

# Adam as Archetype: Reconciling a Historical “Fall” and Original Sin in the Context of Evolution<sup>1</sup>

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## Abstract

Humans routinely use conceptual metaphors to understand complex concepts. On the subject of human evolution, scientists frequently employ the conceptual metaphor of childhood development/maturity as a framework for understanding. This article examines three such examples in the co-evolution of the human brain, language, and morality. Scripture likewise uses conceptual metaphors. Within Genesis 1, for instance, the conceptual metaphor of creation as a temple helps us to understand the meaning of God’s creation and the role of humanity in it as *imago Dei*. This article argues that Genesis 2–3 also employs conceptual metaphor to explain humanity’s “fall” and subsequent alienation from God. Since the action in the garden narrative begins with *ha’adam* naming the animals (language) and climaxes with the human couple’s acquisition of the “knowledge of good and evil” (morality), the conceptual metaphor employed is childhood development. Humanity did not begin with a literal first pair, but the metaphor of maturity reveals many “virtual parallels” between the garden narrative and the evolutionary narrative. The “fall” of the first humans thus mirrors the “coming of age” not just of humanity, but of every individual person. *Ha’adam* therefore functions as an archetype—the “original pattern” that all have followed. Ultimately, these points of contact suggest a time period within which a “historical fall” could have occurred—between 75,000 years ago and the “Out of Africa” departure from the Levant 10,000 years later.

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## Introduction

In attempting to wrap our brains around complex concepts, humans routinely resort to metaphorical thought. Typically, we take what is complex and compare it to something from everyday experience. The mind requires a familiar peg on which to hang its hat. Following George Lakoff and Mark Johnson's book, *Metaphors We Live By* (1980), this cognitive thought process acquired the name "conceptual metaphor." By definition, "conceptual metaphor is understanding one domain of experience (that is typically abstract) in terms of another (that is typically concrete)."<sup>2</sup> An image metaphor, such as hanging a hat on a peg, simply describes, but a conceptual metaphor forms multiple mental connections from one domain to the other. Thus, if one says, "love is a journey," a whole host of concepts related to journeys become associated with love. "Instead of mapping a single image onto another image (as in an image metaphor), a whole set of concepts from one domain is mapped onto a set of corresponding concepts from another domain; travelers map onto lovers, destinations map onto shared life goals, roads and terrain map onto life events and their circumstances, obstacles map onto relational difficulties, and the vehicle maps onto the relationship."<sup>3</sup>

Scientists often use conceptual metaphors to explain complex subjects. DNA, for example, frequently is compared to written language, which immediately calls to mind words, sentences, punctuation, information, transmission, and change (mutation).<sup>4</sup> In the late 1800s, biologist Ernst Haeckel coined the dictum "ontogeny recapitulates phylogeny" to explain his theory that the embryonic development of "higher" life forms provided a step-by-step record of the organism's evolutionary past. Haeckel's theory of recapitulation ultimately proved wrong, but the concept remains useful. Both chicken and human embryos develop gill slits and arches like their fish ancestors,<sup>5</sup> and embryos of cetaceans (whales, dolphins, porpoises) famously grow hind-limb buds that degenerate later in gestation.<sup>6</sup> On the complex subject of human evolution, the conceptual metaphor of childhood development/maturation frequently appears as a framework for

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2 Zoltán Kövecses, "Conceptual Metaphor Theory: Some Criticisms and Alternative Proposals," *Annual Review of Cognitive Linguistics* 6, no. 1 (2008): 168–84.

3 Christy Hemphill, "All in a Week's Work: Using Conceptual Metaphor Theory to Explain Figurative Meaning in Genesis 1," *Perspectives on Science & Christian Faith* 71, no. 4 (2019). Conceptual metaphors stated as propositions are conventionally rendered in small capitals.

4 A metaphor used by Francis Collins, founder of BioLogos and former head of the Human Genome Project, in the title of his book, *The Language of God*.

