

Neuroscience and Pneumatology: Understanding Children as Meaning-Makers

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“Children are born with a capacity for faith. They create their own reality and worldview from their own experiences. Their way of finding meaning—or faith—is through relationships, their own actions and observance of the actions of others, and a strong dash of imagination” (Furnish 1993, 76).

Children are meaning-makers. The brain matters as it provides clues for understanding this essential developmental process. Neuroscience research offers insight into how children develop in response to both biological and environmental influences, making meaning from their multiple experiences. An interdisciplinary approach that engages in conversation with neurology, psychology, theology, and religious education unveils crucial insight into how children develop, learn, and respond to the world around them. This includes their recognition and response to the presence of the Holy in their lives.

Understanding how the brain takes in and responds to external information provides systematic evidence that demonstrates how children engage in a meaning-making process throughout their entire lives. This understanding holds important implications for religious educators as we strive to nurture children in their faith development. Dorothy Jean Furnish, recognized this process within every child, describing children as meaning-makers.¹ Honoring the experiences of children, Furnish paved a new road for Christian education. Furnish highlighted the importance of inviting children to encounter God. In this space, children grow and develop, claiming and responding to God’s presence in their lives. Studying the brain affirms Furnish’s insightful teachings; reveals children as meaning-makers; deepens our understanding of how children engage in this process; and provides religious educators with crucial information that informs a faithful ministry with children.

Building on the work of Furnish, this paper recognizes the essential cognitive systems that engage children in the meaning-making process and advocates for an intentional pedagogical method that not only recognizes God’s work in and through children, but supports children in this process. If children begin making meaning from their life experiences from the very beginning, then every moment of their lives offers an opportunity for them to recognize, claim, and respond to God’s presence.

Affirming the different elements that effect the development of children, this paper seeks a holistic approach to understanding how children make meaning. First, this paper identifies both the biological (nature) and environmental (nurture) aspects of neuroscience placing this research into conversation with psychology (attachment theory). Through a Christian lens, this work next offers a pneumatological affirmation of God’s relational presence in and through the lives of all persons. Finally, bringing neuroscience and pneumatology into conversation, this interdisciplinary dialogue

¹Dorothy Jean Furnish, 1921-2011, was an influential Christian educator and professor of Christian education. With her unprecedented and visionary work, as revealed in *Exploring the Bible with Children, Living the Bible with Children, and Adventures with Children*, DJ’s understanding, appreciation, and respect for children offered groundbreaking insight into ministry with children. Her work highlights children as essential members of the faith community, describing children as meaning-makers, affirming their experiences of God, and calling religious educators to pay attention to the needs of every child in their faith development.

asserts that God is active in the lives of children. These Divine meetings become crucial moments for children in their meaning making process. Neuroscience informs the understanding of children as meaning-makers and highlights the need for religious educators to respond in a way that nurtures the youngest members of our communities as they develop the tools to recognize, claim, and respond to God's active presence in their lives, making meaning from their encounters with the Holy.

The Brain Matters: Neuroscience

Claiming children as meaning-makers begins with an understanding of the brain and how it develops in response to both nature and nurture. Engaging in interpersonal neurobiology, Daniel Siegel seeks to understand how the brain makes meaning from experiences with others. Siegel argues that the brain, as the major organ that functions within the neurological system, works within a complicated framework of biological connections and processes to assist the whole body in regulating energy and information flow" (Siegel 2008, Disc One). The brain is an open system that takes "in unique input from outside of itself" (Siegel 1999, 17). Through this process, the neurons within the brain, in response to outside stimuli, fire, creating new connections within the neural system, developing a biological awareness. This biological awareness, or memory, provides the body with information that can be accessed and used in the future.

This biological process starts at birth. For the first 18 months, individuals possess the biological ability for explicit memory. This factual memory allows the infant to begin to identify and recognize objects. Around 18 months of age, the hippocampus becomes fully developed, providing toddlers with the ability to create and make use of autobiographical memory. This form of memory has a sense of self and time, allowing persons to begin identifying an object in relationship with a previous experience. With explicit memory only, an infant may see a round toy and identify it as a ball. An older child whose hippocampus has developed may provide a more descriptive report regarding the ball, sharing a story about playing with the ball, or describing what happens when he rolls the ball. Through explicit and autobiographical memory, the brain takes in, processes, and organizes information. Due to neural plasticity, the brain changes as children engage in this process, making new synaptic connections and meaning that they can access and use throughout their lives.

