to denote this combination of criteria, we now broaden it as developmental relationship.

Interactions that befit the previously mentioned definition of developmental relationship are abundantly evident in even the most basic and natural developmental phenomena. Picture the familiar scene of an infant who is learning to walk in the presence of a parent. What enables the child to take each leap of faith is often the outstretched arms of the parent with whom the infant already has an enduring emotional attachment. The process that leads from crawling to walking is a series of progressively more complex developments in muscle growth, control, and coordination (Smith & Thelen, 2003; Spencer et al., 2006). To scaffold such development, the parent intuitively adjusts the level of support, from holding up the infant's body, to just hands, to offering emotional encouragement at a safe distance. Throughout the learning process, the physical and emotional interactions are joint and reciprocal. Over time, the power or control of the walking process shifts gradually toward the child, who advances from being prodded and encouraged to take the first wobbling steps or recover from a fall, to leading the adult into a giggling game of chase.

The four criteria of the developmental relationship—attachment, reciprocity, progressive complexity, and balance of power—are interwoven and interdependent aspects of one coherent mechanism of developmental interaction, rather than simply four separate checklist features.

The foundation of emotional attachment makes sustained and frequent reciprocal engagement possible without unnecessary coercions, and such engagement in turn enhances attachment. By attachment, we do not just mean the exclusive connection formed between primary caregiver and child, but any emotional connection that is natural, positive, and appropriate for the context. Children naturally want to sit and read with their favorite adults. Little Leaguers naturally want to go to practice with a coach who helps them learn and makes them feel like contributing members of the team. Even when social systems mandate children to attend certain types of activities, like school, there is little doubt that attention and participation differ greatly between a child who feels connected to a teacher and thus eager to take part in learning activities versus a child who passively complies.

In sustained and frequent joint activities with a child, the adult has ample opportunity to observe and gauge the child's competence and confidence and appropriately adjust the level of support to match, otherwise referred to as scaffolding and fading (Brown, Collins, & Duguid, 1989; Collins, Brown, & Newman, 1990). A child can develop his capacities with an adult's support (i.e., scaffolding) and exercise increasing control and independence with the gradual removal of support (i.e., fading). The level and type of adult support is thus reciprocal to the child's development, and the interchange between the two is a dynamically calibrated process. Vygotsky suggests that a child's learning and development are best facilitated with progressively more complex challenges within the *zone of proximal development* (ZPD) defined as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). The attentive adult, in joint and reciprocal activity, can best locate the ZPD by matching adult control and support to the perceived or actual difficulty experienced by the child. Naturally, as the adult's support fades or as the activity advances, the child is engaged in progressively more complex patterns of behavior and becomes more able and willing to exert independence and control (i.e., balance of power shifts toward the child). Figure 1 illustrates an idealized model of development encompassing these interwoven processes.

Like the example of an infant learning to walk, such reciprocal activities occur naturally in everyday settings. For instance,
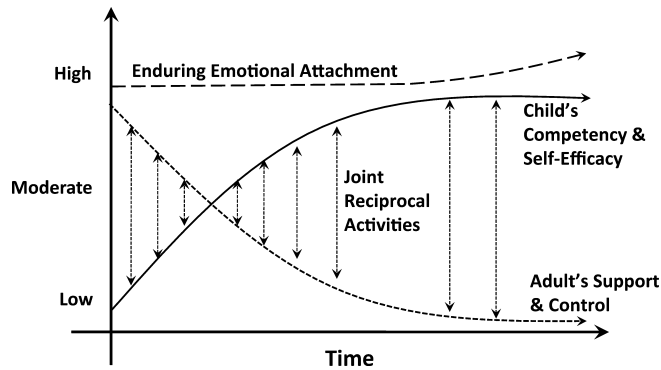
Figure 1. Illustration of the idealized model of developmental relationship.

when a child is learning to read, an engaged and attentive parent will select a book that matches a child's comprehension level and offer varying levels of support that evolve with the child's competence. Whereas the parent of an novice reader may read and act out the characters to help the child understand and appreciate the story, the parent of a more experienced reader might move from story telling to interpretation, inviting the child to take part in the reading (e.g., "Why does … do that?" "What do you think is going to happen?") A proceduralized equivalent of such reciprocal patterns of activity is "reciprocal teaching" (Palincsar & Brown, 1984), whereby children acquire increasingly more sophisticated reading and comprehension skills by alternately learning and teaching with their teachers or peers.

Applying Developmental Relationships to Understand Developmental Interventions

Our working hypothesis states that human development is best promoted when developmental relationships are present and supported. Conversely, human development is stifled when developmental relationships are weakened or absent. In the following case examples of empirical studies, we examine this hypothesis with empirical evidence across a broad range of developmental interventions and settings with diverse target populations. We aim to demonstrate that across many settings, the same conclusion applies: When developmental relationships are prevalent, development is promoted, and when this type of relationship is not available or is diluted, interventions show limited effects.

Case Example 1: Orphanage Improvement Studies

Traditionally, orphanage institutions are severely socially and emotionally depriving, so there are limited opportunities for developmental relationships (or any relationships) to emerge between caregivers and resident children. Children reared in institutions often have stunted physical growth, aggravated behavior problems, and prolonged attachment difficulties, and many of these problems persist even after they are adopted into permanent families (Chisholm, 1998; MacLean, 2003). Using

orphanages in St. Petersburg, Russian Federation, as an example, we discuss both the characteristics of traditional orphanages and the implementation and effect of one particular intervention to restructure such institutions for the explicit purpose of enhancing caregiver–child relationships (The St. Petersburg–USA Orphanage Research Team, 2008).

