



Resilience is not an innate capacity. Rather it is a dynamic process that requires support and nurturance.

—Deborah Buehler

The Inaugural Heidelise Als Lecture The Synactive Theory, NIDCAP, and Resilience

Deborah Buehler, PhD

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Heidelise Als, PhD asked *Can we integrate technological advance into our affective launched-ness as humans.*¹ This idea of our humanness, our affective launch, and NIDCAP's opportunities to support healthy progressions is a critical one. And further, these developments seem interrelated to the notion of resilience.

What is resilience? The Merriam Webster dictionary definition reads: *re-sil-i-en-cy; an ability to recover from or adjust easily to adversity or change.*² Resilience is considered a brain capacity. Neuropsychologist David Eagleman wrote: *The human brain is a dynamic, information-seeking system... it alters its own circuitry to match the demands of the environment and the capabilities of the body.*³ What are these environmental demands and body capabilities? Within our work, our NIDCAP framework recognizes the mismatch between the displaced fetus and

young infant and their hospital environment. As Heidelise often said, *we are never not in an environment.* She described human infants as having been promised three environments: (1) the mother's womb; (2) the mother's breast and body; and (3) the species social group. Since the intensive care environment is NOT one of these evolutionarily promised environments, what are the implications for development and unfolding relationships, for well-being, and, interrelatedly, resilience by being in this environment at such a time in their growth? Resilience is the capacity to withstand difficulties. To say that intensive care settings present "difficulties" is a tremendous understatement.

Difficulties may be experienced as stress. Stress may result from novel, unexpected, unprepared, or untoward experiences. For newborns and young

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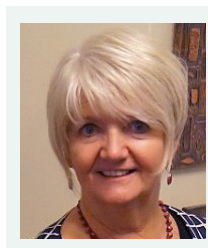
infants, this may be a mismatch between capabilities and capacities and their environments. The Center on the Developing Child at Harvard University describes stress as *positive, tolerable, or toxic*. They write that stress *can have a cumulative toll on an individual's physical and mental health—for a lifetime. The more adverse experiences in childhood, the greater the likelihood of developmental delays and later health problems.*⁴ We know what this looks like from our observational NIDCAP training. We observe autonomic, motoric, state, attentional, and regulatory stabilities, stresses, and strivings.

Heidelise frequently quoted Winnicott's writing: *Babies are liable to the most severe anxieties... if left for too long (hours or minutes) without familiar and human contact; they have experiences which can only be described as: Going to pieces; Falling forever; Dying, dying, dying; and Losing all vestige of hope for the renewal of contact.*⁵

Editorial

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A milestone in a shared journey



The echoes of the 34th Annual NIDCAP Trainers Meeting are still resonating, marking yet another milestone in our shared journey of promoting developmental care for hospitalized newborns. In this issue of the *Developmental Observer*, we are thrilled to bring you the essence of the

meeting, capturing the energy and insights that unfolded during this significant event.

One of the highlights was Deborah Buehler's Inaugural Heidelise Als Lecture, a powerful discourse on resilience that injects fresh inspiration into our NIDCAP endeavors. The echoes of her words continue to reverberate, reminding us of the profound impact our collective efforts can have on the lives of the infants we care for.

Our global community shone brightly as we heard about the groundbreaking work happening across continents. Abstract presentations from Australia, Belgium, Canada, Colombia, France, Germany, Iran, Israel, Qatar, and Spain showcased the diversity and richness of our shared commitment. We are confident that the innovative approaches highlighted in these presentations will serve as motivation for your work.

Gretchen Lawhon, in her insightful summary of the meeting, emphasizes the paramount importance of family in our mission. She articulates how the family unit plays a pivotal role in the NIDCAP journey, underlining the interconnectedness of our work with the broader fabric of familial bonds.

Through the lens of Family Voices, Katie Reginato Casca-mo shares a deeply personal account of her NIDCAP experience, demonstrating the transformative power of listening

and the profound impact it had on her premature son. Her narrative exemplifies the human dimension of our work and reinforces the enduring value of empathy in healthcare.

Resilience is not an innate quality. From the womb, fetuses are developing all sorts of competencies. When newborns are born prematurely, they may be described as "fighters" with strong drives to steady, survive and thrive. Yet, after attempts to steady and to thrive, they may have experiences of repeated overwhelming instability and they may give up. This is what is referred to in psychology as learned helplessness. If this situation persists it may result in failure to thrive outcomes.