5 "Ontogeny and Phylogeny," *Evolution 101: Does Ontogeny Recapitulate Phylogeny?* (University of California at Berkeley): <https://evolution.berkeley.edu/evo101/IIIC6aOntogeny.shtml>. Accessed Sept 30, 2020.

6 J. G. M. Thewissen et al., "Developmental Basis for Hind-Limb Loss in Dolphins and Origin of the Cetacean Bodyplan," *Proceedings of the National Academy of Sciences* 103, no. 22 (2006): 8414–18.

understanding. This article will examine three such examples in the co-evolution of the human brain, language, and morality.

Scripture likewise employs conceptual metaphor as an explanatory mechanism, whether through Paul exhorting his auditors to put on the “armor of God” (Eph 6:11) or the Psalmist complaining that human life is grass (Ps 103:15). Many times, a single passage will contain more than one such metaphor. Within Genesis 1, for instance, the conceptual metaphors of creation as a temple<sup>7</sup> and creation as work<sup>8</sup> both figure into the interpretation of the text. Rather than a scientific treatise, Scripture provides us with metaphors to help wrap our minds around the meaning of God’s creation and humanity’s role in it as *imago Dei*. This article will argue that Genesis 2–3 also employs a conceptual metaphor to explain humanity’s “fall” and subsequent alienation from God. Since the action in the garden narrative begins with *ha’adam* naming the animals (language) and climaxes with the human couple’s acquisition of the “knowledge of good and evil” (morality), it should come as no surprise that the conceptual metaphor in question is childhood development/maturity. Humanity did not begin with a literal first pair, but given a little interpretive latitude, the metaphor of maturity reveals many “virtual parallels” between the garden narrative and the evolutionary narrative. Ultimately, this article will use these points of contact to suggest a time period within which a “historical fall” could have occurred. Following the lead of William Brown and J. Richard Middleton,<sup>9</sup> I use the term “virtual parallels” to distinguish this attempted solution from concordism *per se*. Every detail of the text does not correspond to historical realities, and one must assume the ancient author had no knowledge of contemporary science. The goal is not to allow science to dictate interpretation of the Bible. Instead, the hope is that dialogue with science will open new vistas for biblical scholars and theologians to explore.

## Co-evolution of the Human Brain, Language, and Morality

The first steps toward human language required walking on two legs. In four-legged animals, breathing and running are synchronized to one breath per stride as the thorax braces for the impact of the front legs. Weightlifters do the same

7 John H. Walton, *The Lost World of Genesis One: Ancient Cosmology and the Origins Debate* (Downers Grove: InterVarsity Press, 2010). Cf. Gordon J. Wenham, “Sanctuary Symbolism in the Garden of Eden Story,” *Proceedings of the World Congress of Jewish Studies* 9 (1986): 19–25; Gregory K. Beale, *The Temple and the Church’s Mission: A Biblical Theology of the Dwelling Place of God*, *New Studies in Biblical Theology* 17 (Downers Grove: IVP Academic, 2004); J. Richard Middleton, “The Role of Human Beings in the Cosmic Temple: The Intersection of Worldviews in Psalms 8 and 104,” *Canadian Theological Review* 2, no. 1 (2013): 44–58.

8 Hemphill, “All in a Week’s Work.”

9 William P. Brown, *The Seven Pillars of Creation: The Bible, Science, and the Ecology of Wonder* (Oxford: Oxford University Press, 2010): 14–17. Cf. J. Richard Middleton, “Reading Genesis 3 Attentive to Human Evolution,” in *Evolution and the Fall*, eds. William Cavanaugh and James K. A. Smith (Grand Rapids, MI: Eerdmans, 2017): 71.

when they hold their breath before hoisting the bar. Bipedalism not only allowed the larynx to descend, it relieved the thorax of its support function while running, which allowed our early ancestors to coordinate their breathing, running, and vocalizing. Human speech and laughter would have been impossible if *Ardipithecus ramidus* had not stood upright almost 4.5 million years ago.<sup>10</sup>