Across traditional orphanages around many parts of the world, there are typically a host of barriers to the development of caregiver–child relationships. In a study in the Russian Federation (The St. Petersburg–USA Orphanage Research Team, 2008), a child can experience up to 60–100 different caregivers before he reaches 19 months of age. Children are grouped together in large same-age groups with just a handful of caregivers, as opposed to the mixed age groups with a proportionally larger number of caregivers that is typical of families. Most children in these settings eat, sleep, and play according to the same regimented schedule, which might improve the ease of institutional operation but limits caregivers' ability to devote attention to individual children. Routine care is adult directed and without much regard for the children's needs and cues. Eating, changing, and bathing are typically done *to* the child mechanistically without the smiling, talking, and eye contact that would have been typical between a parent and a child in a family setting. As a relic of the Soviet era in which conformity and order were especially valued, even play tends to be completely caregiver directed; children are shown how to play with toys and corrected when they play with toys the "wrong" way. Although there are opportunities for joint activity, reciprocal interactions with mutually positive affect are rare. The rigidity of adult-directed routines does not significantly loosen even as children age. Rather, the worsening of children's behavioral or emotional problems with age may further reinforce the need for more, not less, adult control. Enduring emotional attachments are virtually nonexistent. Institutions offer neither opportunity to engage in progressively more complex patterns of behavior nor emotional safety and encouragement to attempt new tasks, so children's competency and confidence develop slowly, if at all. Figure 2 illustrates how development in such a deprived setting differs from the more idealized model in Figure 1.

A team of Russian and American practitioners and researchers (The St. Petersburg–USA Orphanage Research Team, 2008) designed and implemented an intervention aimed to improve caregiver–child relationships within institutions with the ultimate goal of improving children's developmental outcomes both within the institutions and after adoption. Structural changes were implemented in the institution to create family-like rooms with smaller groups of children of mixed ages and disabilities. Caregivers' assignments and schedules were altered so that one of two primary caregivers would be with a given group of children every day. Caregivers were trained to respond to children in a sensitive and reciprocal manner and to follow the child's lead. Further, caregivers were encouraged to take advantage of everyday opportunities to interact affectionately and reciprocally with children, such as during regular caregiving activities like feeding, dressing, bathing, and changing, much as a parent would.

Under the strong leadership of orphanage staff and with the support of the international research team, the implementation of these changes created a context conducive to the emergence
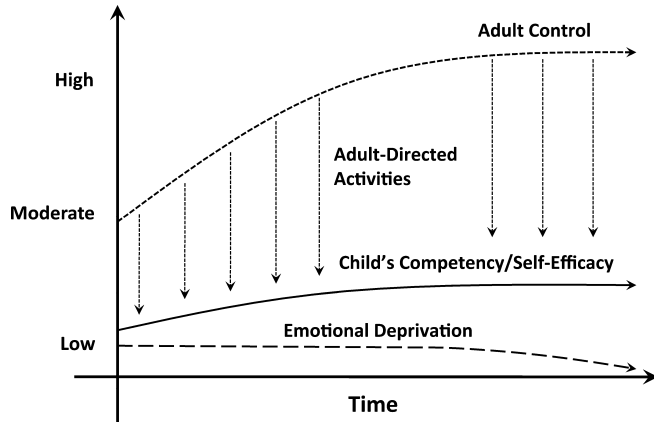
Figure 2. Illustration of development in orphanage settings deprived of typical social-emotional interactions.

of developmental relationships between caregivers and children. As caregivers got to know the children better, they became more attached to each child and developed greater understanding of each child's abilities. With caregivers increasingly attending to and following the child's responses and leads, caregiver–child relationships naturally progressed into more complex and reciprocal interactions. The emotional attachment between caregivers and children was much stronger than before the intervention and in comparison with other orphanage institutions.

Without any further changes to the children's nutrition or medical care, the training and structural changes boosted the quality of relational interactions. Both typically developing children and children with disabilities showed substantial improvements (among the largest ever reported from a developmental intervention study) across all domains of development, including physical growth (height, weight, and head circumference), motor development, social-emotional skills, and cognitive abilities. Although the magnitude of the improvements may be partially due to institutionalized children's low baseline scores, the improvements are markedly larger and longer lasting than institutional interventions that do not target relationships (e.g., Casler, 1965; Hakimi-Manesh, Mojdehi, & Tashakkori, 1984). After the intervention, caregivers also had lower scores on self-report measures of their anxiety and depression, suggesting that enhancing developmental relationships benefits both caregivers and children.