Reilience develops and is affected by experience. The Model of Stress applies to individuals of all ages, including parents of infants in intensive care. Illness, sleep deprivation, anxiety, fears, struggles, all strain experiences of resilience and well-being and unfolding parenting confidence and competence. Professor Kristen Lee Costa wrote *sometimes we just don't have the skills we need for emotional regulation or stress tolerance. In general, our threshold for coping can vary a lot,*

Venturing into the international landscape, we explore developmental care in China and Xiaojing Hu's dedicated efforts to integrate NIDCAP principles. The global imprint of NIDCAP is evident, resonating with our shared commitment to realizing the goals set by the NFI for NIDCAP care worldwide.

As the *Developmental Observer* embarks on its 17th volume, we are committed to bringing you innovative stories that captivate and inform. In our new "Behind the Scenes" feature, we introduce Rob Catalano, a hidden force behind the scenes since the inception of our publication. His story illuminates the collaborative efforts of the many committed individuals who contribute to each issue.

Your feedback is the lifeblood of our publication, and we eagerly anticipate hearing from you. Let us know which features resonate with you and share your ideas for new content.

Thank you for your unwavering commitment to the NIDCAP mission.

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Erratum. Image on page 10 of Vol 16, Issue 3 should read – 'Joana'

according to a lot of variables. Even missing a night's sleep, or not being nourished, or cranking at work with a lot on your plate can press upon us and affect our resilience at a point in time.⁶

For Healthcare Professionals, those variables may include staffing shortages, experiences of burn-out, a pandemic and caring for vulnerable and ill infants and their families, including the demandingness of twelve-hour shifts. One can easily see how stressors compound, leading to exhaustion, anxiety and frustration which further lead to lessened feelings of effectiveness, well-being, and resilience.

One of the central tenets from our NIDCAP model is that when stresses are too great for an individual, support from the social environment may have steadying, balancing influences – at all ages. The same council from the Center on the Developing Child at Harvard University wrote: *The single most common finding is that children who end up doing well have had at least one stable and committed relationship with a supportive parent, caregiver, or other adult.*⁷ Stable, committed, supportive, nurturing relationships are at the core of NIDCAP philosophies and practices. This is the Affective Bond that Heidelise described.

To understand the nurturing influence of NIDCAP on functioning, we can look to the writings and research of our very own NFI scientists:

The field of neuroscience provides overwhelming evidence that the brain organizes itself based on its early experiences. Heidelise, Frank Duffy, MD, and Gloria McAnulty, PhD wrote: *NIDCAP significantly improved neurodevelopment in terms of behavior, functional brain connectivity and brain structure and health.*⁸

The study of epigenetics provides mounting evidence that infant environments can change the chemistry of their genes—both negatively and positively. Heidelise wrote: *NIDCAP may work at the level of preventing such untoward epigenetic effects by supporting the infant's optimal genomic rather than distorted epigenomic blueprints.*⁹

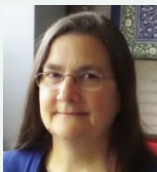
From the field of microbiology, Jeffrey Alberts, PhD introduced the idea of a shared Mother-Offspring Microbiome (or MOM) with extensive involvement of autonomic, motor, state, attention, and self-regulation functions. Alberts was *struck by the compatibility of gut-brain ideas with the distinctly integrative and bi-directional qualities of NIDCAP perspectives.*¹⁰

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Editorial Board



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Within neurophysiology, oxytocin has been shown to play a role in human behaviors and social interactions. Dorothy Vittner wrote: *Oxytocin may serve as a potential moderator for improving responsiveness and synchrony in parent-infant interactions.*¹¹

The field of Functional Medicine studies the influences and interactions of nutrition, molecular biology, and epigenetics on health and disease with individualized approaches to promote well-being. NIDCAP Trainer, Deana DeMare Hally describes Functional Medicine as *the focus of the epigenetic interplay between environmental influences and one's biological systems; which of course very much aligns with Synactive Theory.*¹²

Brain, genes, gut, hormones, and their interactions - the evidence is mounting to support the necessity of caring for young infants in environments that closely align with their expectations and capabilities.