Psychologists John Bowlby and Mary Ainsworth recognized the important role a child's experience with others plays in this meaning-making process. Ensuring survival, children must learn how to use their behavior systems to attain a response from their caregivers. If a child cries out of hunger and the caregiver responds, then, as the neurons fire and the infant's brain makes new synapse connections, she begins to realize that if she is hungry, and she cries, someone will feed her. When caregivers are attentive and respond consistently to a child's need for attention, the child learns that the system works and develops trust in their caregiver. Bowlby refers to this as a secure attachment. If a child seeks attention and the caregiver doesn't respond, then the meaning-making process results in another conclusion. No matter how inattentive a caregiver, nearly all infants become attached. Therefore, attachment theory focuses on the reliability of the attachment asking how the attachment experience affects the child's ability to trust the caregiver and others. As infants make meaning out of their interactions with their caregivers and ultimately other persons, their experiences "lead to specific organizational changes in an infant's behavior

and brain function” (Siegel 1999, 68). Thus, an infant’s experience with others shapes her meaning-making process.

This understanding of children as meaning-makers and the focus on interpersonal relationships challenges the formal cognitive operational understanding of how the brain develops. Whereas Piaget focuses his cognitive developmental theory on an individual’s development based on a linear unraveling of abilities, Furnish and Siegel highlight the important role society, culture, and communal experience play on a child’s development. This social understanding of development reflects Vygotsky’s assertion that children’s interpersonal relationships greatly influence their development of higher level cognitive skills. Siegel argues that these inter-relational experiences not only effect the “neuronal growth of the developing brain [but] these salient emotional relationships have a direct affect on the development of... memory, narrative, emotion, representations, and states of mind” (Siegel 1999, 68). The brain matters. It demonstrates how children take in, process, and organize information in response to their experiences, providing the foundation for a holistic approach to religious education that pays attention to the experiences of children, engages them in wondering and reflection, and supports them as they grow and develop in response to the world around them.

The Brain Matters: Pneumatology

The brain provides insight into how children engage in the meaning-making process. Whereas Furnish began her work with scripture, understanding the Bible to be the place where children encounter God, this paper begins with theology and the pneumatological assertion that God is active and present in the everyday events of every child’s life. The doctrine of pneumatology, the study of the Spirit, affirms children’s experiences of God and highlights the potentiality for these experiences to become the foundational moments in their meaning-making process and faith development.

The first creation narrative tells how God creates humankind in God’s image. Upon completion, God looks at creation and declares it “very good” (Genesis 1:31). From the beginning, “the Spirit of God hovers or moves over the face of the waters,” creates the wonders of this world, and brings life out of chaos (Baker-Fletcher 2007, 131). In this crucial narrative, God affirms God’s good work, bestows God’s blessing upon creation, and highlights God’s active presence in the work and life of creation.

This understanding of God as the loving and approving creator is affirmed in John Wesley’s doctrine of prevenient grace. According to Wesley and the Methodist tradition, God’s prevenient grace claims every person as a child of God, making “it possible for human beings to literally feel convicted by omnipresent, divine love” (Baker-Fletcher 2007, 348). This gift affirms God as the one who offers love, blessing, and approval, inviting all persons into relationship with the Holy. From the beginning, every child is wrapped in God’s eternal love. God moves and communicates through relationships. Seeking “to reveal and give God’s self, God seeks to be united with other persons” (LaCugna 1973, 230). Through prevenient grace, God offers the unconditional gift of love and invites all of humanity into relationship with the Divine.

This relational divinity that comes to humanity through the gift of grace, establishes communication between the creator and the created. “God is by nature self-communicating. The gift of existence and grace that God imparts to the world... is nothing other than God’s own

self” (LaCugna 1973, 210-211). Through the relational arc, God participates in the life of creation and invites creation to participate in the life of God. God communicates God-self to creation, offering God’s gift of life (grace) to all of humanity through this self-communication.

Children do not enter into God’s relational presence at a specific time, age, or event, but they enter into this world surrounded by God’s unconditional and eternal loving presence. “All human beings—including children—have the capacity in human freedom to experience the divine self-communication” (Mercer 2005, 150). As Psalm 139 proclaims, God creates humanity, knits all persons in their mother’s womb, and knows all of their thoughts and actions. God, as a relational God, moves in and through every child’s life, bringing them into God’s creative work, and engaging with them on their life journey.

Affirming every child’s experience with the Divine provides the foundation for faith development and theological meaning-making. As children recognize God’s presence and claim their experiences with the Holy, their neurons fire and their synapses make new connections. Through this brain activity and theological reflection, children make meaning in response to God’s grace, God’s love, and God’s presence in their lives.