Case Example 2: Instruction and Learning in Elementary School Classrooms

In the United States, persisting educational challenges have spurred continued research efforts to identify and differentiate high- and low-quality instruction in classrooms (e.g., Pianta, Belsky, Houts, & Morrison, 2007; Stigler & Hiebert, 1999). Although there is obviously no equivalence between classrooms and orphanages, they nevertheless share some similar institutional features. The parallel is most apparent in low-quality classrooms. Teachers are responsible for increasingly larger classes of same-age children, and adult-directed instructional routines dominate the students' schedule and activities. Although

academic subjects become progressively more complex with each advance in grade level, students' participation and engagement in low-quality instructional settings remain limited to the passive and receptive role. In classrooms serving economically disadvantaged students, disciplinary practices are often needed to maintain students' compliance with mundane, repetitive tasks (e.g., Haberman, 1991). Further, teachers' questions and feedback tend to focus more on whether students' answers are right or wrong instead of the process of reaching an answer. In focusing on outcome rather than process, teachers may miss the opportunity to gauge a student's deep understanding of concepts and to support a relationship with that student. In U.S. classrooms, these characteristics of low-quality classrooms are typical of children's learning experiences rather than exceptional, especially for those who are poor (Pianta et al., 2007).

In these low-quality classroom environments, despite the progressive complexity of academic subjects, the balance of power is perpetually tilted toward the institutional requirements (e.g., curricula and tests) and the enforcers (e.g., teachers), not the students. Consequently, students' competency and development are often stifled, or at least develop in a highly compartmentalized manner. Students may accumulate subject knowledge without developing critical thinking skills, intrinsic interest in learning, or a sense of self-efficacy (Dweck, 1999). The students who succeed initially may nevertheless continue to expect high levels of teacher support and direction despite their own growing competence. Those who perpetually fail to learn may find disruptive ways to express their frustration, making discipline and control a continual battle that both sabotages instruction and undermines classroom relationships and climate (Haberman, 1991). Figure 3 illustrates the deviation from developmental relationship (Figure 1) under these conditions.

In contrast, classrooms identified as high quality in both domestic and international studies (Pianta et al., 2007; Stigler & Hiebert, 1999) embody qualities that support developmental relationships. The combination of *instructional support* and *positive climate* constitutes the leading predictor of subsequent student achievement (e.g., Hamre & Pianta, 2001). The interactions among teachers and students in such classrooms are characterized by sensitivity (*not* intrusiveness), evaluative feedback that focuses on learning and mastery (*not* simply correctness), and encouragement of child responsibility (*not* overcontrol). For
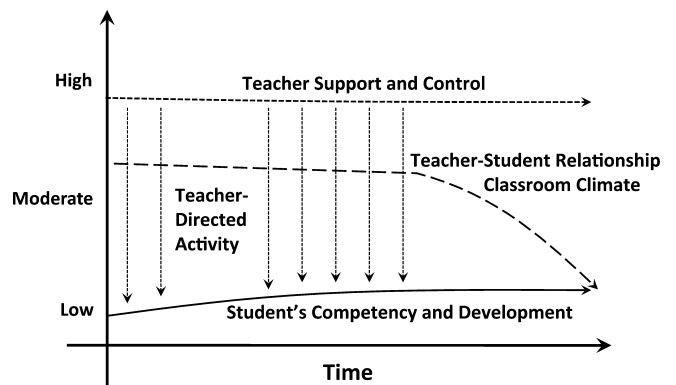

Figure 3. Illustration of development in overly teacher-directed classroom settings.

instance, Japanese mathematics teachers in high-quality classrooms allow time and opportunity for students to make mistakes and then engage the entire class in diagnosing and correcting mistakes, rather than simply correcting it for the students (Stigler & Hiebert, 1999). Such scaffolding and fading practices deepen students' learning, shift students' goals from performance (i.e., avoid mistakes) toward learning (i.e., use mistakes to learn), and shift the learning process partially toward the students (i.e., students diagnose mistakes rather than teachers offering correction).

Under the increasing weight of curricula, educational standards, and high stakes testing both in the United States and around the world, classroom interactions are inevitably more constrained than the idealized model of developmental relationship. However, effective and ineffective instructions are still distinguishable by the degree to which the instructional relationships between teachers and students approximate developmental relationships.

Case Example 3: Mentoring Relationships for At-Risk Youth

The two previous examples deal with issues within institutional settings where the goals and needs of the institutions often take priority over the needs of the children. This third example examines mentoring programs in noninstitutional settings where relationship building itself, rather than caregiving or instruction, is the primary goal.

Programs like Big Brothers Big Sisters are designed to enhance relationships between mentors and mentees as the foremost program objective. Evaluations of Big Brothers Big Sisters have turned up mixed and somewhat short-lived results in terms of program impact on mentees (Grossman & Tierney, 1998; Herrera, Grossman, Kauh, Feldman, & McMaken, 2007). On the surface, this seems to contradict our hypothesis that developmental relationship is the active ingredient for positive development. However, even relationship-focused programs are not the panacea for the lack of developmental relationships. Just as orphanages and classrooms can be differentiated by the quality of relationships emerging in those settings, in the study of mentoring relationships, Morrow and Styles (1995) differentiated developmental relationships from *prescriptive* relationships among mentor–mentee pairings.

Prescriptive relationships are found with adult mentors who expect the mentoring relationship to produce rapid, meaningful, lasting changes in their mentee's life. These mentors decided on activities and topics of conversation without the youth's input. They exhibit tendencies to prescribe activities to the youth and such tendencies increased over the duration of the mentoring relationship. Thus, prescriptive mentoring relationships are characterized by a high degree of control from the mentors that are not responsive to the mentees' needs and do not fade over time. Figure 4 illustrates this dynamic.