Human language involves two kinds of sharing. First, everyone must agree what words mean and how to use them, and second, we must agree that the information we share is truthful. Without meeting both conditions, human languages could not function. If someone invented his/her own private grammar, no one would understand them.<sup>11</sup> Human languages are thus “socially shared symbolic systems” that rely upon cooperation for their use.<sup>12</sup> This seems to create a problem for an evolutionary explanation of the development of language. Evolution is based on survival of the fittest—the natural selection of individuals or their genes. The evolution of language does not seem to fit that pattern, since language relies on cooperation rather than competition. Human cooperation seems even more difficult to explain when compared to the social lives of other primates. The basic building blocks of primate society are deception, manipulation, and social status/power.<sup>13</sup> If language arose under those conditions, we would expect it to facilitate more complex forms of deception and manipulation, rather than a communication system that relies on sharing and has as its basic motivation “the desire to help others by providing them with the information they need.”<sup>14</sup>

Besides language, two other unique features of human social lives rely on cooperation. The first is “intersubjectivity,” which is an umbrella term for a suite of capacities that require joint action, joint frame of reference, and empathy.<sup>15</sup> To work together in joint action, people must agree on a shared goal, which involves a bit of “mind reading” that other primates can’t duplicate. Furthermore, chimps do not hold up objects for other chimps to consider, but people will say things like, “Look at that beautiful sunset.” When we use joint frames of reference such as this to share our experiences or emotions with another person, it goes by the name of “empathy.”

10 Robert R. Provine, “Laughter as an Approach to Vocal Evolution: The Bipedal Theory,” *Psychonomic Bulletin & Review* 24, no. 1 (2017): 238–44; and C. Owen Lovejoy et al., “The Pelvis and Femur of *Ardipithecus ramidus*: The Emergence of Upright Walking,” *Science* 326.5949 (2009): 71–71e6.

11 Ludwig Wittgenstein, *Philosophical Investigations* (New York: Macmillan, 1968): §243–§271.

12 Jordan Zlatev, “The Co-evolution of Human Intersubjectivity, Morality and Language,” in *The Social Origins of Language*, eds. D. Dor, C. Knight, and D. Lewis (Oxford: Oxford University Press, 2014): 249–66.

13 Satoshi Hirata, “Chimpanzee Social Intelligence: Selfishness, Altruism, and the Mother–Infant Bond,” *Primates* 50, no. 1 (2009): 3–11.

14 Michael Tomasello, *Origins of Human Communication* (Cambridge, MA.: MIT Press, 2008): 191. Cf. Michael Tomasello et al., “Understanding and Sharing Intentions: The Origins of Cultural Cognition,” *Behavioral and Brain Sciences* 28, no. 5 (2005).

15 Zlatev, “Co-evolution.”

Morality is the second feature of human sociality that relies on cooperation. For morality to exist, people must agree what constitutes “right” or “wrong” behavior, establishing a joint frame of reference, and they must agree what to do when those standards are violated, which requires joint action. Where does language come into play? Even the earliest expressions of human morality relied on “shared values” and “joint action.” It is hard to imagine a group of any size reaching consensus on guilt or punishment without symbolic communication.<sup>16</sup>

Both language and morality also are examples of cultural knowledge passed from one generation to the next. According to Harvard sociologist Orlando Patterson, cultural knowledge can be defined as our “shared meanings about the world,”<sup>17</sup> but what does that include? One aspect is “declarative knowledge” of facts and events. Science is an example of shared factual knowledge, while history is shared knowledge of past events, but these examples hardly scratch the surface. Cultural knowledge also encompasses “procedural knowledge,” which could be called “know-how” or skill. Some things can be learned only by practical experience, not by descriptions or rules. In the classic example, there is a world of difference between riding a bicycle and being able to describe a bike and explain how to ride it. The same holds true for speaking a language, knowing good and evil, and falling in love. None of those human activities can be truly understood without practical experience, and each of them is appropriate to a different stage of development. We learn how to speak words as infants, but children don’t master the grammar of their native language until about the age of 5. Kids begin learning proper behavior as toddlers, but they are not mature enough to be held morally or legally responsible for following society’s rules until they are 10–13 years old. And if a boy that age told his mother he had fallen in love, she likely would smile and explain that what he felt was not love; he is not mature enough for that experience.