The Brain Matters: Religious Education

Claiming God’s active presence in the lives of children through a pneumatological understanding and recognizing that the child’s neurological system makes meaning out of these experiences, religious educators must use a pedagogical method that invites, guides, and nurtures children as they make meaning in response to their experience with the Divine. Rebecca Nye and her work with relational consciousness emphasizes the importance of paying attention to how children interact with others. According to Nye, children “provide their own evidence of what their spirituality is like” (Hay 2006, 108). Relational consciousness focuses on the awareness persons have in response to their interaction with others. Nye’s research reveals the “child’s awareness of being in relationship with something or someone” (Hay 2006, 109). Focusing specifically on the I-God consciousness highlights the space where God’s presence in the lives of children is affirmed, recognized, and claimed.

The I-God consciousness is the space religious educators must intentionally hold open for children. In this space, religious educators join children in their meaning-making process, affirming their conscious awareness of God’s presence in their lives, and guiding them as they grow in their faith making new discovering in response to their experiences with God. This intentional pedagogical lens, encourages children as they “discover personal meaning for their present lives... [while keeping] open the possibility of future learning and meanings” (Furnish 1993, 75-76).

Understanding children as meaning-makers demonstrates the ineffectiveness of the historical banking pedagogical method. Memorization does not promote significant faith development because it fails to engage children in the meaning-making process. Children find meaning in response to their daily lives through relationships, action, imagination, and by observing the actions of others. Furnish refers to this as the child’s “integrated verb faith.” Neuroscience affirms this active understanding of faith development, arguing that children do not learn by receiving knowledge, but instead by engaging in the world through feeling (Furnish 1995).

Children do not claim religious teachings as their own until they wrestle with the material in conversation with their own experience of the Holy.

Understanding children as meaning-makers with a verb faith, leads to an intentional ministry approach that works with and supports children as they grow and develop in response to their inter-relational experiences. As Nye suggests, teachers must “become aware of the dimensions of children’s relational consciousness, to be sensitive to them when they are expressed, and to respond creatively” (Hay 2006, 131). First, faithful religious pedagogy must affirm the “I-God” relational consciousness, opening a space where children’s experiences are affirmed and where they are invited into the community as valued members. This includes inviting children to share their faith stories, offering their personal narratives that reveal God’s active presence in their lives and the lives of others. Intentional ministry requires faith communities to include children in worship and other activities where children can experience the practices of the faith tradition as modeled by members of the faith community. This supports faith development as children build relationships and make meaning from their interpersonal relationships. Second, in this space, as children are “guided by adults who understand that faith development is a lifelong process,” faith communities must model and encourage children in the process of active wondering and reflection, asking open questions that engage children in reflection on their experiences. The daily examen offers insight into this task providing questions that include:

- I wonder what made you feel grateful today.
- I wonder what made you feel ungrateful.
- Today I felt close to God when.
- Today I felt far away from God when (Linn 1995).

Third, religious education must engage the imagination as children remember their experiences and work out potential responses to their encounters with the Holy. Finally, religious education that engages the child’s meaning-making process relies on play, engaging children in activities that help them create ways to respond to these moments, continuing their conversations with God.

Through intentional practices that sustain and nourish relational consciousness, religious educators affirm children’s encounters with God and provide them with tools to claim their faith experiences. Without this focused intentionality, faith becomes hidden, “privatized and secret, or spirituality itself becomes discredited. One pathological result of this process is that children grow up alienated or embarrassed by their own relational consciousness” (Hay 2006, 145). Using active listening, wondering, and imaginative play we are called to help children recognize God’s active presence in their lives, claim their experiences with the Holy, and share their faith narratives. Religious education must work to support children as they make meaning from and respond to God’s relational presence.

The Brain Matters: Concluding Thoughts

Neuroscience and pneumatology affirm the assertion that children make meaning from their experiences with God. Religious education brings these disciplines together, encouraging and supporting children in their meaning-making process. “Understanding how children develop, will help us know better how to relate to them and what to provide for them” (Stonehouse, 44). The brain matters as it provides information for a faithful and intentional pedagogy that creates a

space where children can grow and develop in their faith, recognizing, claiming, and living into their “I-God” relationship.

Claiming God’s active presence in the world, while affirming the brain’s ability to make meaning from it, mandates the need for a religious educational approach that supports children in this process. Children are paying attention; their synapses are firing; and they are making meaning of their experiences with their family, faith community, society, and most importantly with the Holy. This neurological and theological assertion calls faith communities to pay attention, to nurture children and their families throughout their entire lifespan. Faith communities cannot wait until children reach a specific age to talk to them about God. Neurological research and theological study assert that God is actively present in the world, working through all persons, and that children are continually reflecting on and responding to these experiences. Thus, religious educators must respond, by not only helping children recognize how God is actively present in their lives, but by nurturing, supporting, and guiding children as they make meaning from these experiences, claiming and responding to God’s faithful presence, love, and grace.

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