In such a mentoring relationship, the shift in power in favor of the mentee rarely occurs, and the relationship quality is bound to decline over time as the mentor remains inflexible and insistent on his or her plans for the relationship. In fact, these relationships show patterns of tension and discontent, and youths are less likely to talk to their mentors about their diffi-
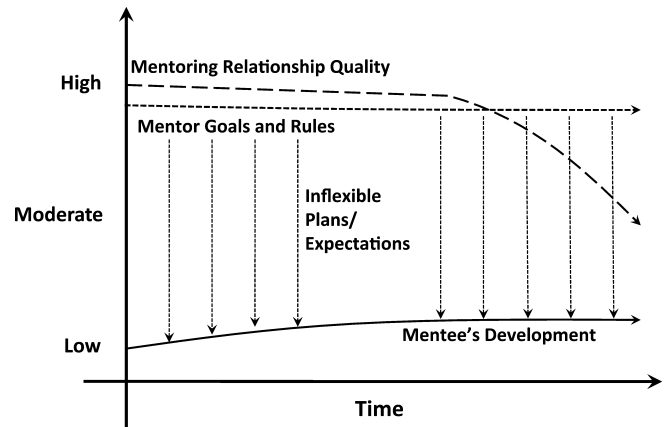

Figure 4. Illustration of development within prescriptive mentoring relationships.

culties. Less than one third of prescriptive mentoring relationships had long-lasting relationships, not to mention the lack of positive impact.

In contrast, mentors characterized as having a developmental relationship with mentees respond flexibly to the mentee's needs and current level of development. Mentees are invited to help decide what activities are carried out together and whether they want their mentor's advice and guidance. By including youth in the process of negotiating the relationship, mentors are able to fade their support over time and in response to the youth's growing competencies and confidence. Correspondingly, as these relationships develop, youth often come to their mentors to divulge problems they are having and to seek assistance. These relationships meet consistently and over a long period of time and provide youth the trusting and safe context in which further individual development and growth are possible.

Importantly, this example demonstrates that not *any* well-meaning relationship serves as the active ingredient in developmental interventions. Relationships that fail to meet the criteria for developmental relationships are neither long-lasting nor supportive contexts for youth. In the mentoring case, gradually shifting the balance of power toward the youth is particularly paramount for both engagement and impact. An authentic developmental relationship transcends the simplistic dichotomy of youth-driven versus adult-driven paradigms and strikes a balance of power through building youth and adult partnerships (Zeldin, Camino, & Mook, 2005; Zeldin, McDaniel, Topitzes, & Lorens, 2001).

Case Example 4: Home Visiting Programs

Although the concept of developmental relationships emerges from and is most easily applied to the understanding of the relationship between adults and children, it can also be extended to understand interventions and settings that involve an adult as the developing person. For example, in the context of social work and social services such as home visiting programs, the social worker fills the developed person role whereas the (adult) client being served is the developing person.

Most home visiting programs are built around the premise that if a home visitor assists a parent, the child will also benefit. Typical home visiting programs begin prenatally or in the first 2 years of a child's life and focus on parent education, child development, health care, preventing child abuse, and parents' well-being (Sweet & Appelbaum, 2004). Building the relationship between the home visitor and the parent is often part of the program focus. There is substantial variability both within and between home visiting programs in terms of implementation and program impact. The evidence is mixed as to whether home visiting has consistently positive effects (Gomby, Culcross, & Behrman, 1999; Olds & Kitzman, 1993; Sweet & Appelbaum, 2004; Weiss, 1993). Although there is limited research examining why some home visiting relationships succeed whereas others fail, the available research is consistent with the conceptualization of developmental relationships as the active ingredient in home visiting programs. Specifically, home visiting programs that operate on a limited instructional or case management model (e.g., Bickman, 1996) tend to have disappointing results, but when there is a strong home visitor–parent relationship and a focus on parenting strategies, families benefit (Korfmacher, Kitzman, & Olds, 1998).

What distinguishes effective home visiting relationships and ones with mixed or poor results? Ideally, an effective home visitor first forms a trusting relationship with a parent. A personal connection between the home visitor and the parent based on trust and acceptance may help the parent see herself as worthy of empathy, respect, and patience from a home visitor. The parent may in turn embody those qualities in her own parenting. On the basis of a personal connection, the home visitor's support is reciprocally matched to the parent's emerging competencies and needs. For a parent with few resources and relatively low competencies, a home visitor might actively connect the parent to resources (e.g., food pantry, child care, social support) in the community. As the parent becomes more competent and resourceful, the home visitor's support and guidance appropriately fades into a facilitator or mentoring role. This gradual shift in power ensures that the parent becomes more competent in caring for her child and in utilizing the resources available in her community. In this way, a parent can develop new skills (i.e., building relationships within a social or community network) that last long after a home visitor leaves the family.

But there are circumstances where a developmental relationship between the home visitor and the parent is less likely to form. For instance, a home visitor may visit infrequently, visits may be split between multiple home visitors for one parent, or home visitors may adhere rigidly to planned curriculum content for visits without responding contingently to a parent's current competencies and needs. These patterns of practice, often associated with increasingly institutionalized social service systems, echo parallel themes of inconsistent caregivers, rigid routines, and low-quality interactions in traditional orphanage settings. When the power consistently tilts toward the social service institution, home visitors are more likely to form prescriptive, rather than developmental, relationships. The visited parents are more likely to develop dependent, rather than self-sufficient, tendencies. The impact of these institutional features on home visiting includes short-lived visitor–parent relationships and lack of impact on parental competencies and outcomes.