When NIDCAP is studied, it is done so as a whole caregiving approach rather than as ingredients to care. This is because the NIDCAP approach supports dynamic, evolving developmental progressions, relationships, interactions, and systems. The Synactive Model of Development and interrelatedly the Synactive Model of Developmental Care have been conceptualized as graphics. To appreciate the complexity of this care, you can overlay these two models on one another for considerations of individuals in the context of the intensive care setting.¹³

We know from the Synactive Model of Development (Figure 1) that individual/environment interactions are con-

tinuously occurring with active developmental strivings and that infants are integrally part of their social systems. We also know that development never stops, for any of us. Everyone is on their own developmental trajectory and is developing all the time. In our NIDCAP lectures, we make analogies about how our subsystems are taxed by learning new skills, such as driving a manual car or learning to downhill ski. In intensive care settings, families and healthcare professionals alike are experiencing new and perhaps difficult moments and situations. For the infants, their parents are their primary nurturers and advocates. Parents are learning and responding to their own experiences, which include parenting their infant in a hospital setting and all that that means. Parents are part of family systems, who are also made up of individuals on their own trajectories. Parents, and their family systems, are all in turn cared for by the infant intensive care healthcare professionals and staff. These hospital team members are also interacting with their physical and social environments and developing themselves. Healthcare professionals and staff care for infants and families are part of hospital, healthcare systems – which are all made up of individuals. All these individuals and their systems are all part of larger local and global communities.

Figure 2 is a purposefully dizzying graphic to show that stresses are being experienced at all levels by all individuals... positive, growth-promoting ones, and negative, damaging ones, as well as ones in between. It may be daunting to imagine how to support optimal experiences and outcomes for infants, parents, families, healthcare professionals, and hospital systems,