What makes something “common knowledge” in a culture? Patterson explains, “Knowledge is common when all persons in a group not only share a given form of meaningful information but knowingly know that all persons know it, ad infinitum.”<sup>18</sup> That sort of understanding requires a form of empathy called “theory of mind.” Essentially, theory of mind is the ability to make inferences about another individual’s beliefs, goals, and intentions. We project our own thoughts into other minds to conceptualize what they might be thinking or experiencing. Without theory of mind, an individual can observe behavior, but inferring a motive is beyond reach. One could observe that “Mary is looking in the drawer,” but that would be the end of it.<sup>19</sup> Call this “zero-order” theory of mind. In contrast,

16 Zlatev, “Co-evolution.”

17 Orlando Patterson, “Making Sense of Culture,” *Annual Review of Sociology* 40 (2014): 1–30.

18 Patterson, “Making Sense of Culture,” 8.

19 Harmen de Weerd, Rineke Verbrugge, and Bart Verheij, “Negotiating with Other Minds: The Role

first-order theory of mind allows an individual to supply a motive: “Mary is looking in the drawer *because she wants a fork*.”

Both young children and chimpanzees have first-order theory of mind,<sup>20</sup> but around the age of 6, human children start to acquire second-order theory of mind,<sup>21</sup> which allows them to understand a statement such as, “Alice thinks Bob knows Carol is throwing him a surprise party.” In simpler terms, “A believes B knows C intends to (blank).” Second-order theory of mind virtually requires recursive syntax and embedding (i.e., modern language). Studies of children between ages 10–11 show they have mastered second-order theory, but their performance at third level is “only slightly better than chance, and at fourth level is at chance. This contrasts with adults, who perform much better than chance at fourth level but not fifth.”<sup>22</sup> An example of third order would be “A believes B knows C thinks D intends to (blank).” Mature adults can take this even further. Consider Shakespeare’s play, “Othello.” By the end of the second act, the audience understands that Iago intends that Cassio believes that Desdemona intends that Othello believes that Cassio did not mean to disturb the peace. How many levels of intention has Shakespeare introduced? Higher orders of thinking are only possible thanks to the recursive features of modern language. Considering children’s language development, none of this should come as a surprise. Children acquire complete syntax and grammar, including recursion and embedding, around age 5, and they understand metaphoric thought by about age 10.<sup>23</sup> Higher-order theory of mind thus seems to develop in tandem with children’s language capabilities.

### *The Co-Evolution of the Brain and Language*

Who was the first speaker of words? Scientists must rely on indirect evidence, but physically, *Homo erectus* possessed the necessary attributes for speech.<sup>24</sup> Notably, *erectus* also is credited with a host of “firsts” that point in the same direction,

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of Recursive Theory of Mind in Negotiation with Incomplete Information,” *Autonomous Agents and Multi-Agent Systems* 31, no. 2 (2017): 250–87.

20 Josep Call and Michael Tomasello, “Does the Chimpanzee Have a Theory of Mind? 30 Years Later,” in *Human Nature and Self Design* (Mentis: 2011): 83–96.

21 Bethany Liddle and Daniel Nettle, “Higher-Order Theory of Mind and Social Competence in School-Age Children,” *Journal of Cultural and Evolutionary Psychology* 4, no. 3–4 (2006): 231–44.