Practical Implications of the Developmental Relationship as Active Ingredient Hypothesis

Conceptualizing developmental relationships as the active ingredient in human development has important and critical implications for our efforts to promote positive developmental change. We explore these implications across three areas—efforts to build programs and systems, efforts to provide aid and assistance, and efforts to evaluate and research the effectiveness of interventions.

Evidence-Based Programming and System-Building Approaches to Change

Much of what we do collectively to create positive and lasting change in children's development may be categorized into two general approaches. One approach is evidence-based programming. We choose self-contained intervention packages with either proven efficacy or demonstrated promise through research and evaluation. Such interventions range from multi-year programs that specify a target, curriculum, and staff qualification (e.g., the 2-year long nurse–family partnership in which nurses provide frequent prenatal and postbirth home visits to first-time mothers) to hour-long intervention protocols translated from laboratory experiments (Embry, 2004; Embry & Biglan, 2008). Treating a well-specified and self-contained program or experimental protocol as the indivisible atomic unit of evidence-based intervention, the implementation primarily focuses on how to replicate and scale up such units with fidelity.

An extension of evidence-based programming is the system-building approach—linking together an amalgamation of promising interventions to comprehensively address a wide array of systemic factors that constrain or derail children's development, such as poverty, crime, education, and parenting. For example, in early childhood work, we integrate parent education, social services, early intervention, and quality child-care programs (Coffman, Wright, & Bruner, 2006; Fulbright-Anderson & Auspos, 2006; Guralnick, 2011). The famous Harlem's Children's Zone (Dobbie & Fryer, 2011) is known for taking an entire neighborhood and transforming every aspect of the community, including safety and sanitation, social services, education, and parent engagement. In a cooking metaphor, the system-building approach is akin to making a crockpot dish whereby one hopes to stew together ingredients that are palatable on their own into a combination that tastes even better.

Despite the ebb and flow of these two complementary approaches, we as a field have not consistently implemented reliable, sustainable, and scalable solutions that effectively serve large numbers of at-risk children across settings. On the positive side, we have always had a plethora of theoretically motivated interventions that demonstrate promising success during pilot, experimental, or developmental stages. To our collective dismay, when such efforts finally earned the privilege of being scaled up in large field trials or actual use, formal evaluations often found no effect or highly uneven effects. Such cases include numerous after-school programs (see review by Granger, 2008), preschool programs (e.g., U.S. Department of Health and Human Services, Administration for Children and Families, 2010), home visitation programs (e.g., Wagner & Clayton, 1999), system-building

initiatives (e.g., Bickman, 1996), school accountability (see reviews by Hanushek & Raymond, 2005; Newmann et al., 1997), teacher accountability (see reviews by Levitt et al., 2008), performance incentive for teachers or students (e.g., Fryer, 2010; Murnane & Cohen, 1986), mentoring programs (e.g., Grossman & Tierney, 1998; Herrera et al., 2007; Wheeler, Keller, & Dubois, 2010), numerous literacy and mathematics curricula, social-emotional interventions, and at-risk behavior change and prevention programs (see What Works Clearing House listing).

It appears that the problem of "not working very well for very long" is the norm, rather than the exception, in existing efforts to promote developmental change in school and community settings. The decade-long federal program, What Works Clearing House, was designed to screen evaluation research to identify programs that both work and can scale. The program identified so few programs that passed its evidence criteria that it earned the unfortunate nickname Nothing Works Clearinghouse (Schoenfeld, 2006; Toppo, 2007; Viadero, 2008).

Our working hypothesis offers a partial explanation for the phenomenon described previously and an alternative approach to improving programs and policies for children and youth. We believe that programs or policies often fail in scale-up for one of two reasons. One, the program and policy never considered enhancing developmental relationship as one of its main objectives. Many school curricula experiments have mostly achievement goals and not relational goals. Policies such as merit pay for teachers, incentive for students' grades, accountability and sanctions for schools, and vouchers for school choice do not address relationships at all. Many of these programs and policies not only do not enhance developmental relationships, some adversely affect the climate and relationships within developmental settings (e.g., school accountability). Second, programs that had intended to promote relationships fail to do so with focus and intensity in actual implementation. The mentoring and home visiting case examples serve to demonstrate this effect.

We believe an alternative to the evidence-based programming and system-building approaches is to focus on developmental relationship as the active ingredient upon which the effectiveness of other program elements depend. Viewed through the active ingredient lens, the present system-building approach may be unnecessarily broad, whereas the evidence-based programming approach may be too narrowly focused on experimental programs or interventions. In program design, the focal question ought to be "How does a (practice, program, system, or policy) help to strengthen relationships in the developmental setting?" For example, if the policy or program decision is to adopt a new curriculum (teachers to students, or social worker to family), the most important question is whether or not such a curriculum would move the relational interactions closer to being developmental relationships, rather than merely the content, coverage, rigor, and alignment of such a curriculum. Beyond activities, if the design choices have to do with infrastructure (e.g., center-based vs. home visiting services), the question is not just logistics or financials, but whether the infrastructure choices enhance or inhibit the growth of developmental relationships.