Figure 1

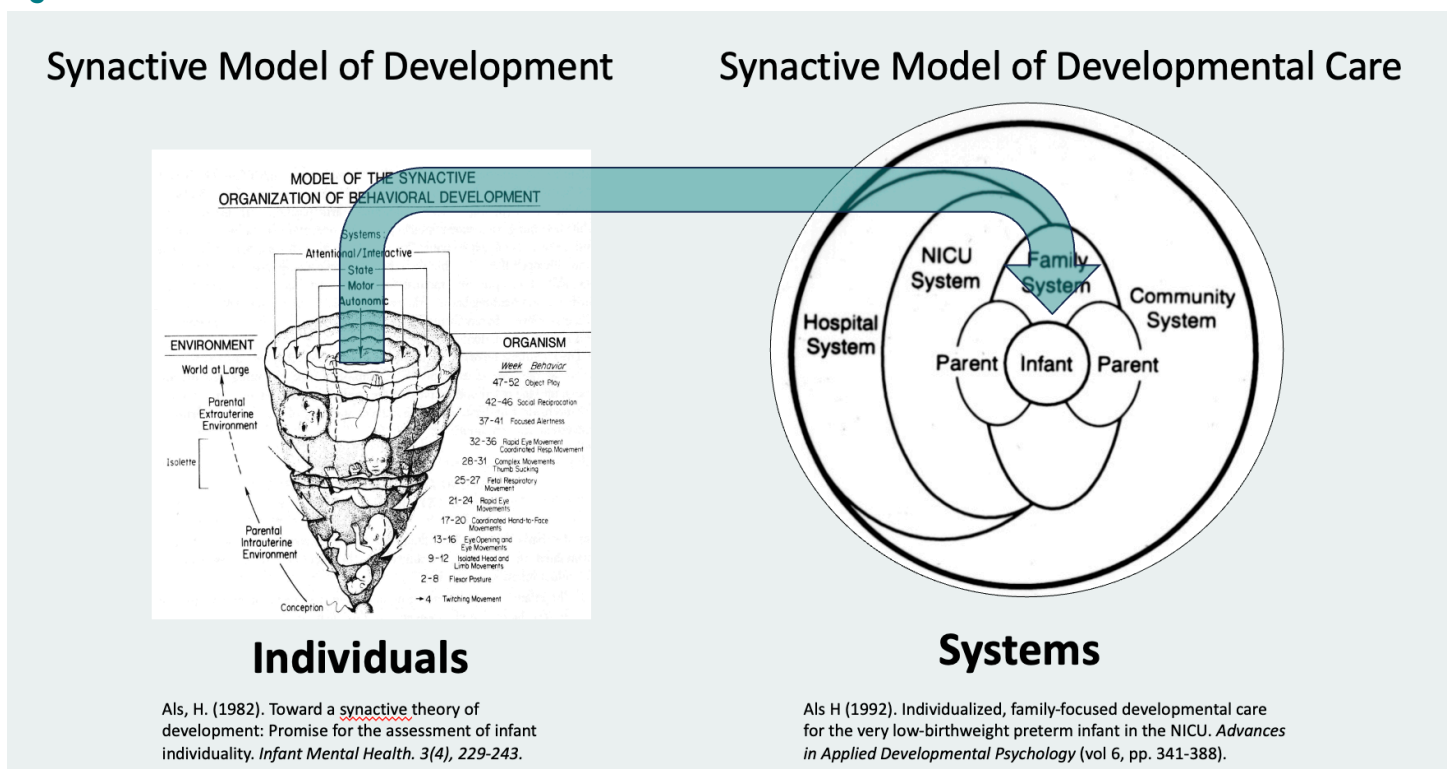
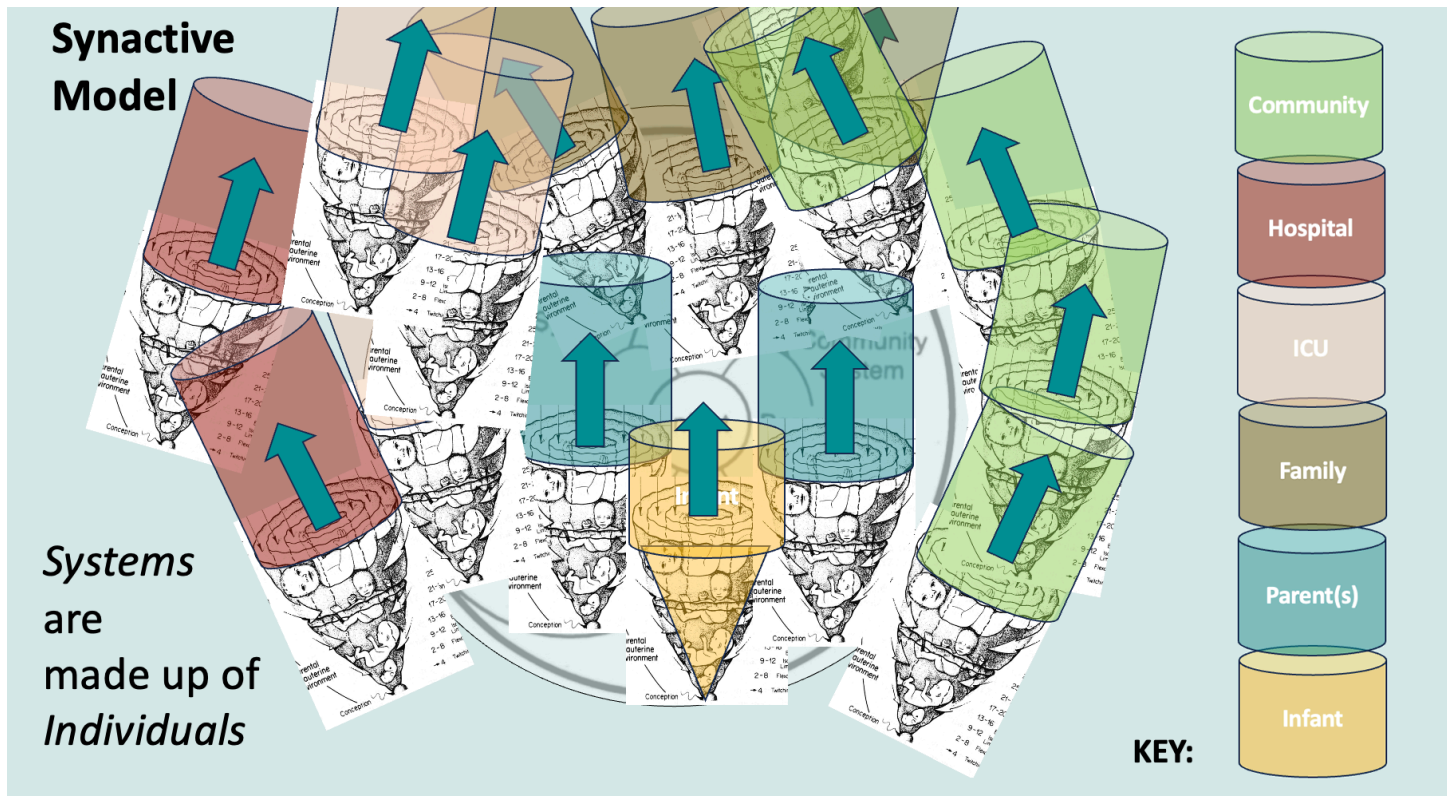


