NEWS | POSTED DECEMBER 18, 2019

Letter to Members from SRCD President Ken Dodge

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Dear SRCD Colleague,

During this holiday season, I wish you peace and joy, and I ask you to pause to celebrate the wonder of human development.

No matter our wealth or the circumstances of birth, our species has evolved so that every infant enters the world as the most helpless of all creatures. Through the love of caregivers, infants develop into phenomenal human beings capable of building skyscrapers, creating art as beautiful as a sunset, and self-reflectively uncovering the secrets of our own growth and development.

Let's toast our fellow developmental scientists who have made break-through discoveries of how infants grow from those helpless creatures to accomplished skill masters. Here are but a few examples.

Over the first 18 months of life, an infant progresses from lying prone to turning over to crawling and finally to walking. *How does she do that?* Former SRCD President Esther Thelen[1] first described the physical mechanics of weight-height ratio to predict when an infant will stand up on two legs and walk; she explained it all in terms of dynamical systems and chaos theories. Karen Adolph and Catherine Tamis-LeMonda[2] showed us how and why a crawler would dare to stand up and endure an average 32 falls per hour to become an awkward novice walker.

Given a dizzying array of stimuli, *how does an infant learn to focus visual attention on a particular object?* Another former SRCD President, Marc Bornstein[3], taught us that, like with many other developmental achievements, the answer lies in the wonder of the parent-infant relationship. Linda Smith[4,5] discovered the dance that mother-infant dyads play in jointly attending to an object through hand-eye coordination that nurtures the infant's mastery of focused attention. In independent laboratories with different perspectives, Linda[6] and Mike Tomasello[7,8] have each shown us that, in turn, processes of parent-infant joint attention facilitate the infant's learning of words. Elika Bergelson[9] discovered that infants as young as 6 months of age already know the meanings of many common nouns.

How does an infant learn to detect words in oral speech? Speech is continuous, but words are segmented. Jenny Saffran, Dick Aslin, and Elissa Newport[10] discovered that in the first months of life infants use statistical learning to extract words from continuous sounds, not unlike machine learning in contemporary big data science. Dick[11] also discovered that similar statistical learning processes enable infants to identify regularities in what they see.

Would we expect an infant's social development to be any less elegant? Joe Campos[12] discovered that as early as the first several months of life, infants "teach" their caregivers to respond by reaching and smiling, and caregivers scaffold reciprocal behaviors so that by the time of "Pat-a-Cake," parent and infant are well-versed in each other's signals. Natasha Cabrera[13] mapped these early reciprocal interactions among mothers *and* fathers, showing both universalities and uniqueness among families from diverse cultural backgrounds. Jack Bates[14] showed us that diversity prevails among infants who vary in temperament, leading to challenges for parents who must learn to read the particular characteristics of their own infant in order to establish a serve-and-return synchrony that catalyzes social synapses in the brain and catapults an infant into a social being ready to venture out to strangers and peers. Ellen Pinderhughes[15,16] described the challenges parents face in raising children adopted internationally and transracially, as well as the barriers and discrimination experiences of gay fathers.

While we celebrate the diversity of these experiences, *how do we understand when something goes awry?* Vonnie McLoyd[17] theorized how poverty at birth makes parenting stressful, and Seth Pollak and Jamie Hanson[18] showed that as young as five months of age, infants born into poverty exhibit lower frontal lobe volume and inhibited brain growth trajectories. Sometimes, early stress becomes overwhelming. Parents often respond to a crying baby by gently rocking him, but sometimes rocking turns into shaking. A whiplash effect causes subdural bleeding and is now identified as a form of physical abuse called Shaken Baby Syndrome[19]. This scientific discovery has changed parenting practices.

How can developmental scientists prevent and ameliorate such problems? Mary Dozier[20,21] created the Attachment and Biobehavioral Catch-up (ABC) intervention to promote healthy parent-infant relationships in stressful contexts. And it works. Mary is a rock star.

There is so much more than I can cite in this brief note. I bow to the thousands of developmental scientists who have enriched our lives through their discoveries and who have shown that children's development after the first years is no less wondrous than in the early years. Developmental scientists have helped us understand how children learn executive control to regulate their actions, how middle schoolers navigate a culture with multiple languages and norms, and how adolescents transition from their families to become independent adults who parent their own children and contribute to their communities. The nature of the human species is not only to uncover these mysteries through science but also to improve our condition through collaboration and innovation.

We still have a long way to go. Around the world, too many children starve from lack of food, too many children suffer from war, and too many families are torn apart as they try to emigrate to safer circumstances. In spite of being the wealthiest nation in the world, maternal and infant mortality in the U.S. rank among the bottom of all developed nations, and disparities in early health and development across income and racial groups are growing rather than disappearing.

I am reminded of the U.S. National Academy of Sciences' mandate in establishing the Society for Research in Child Development in 1933: SRCD was created to support developmental science, developmental scientists, and the application of developmental science to improve society. So at this time of year, I invite you to celebrate our developmental science, the scientists who make these discoveries, and the contributions that developmental science has made to improving life outcomes for children.

The story of human development is not only scientific but also personal. I invite you to recall your favorite birth story. Mine is my son. My wife Claudia and I were lucky to witness Graham's birth as we accompanied his birth mother to the hospital. At the moment of birth, we stepped into the hallway and waited only moments until the nurse brought Graham to us. Being the physician, Claudia calmly washed him clean, wrapped a blanket around him, and cuddled him. Being the psychologist, I fainted. Literally, the sight of blood and the excitement of it all made me drop to the floor. Each day hence, I tried to figure out Graham's needs only to be overwhelmed by his new accomplishment-of-the-day.

Mostly, I ask you to pause as we jointly attend to the wonder of birth.

Happy Holidays,

Ken Dodge
President of SRCD

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