Unlike the traditional evidence-based programming approach, we do not believe the active ingredient is a curriculum or an intervention protocol. Rather, it is the universal notion of developmental relationships that can be flexibly implemented by and integrated into a host of existing and new activities and procedures. Likewise, in system-building efforts, we believe that a system is not merely a coordinated combination of different "proven" interventions. Rather, a system and all of its components ought to provide multiple pathways deliberately constructed to enhance developmental relationships in each developmental setting affected by the system.

Focusing on developmental relationships does not exclude the need for a good curriculum or a coordinated social service system, but a well-intentioned curriculum and social service system will not be effective unless the implementation builds on and enhances the quality of developmental relationships in the classroom or the community.

Macrolevel Social Change Through Aid and Assistance

Although the concept of developmental relationships originates in dyadic interactions, it may apply to the relationship between groups and entities that have a differential in power or expertise. Although few systematic and experimental studies have been carried out on this scale, there are sufficient qualitative accounts of change (Bradley et al., 2009; Dickens & Groza, 2004; Marsh, Schroeder, Dearden, Sternin, & Sternin, 2004) that allow us to extend our hypothesis to this area for consideration. In aid and development work, both within countries (e.g., urban community revitalization) and between countries (e.g., foreign aid), the source of the initial assistance, whether a government entity or a nongovernmental organization, often starts as the developed entity. The group receiving aid and assistance starts as the developing entity. Thus conceived, the key to sustainable and enduring impacts and positive change might be whether or not the two groups manage to foster a developmental relationship over time.

For years, foreign aid on issues ranging from childhood malnutrition to poverty alleviation has followed a stereotypical storyline: aid arrives, problem lessens; aid leaves, and problem returns. But there is a counternarrative. Published first in the *British Medical Journal*, an approach called *positive deviance* has gradually garnered attention (Marsh et al., 2004). A group of childhood malnutrition advocates began not by pumping dollars and materials into Vietnam villages, but by first finding children and families that defy the malnutrition norm from within these villages (thus named positive deviance). This approach recognizes and acknowledges the current capabilities of a community rather than rigidly imposing ideas identified by the organization providing aid. In doing this, a positive and empowering relationship develops between the aid-providing organization and the receiving community, and the providers of aid serve more as facilitators than benevolent dictators, allowing the community to gradually take more responsibility and control over efforts to produce change.

In essence, by engaging the villagers themselves to identify what worked right under their noses and scaling up the change, the foreign aid workers effectively managed to build a developmental relationship with the local community—earning trust, building sophisticated local capacity for change, and shifting the balance of power toward the people being helped rather than building reliance on aid-supported materials.

We believe that it is constructive to conceptualize macrolevel aid and intervention between developed and developing entities (neighborhoods, schools, agencies, countries) as the cultivation of a developmental relationship akin to that between a supportive mother and her wobbling infant or that between an empowering mentor and his mentee.

Program Evaluation and Policy Research

The constructive goal of research and evaluation is not simply to prove whether a program worked by some distal outcomes (a daunting, expensive, and often unfruitful task), but rather to add to the knowledge of how programs and systems need to be implemented to maximize the impact of well-known active ingredients and identify the program-specific pathways that allow the active ingredients to transform both individual and settings in an enduring way (Pawson & Tilley, 2004). When research and evaluation focus too narrowly on programmatic inputs and outcomes, as typical evaluations do today, they identify shortfalls in results without offering an insightful understanding of why programs fail (Hendricks, Plantz, & Pritchard, 2008; Pawson & Tilley, 2004; Schambra, 2011). The lack of consistent, positive, and lasting outcomes only fuels more research and evaluation for impactful programs (to no avail) and increases pressure on schools and community organizations to deliver or prove such outcomes on short order. Such pressure often inadvertently leads schools and community organizations further astray from promoting development relationships through their activities and services (Halpern, 2005).

As we believe developmental relationships constitute the active ingredient for developmental interventions, we argue that research and evaluation involving developmental interventions should focus their efforts on determining what effect the actual implementation of programs and policies has on developmental relationships among the people and settings affected. To do that, we need credible metrics for developmental relationships. The empirical studies cited in our case examples offer a range of assessment tools and methodological options to assess developmental relationships among caregivers and children, teachers and students, mentors and mentees, and home visitors and parents. In addition, we advocate for new and innovative measures that can easily be used by nonresearchers and can quickly and reliably determine relational quality in field settings. When quality standards and indicators are anchored in reliable measures of quality relationships, the research and evaluation of programs and policies, instead of serving only as the arbiter of competitive programs, can inform us about how actions impact relationships so we may learn how to better improve developmental outcomes.

To facilitate such a shift in evaluation and research focus, government and foundation funders of evaluation and research efforts need to adopt, at minimum, a phased-in evaluation strategy that first prioritizes the understanding of program or policy impacts on developmental relationships before proceeding to the much more expensive effort to causally determine outcomes. As we have argued in theory and based on empirical evidence, few programs or policies serving children have hopes of producing lasting outcomes if they do not enhance, or if they undermine, the quality of developmental relationships. The thousands of studies reviewed by the What Works Clearing House, most of which focused on outcomes and failed to find them, ought to have signaled the futility of chasing after distal outcomes without first examining credible intermediate indicators in the present.

