Esther Thelen (1941–2004)

Esther Stillman Thelen was born on May 20, 1941. She died of tongue cancer on December 29, 2004, at the age of 63 at the height of her career. Esther's work on infant motor behavior introduced developmental psychologists to the principles and methods of dynamic systems theory, reinvigorated the moribund field of motor development, and provided a theoretical and empirical basis for clinical work in pediatric physical and occupational therapy.

Esther was an extraordinary observer of infant behavior and a brilliant developmental theorist. She discerned complex patterns in infants' seemingly simple and capricious movements, and she realized the profound implications of those patterns for understanding general processes of learning and development. Unparalleled by other infant researchers, Esther conducted dozens of painstakingly detailed and technical longitudinal studies that were to become her trademark. She was a wildly creative experimentalist (infants in her studies marched on motorized treadmills, kicked with elastic binding their legs together, reached wearing glitter sleeves, etc.) and an elegant writer and speaker.

In 1962, Esther married David Thelen, an academic historian, with whom she raised two children, Jeremy and Jennifer. She received her bachelor's degree in zoology from the University of Wisconsin (1964). Following a hiatus as faculty wife and mother, she received her master's in zoology (1973) and her doctorate (1977) in biological sciences from the University of Missouri—Columbia. Esther's training in ethology and biology informed her unique approach to psychological development—her emphasis on natural behavioral patterns and their developmental origins, and her insistence that psychological functions, like any biological process, are embodied in real time in a moving, behaving organism.

While holding her first faculty position in the Department of Psychology at the University of Missouri, Esther had battled tongue cancer into remission, relearning how to talk and eat in the process. Esther's early work focused on the famous U-shaped developmental trajectory in infants' stepping movements. On the basis of experiments showing similarities between supine kicking and upright stepping, Esther argued that the mysterious disappearance and reappearance of upright stepping resulted from developmental changes in the ratio of leg fat to muscle mass. The notion that leg fat might be responsible for aspects of motor development belied a century-long tradition of stressing neural maturation as the primary impetus for developmental change. Esther's proposal that no single factor, not even the brain, is uniquely responsible for development became an enduring theme of her work.

In 1985, Esther moved to Indiana University Bloomington as a full professor of psychology. Her Indiana lab became an intellectual hub for dynamic systems approaches to development and a training ground for using new motion-tracking technologies with infants. In that climate, Esther and Linda Smith applied ideas from dynamic systems theory to the emergent nature of development itself. Their book, *A Dynamic Systems Approach to the Development of Cognition and Action* (Thelen & Smith, 1994) addressed central questions in developmental science: the developmental origins of new behaviors, the possibility of patterns without a pattern generator, the effects of multiple interacting factors on development, and the nature of change at various nested time scales.

In the early 1990s, Esther extended dynamic principles from spontaneous rhythmical movements to goal-directed reaching behaviors. She showed that infants must discover idiosyncratic solutions for bringing their hand to a target object because of individual differences in their bodies, energy levels, and experience. In the late 1990s, Esther and Linda investigated infants' perseverative errors in Piaget's classic A-not-B task. Esther and Linda demonstrated that infants' repetitive reaching movements are grounded in the biomechanics and perceptual-motor history of the individual. In collaboration with Gregor Schöner, they proposed a formal dynamic field theory to explain the A-not-B error. Most recently, Esther was expanding dynamic field theory to account for the real-time processes of looking and remembering that underlie infants' familiarity and novelty preferences in visual habituation.

In a career lasting only 27 years, Esther received many prestigious honors, including the Boyd McCandless Award for Early Contributions to Developmental Research, a Distinguished Faculty Research Lectureship at Indiana University, a Research Career Development Award from the National Institutes of Health (NIH), two Research Scientist Development Awards from the National Institute of Mental Health, and a MERIT Award from NIH. She was a fellow of the American Association for the Advancement of Science and the American Psychological Society, and she was a member of the National Research Council of the National Academy of Sciences. She was president of the International Society on Infant Studies and of the Society for Research in Child Development (SRCD), the two primary professional societies in infant and child development. Her prolific research output included three books, an SRCD monograph, and more than 120 articles and chapters. She served on the editorial boards of 15 journals in child development and motor control.

Esther was a respected colleague, cherished mentor and friend, and licensed Feldenkrais practitioner. To her family, she was a loving wife, adoring mother, and delighted grandmother. Esther is survived by Dave, her husband of 42 years; their children, Jerry and Jenny; a grandson, Jackson; and her sister, Harriet Saeck. Everyone who knew Esther was impressed with her sense of style. Her clothes, cooking, and writing all bore her personal, creative touch: a colorful scarf to cap off an outfit, the perfect turn of phrase to capture an idea. In keeping with Esther's spirit, Dave, her dearest friend, invited everyone back to their house after Esther's memorial service for one last Esther-style party. Even more befitting, Dave placed a huge basket with Esther's scarves in the hallway for all to take home a tangible memory. We wear them with pride and gratitude.

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