Figure 2



so we look to our NIDCAP framework to guide us under these circumstances.

The key to resilience and well-being in infants, families, healthcare professionals, and even whole systems is through embedding understandings and support for all those individuals with consistently well-integrated, infant-family-staff mutually regulating NIDCAP care. Supported, resilient professionals will support and guide families and parents who in turn will nurture their infant's emerging next steps and their own resiliencies. This is also multidirectional – balance and strength in an individual (infants through adults) support the balance and strength of others.

Inspirations from the field of Infant Mental Health support our NIDCAP care translations to create optimal healthcare environments. Joy Browne, PhD has written extensively and is an important resource on this topic. She wrote: *There is no more important place to establish a solid foundation for a baby's emerging infant mental health than in intensive care.*¹⁴ She also described the importance of creating a solid foundation for parents and their roles as the parents of their vulnerable young infants.

Reflection and supportive relationships, integral components of Infant Mental Health approaches, have long been valued and well-integrated into our NIDCAP approach. Linda Gilkerson and Heidelise wrote: *Relationships are central to the goals and the implementation of developmentally supportive care. And they quoted Shanok to say (t)he inclusion of reflec-*

tive process as a component of developmentally supportive care helps the nursery become a place where strengths are emphasized while vulnerabilities are partnered.^{15,16}

Dr. Amit Sood stated *Resilience is the core strength you use to lift the load of life.*¹⁷ One of the most poignant examples of this message can be found in the story that Heidelise used to share in her introductory NIDCAP lectures about a young infant named Ronnie. Ronnie was a child who had chronic lung disease. His hospital stay lasted months and months. The triage room in the back of the NICU was converted into his private room with his family. Heidelise worked very closely with them. She maintained contact with Ronnie through at least 20 years of age. Ronnie's early childhood experience in the hospital, included receiving a tracheotomy and lung disease, yet none of these challenges diminished his delight and joy in his world - nor his mother's confidence in his care and in herself as his mother. That is the beauty of resilience and the power of NIDCAP care.

Resilience is not an innate capacity. Rather it is a dynamic process that requires support and nurturance. How do infants develop the tools for resilience? How do they go from "giving up" to the beginning of experiences of competence and stability? The guide for developing resilience comes from turning the lights down low, being tucked into flexion, hand swaddling, and holding, it comes from nurturance. The infant's parents are what is needed for these ongoing opportunities for the infant to experience relaxation and success. And parents need support and nurturance from the healthcare professional team,

who in turn, need to be nurtured themselves. NIDCAP care provides critical scaffolding for the development of resilience.

Heidelise's charge to all of us... was *Can we integrate that technological advance into our affective launch as humans?* This is an extraordinarily important challenge to strive to do. Because having greater resilience and well-being at all ages helps to navigate difficult challenges of life which in turn may lead to their mastery and ever-joyful lives.

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Moment by Moment

Developmental Observer

NIDCAP Care in the Moment

Supporting hands

NIDCAP Care in the Moment

Family supporting their baby during medical care

NIDCAP Care in the Moment

Connecting through challenges

NIDCAP Care in the Moment

Sibling care

NIDCAP Care in the Moment

Family

NIDCAP Care in the Moment

Co-regulation during care giving tasks

NIDCAP Care in the Moment

Family Strength

Collaboration and support for and from each infant's family is the core of NIDCAP.

NIDCAP Care in the Moment

Calming Supportive Hands

NIDCAP Care in the Moment

Studying Support

NIDCAP Care in the Moment

Family intimacy

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