Conclusion

Developmental relationships are hypothesized to be the active ingredient in developmental interventions. Such relationships are defined relatively parsimoniously as human interactions characterized by four interwoven features—attachment, reciprocity, progressive complexity, and balance of power. We made the testable claim that developmental interventions produce desirable outcomes if and only if such interventions enhanced developmental relationships and offered case examples of empirical studies that shed light on developmental relationships across multiple settings for multiple target populations.

Developmental relationships should become the focal point for efforts intended to produce meaningful developmental change: "How does a (practice, program, system, or policy) help to strengthen relationships in the developmental setting?" With this focus, decision making starts and ends with how an action impacts relationships.

One common response we receive when discussing this article with professionals who serve children (funders, program managers, researchers) is: "We do agree with the importance of relationship building. But funders pay for and want hard, measurable outcomes, not soft, hard-to-measure relationships." We believe it is time to make developmental relationship the very outcome that is measurable and worth paying for.

References

Bickman, L. (1996). A continuum of care: More is not always better. *American Psychologist*, *51*, 689–701.

Bradley, E. H., Curry, L. A., Ramanadhan, S., Rowe, L., Nembhard, I. M., & Krumholz, H. M. (2009). Research in action: Using positive deviance to improve quality of health care. *Implementation Science*, *4*, 25.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, *18*, 32–41.

Casler, L. (1965). The effects of extra tactile stimulation on a group of institutionalized infants. *Genetic Psychology Monographs*, *71*, 137–175.

Chisholm, K. (1998). A three-year follow-up of attachment and indiscriminate friendliness in children adopted from Romanian orphanages. *Child Development*, *69*, 1092–1106.

Coffman, J., Wright, M. S., & Bruner, C. (2006). *Beyond parallel play: Emerging state and community planning roles in building early learning systems*. Retrieved from http://www.finebynine.org/uploaded/Beyond%20Parallel%20Play%20Oct2006.pdf

Collins, A., Brown, J. S., & Newman, S. E. (1990). Cognitive apprenticeship: Teaching the crafts of reading, writing, and mathematics. In

L. B. Resnick (Ed.), *Knowing, learning, and instruction: Essays in honor of Robert Glaser* (pp. 453–494). Hillsdale, NJ: Lawrence Erlbaum.

Dickens, J., & Groza, V. (2004). Empowerment in difficulty: A critical appraisal of international intervention in child welfare in Romania. *International Social Work*, 47, 469–487.

Dobbie, W., & Fryer, R. (2011). Are high quality schools enough to increase achievement among the poor? Evidence from the Harlem Children's Zone. *American Economic Journal: Applied Economics*, 3(3), 158–187.

Dweck, C. S. (1999). *Self-theories: Their role in motivation, personality and development*. Philadelphia, PA: Psychology Press.

Embry, D. D. (2004). Community-based prevention using simple, low-cost, evidence-based kernels and behavior vaccines. *Journal of Community Psychology*, 32, 575–591.

Embry, D. D., & Biglan, A. (2008). Evidence-based kernels: Fundamental units of behavioral influence. *Clinical Child and Family Psychology Review*, 11, 75–113.

Fryer, R. (2010). *Financial incentives and student achievement: Evidence from randomized trials* (National Bureau for Economic Research Working Paper No. 15898). Retrieved from http://www.edlabs.harvard.edu/pdf/studentincentives.pdf

Fulbright-Anderson, K., & Auspos, P. (Eds.). (2006). *Community change: Theories, practice, and evidence*. Washington, DC: Aspen Institute.

Gomby, D., Culcross, P., & Behrman, R. (1999). Home visiting: Recent program evaluations—analysis and recommendations. *The Future of Children*, 9, 4–26.

Granger, R. C. (2008). After-school programs and academics: Implications for policy, practice, and research. *Society for Research in Child Development Social Policy Report*, 22(2), 3–19.

Grossman, J. B., & Tierney, J. P. (1998). Does mentoring work? An impact study of the Big Brothers Big Sisters program. *Evaluation Review*, 22, 403–426.

Guralnick, M. J. (2011). Why early intervention works: A systems perspective. *Infants & Young Children*, 24, 6–28.

Haberman, M. (1991). The pedagogy of poverty versus good teaching. *Phi Delta Kappan*, 73, 290–294.

Hakimi-Manesh, Y., Mojdehi, J., & Tashakkori, A. (1984). Short communication: Effects of environmental enrichment on the mental and psychomotor development of orphanage children. *Journal of Child Psychology and Psychiatry*, 25, 643–650.

Halpern, R. (2005). *Confronting the big lie: The need to reframe expectations of afterschool programs*. New York, NY: Partnership for After School Education.

Hamre, B. K., & Pianta, R. C. (2001). Early teacher-child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development*, 72, 625–638.

Hanushek, E., & Raymond, M. (2005). Does school accountability lead to improved student performance? *Journal of Policy Analysis and Management*, 24, 297–327.

Hendricks, M., Plantz, M. C., & Pritchard, K. J. (2008). Measuring outcomes of United Way-funded programs: Expectations and reality. In J. G. Carman & K. A. Fredericks (Eds.), *Nonprofits and evaluation. New directions for evaluation* (pp. 13–35). Hoboken, NJ: Wiley.

Herrera, C., Grossman, J. B., Kauh, T. J., Feldman, A. F., & McMaken, J. (2007). *Making a difference in schools: The Big Brothers Big Sisters school-based mentoring impact study*. Philadelphia, PA: Public/Private Ventures.

Korfmacher, J., Kitzman, H., & Olds, D. (1998). Intervention processes as predictors of outcomes in a preventive home-visitation program. *Journal of Community Psychology*, 26, 49–64.

Levitt, R., Janta, B., & Wegrich, K. (2008). *Accountability of teachers: Literature review*. Santa Monica, CA: RAND Corporation.

MacLean, K. (2003). The impact of institutionalization on child development. *Development and Psychopathology*, 15, 853–884.

Marsh, D. R., Schroeder, D. G., Dearden, K. A., Sternin, J., & Sternin, M. (2004). The power of positive deviance. *British Medical Journal*, 329, 1177–1179.

Morrow, K. V., & Styles, M. B. (1995). *Building relationships with youth in program settings: A study of Big Brothers/Big Sisters*. Philadelphia, PA: Public/Private Ventures.

Murnane, R. J., & Cohen, D. K. (1986). Merit pay and the evaluation problem: Why most merit pay plans fail and a few survive. *Harvard Educational Review*, 56, 1–17.

National Scientific Council on the Developing Child. (2004). *Young children develop in an environment of relationships* (Working Paper No. 1). Retrieved from http://www.developingchild.net

Newmann, F., King, M., & Rigdon, M. (1997). Accountability and school performance: Implications from restructuring schools. *Harvard Educational Review*, 67, 41–74.

Olds, D., & Kitzman, H. (1993). Review of research on home visiting for pregnant women and parents of young children. *The Future of Children*, 3, 53–92.

Palincsar, A. S., & Brown, A. L. (1984). Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities. *Cognition and Instruction*, 1, 117–175.

Pawson, R., & Tilley, N. (2004). Realistic evaluation. In S. Matthieson (Ed.), *Encyclopaedia of evaluation* (pp. 362–367). Newbury Park, CA: Sage.

Pianta, R. C., Belsky, J., Houts, R., & Morrison, F. (2007). Opportunities to learn in America's elementary classrooms. *Science*, 315, 1795–1796.

Schambra, W. (2011). Measurement is a futile way to approach grant making. *Chronicle of Philanthropy*, 23(6), 1. Retrieved from http://philanthropy.com/article/Measurement-Is-a-Futile-Way-to/126203/

Schoenfeld, A. (2006). What doesn't work: The challenge and failure of the What Works Clearinghouse to conduct meaningful reviews of studies of mathematics curricula. *Educational Researcher*, 35, 13–21.

Schwartz, B. (2001). *The costs of living: How market freedom erodes the best things in life*. Princeton, NJ: Xlibris.

Smith, L. B., & Thelen, E. (2003). Development as a dynamic system. *Trends in Cognitive Sciences*, 7, 343–348.

Spencer, J. P., Clearfield, M., Corbetta, D., Ulrich, B., Buchanan, P., & Schöner, G. (2006). Moving toward a grand theory of development: In memory of Esther Thelen. *Child Development*, 77, 1521–1538.

Stecher, B., & Kirby, S. N. (Eds.). (2004). *Organizational improvement and accountability: Lessons for education from other sectors*. Santa Monica, CA: RAND Corporation.

Stigler, J. W., & Hiebert, J. (1999). *The teaching gap: Best ideas from the world's teachers for improving education in the classroom*. New York, NY: Free Press.

Sweet, M., & Appelbaum, M. (2004). Is home visiting an effective strategy? A meta-analytic review of home visiting programs for families with young children. *Child Development*, 75, 1435–1456.

The St. Petersburg–USA Orphanage Research Team. (2008). The effects of early social-emotional and relationship experience on the development of young orphanage children. *Monographs of the Society for Research in Child Development*, 73(3), 1–297.

Thompson, R. A. (2006). The development of the person: Social understanding, relationships, conscience, self. In W. Damon & R. M. Lerner (Eds.), N. Eisenberg (Vol. Ed.). *Handbook of child psychology. Social, emotional, and personality development* (Vol. 3, 6th ed., pp. 24–98). New York, NY: Wiley.

Toppo, G. (2007, April 11). Usefulness of education research questioned. *USA Today*. Retrieved from http://www.usatoday.com/news/education/2007-04-10-education-science_N.htm

U.S. Department of Health and Human Services, Administration for Children and Families (2010). *Head Start impact study*. Final report. Washington, DC: Author.

Viadero, D. (2008, December 15). Research effort aims to bury 'nothing works' image. *Education Week 28*(16).

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* (pp. 79–91). Cambridge, MA: Harvard University Press.

Wagner, M. M., & Clayton, S. L. (1999). Parents as Teachers program: Results from two demonstrations. *The Future of Children*, *9*, 91–115.

Weiss, H. (1993). Home visits: Necessary but not sufficient. *The Future of Children*, *3*, 113–128.

Wheeler, M. E., Keller, T. E., & Dubois, D. L. (2010). Review of three recent randomized trials of school-based mentoring. *Social Policy Report*, *24*(3).

Zeldin, S., Camino, L., & Mook, C. (2005). The adoption of innovation in youth organizations: Creating the conditions for youth–adult partnerships. *Journal of Community Psychology*, *33*, 121–135.

Zeldin, S., McDaniel, A., Topitzes, D., & Lorens, M. B. (2001). Bringing young people to the table: Effects on adults and youth organizations. *Community Youth Development*, *2*, 21–27.

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