22 Liddle and Nettle, “Higher-Order Theory of Mind.”

23 Andrew Etchell, et al., “A Systematic Literature Review of Sex Differences in Childhood Language and Brain Development,” *Neuropsychologia* 114 (2018): 19–31. Cf. N.N Nikolaenko, “Study of Metaphoric and Associative Thinking in Children of Different Age Groups and in Patients with Childhood Autism,” *Journal of Evolutionary Biochemistry and Physiology* 39, no. 1 (2003): 77–83.

24 Bruce Bower, “Evolutionary Back Story: Thoroughly Modern Spine Supported Human Ancestor,” *Science News*, vol. 169, no. 15, May 6, 2006, 275. Cf. Luigi Capasso, Elisabetta Michetti, and Ruggero D’Anastasio, “A Homo Erectus Hyoid Bone: Possible Implications for the Origin of the Human Capability for Speech,” *Collegium antropologicum* 32, no. 4 (2008): 1007–11. *H. erectus*’ hyoid is intermediate between *Australopithecus* and Neanderthal, indicating an ability to produce many, but not all, vowel sounds in the human vocal range.

and all are related to a dramatic increase in brain size. These include shortened birth intervals, delayed maturation, sexual division of labor, and, more importantly, social cooperation in the feeding and care of infants, which allowed mothers to share the “metabolic cost” of childbearing with others in the group.<sup>25</sup> Anthropologist Sarah Hrdy credits this transition to cooperative breeding with radically altering our ancestors’ interpersonal relations. Sharing the duties of parenthood laid the groundwork for later adaptations in language and intersubjectivity.<sup>26</sup>

The most intriguing evidence of *erectus*’ speech capability comes from Pleistocene trade networks. While both chimpanzees and early hominins had a similar home-range radius of 13 km, about 1 million years ago raw material transfers suddenly extended from 13 km up to 100 km, which implies cooperation and trade with neighboring groups. When chimps or other primates encounter a strange male near their territory, a confrontation is inevitable, whether a display of aggression or physical violence. The existence of trade therefore implies both lessened aggression and an improved method of communication at this stage of human evolution.<sup>27</sup>

Seeking to understand this transition, linguist and developmental psychologist Michael Tomasello spent his career studying the differences between primate and human communication, particularly how human infants acquire language. Among primates, vocalizations are inborn, but gestures are learned. Their communication is *dyadic* (one-to-one) and mainly consists of requesting specific behaviors from others. Human communication, on the other hand, is entirely learned. More significantly, it is *triadic* and referential, focused on sharing information and psychological states with others.<sup>28</sup> Such drastic change does not happen overnight.

If *erectus* spoke words, did they possess language as we know it? Definitely not. The first words developed from gestures such as pointing, which also are the first informative gestures that infants make.<sup>29</sup> Linguist Sverker Johansson argues that language evolution followed a similar path to childhood language acquisition: 1) One-word stage; 2) Two-word stage; 3) Hierarchical structure but lacking subordinate clauses and embedding; 4) Flexibility/Recursivity; 5) Fully modern grammar.<sup>30</sup> Children pass through these stages by the age of 5, but they do not

25 Mark Maslin et al., “East African Climate Pulses and Early Human Evolution,” *Quaternary Science Reviews* 101, (2014): 1–17.

26 Sarah B. Hrdy, *Mothers and Others: The Evolutionary Origins of Mutual Understanding* (Cambridge, MA: Harvard University Press, 2009).

27 Ben Marwick, “Pleistocene Exchange Networks as Evidence for the Evolution of Language,” *Cambridge Archaeological Journal* 13, no. 1 (2003): 67–81.

28 Michael Tomasello, *Constructing a Language: A Usage-based Theory of Language Acquisition* (Cambridge, MA: Harvard University Press, 2005): 8–42.

29 Cathal O’Madagain, Gregor Kachel, and Brent Strickland, “The Origin of Pointing: Evidence for the Touch Hypothesis,” *Science Advances* 5, no. 7 (2019): eaav2558.

30 Sverker Johansson, *Origins of Language: Constraints on Hypotheses Vol. 5*. (John Benjamins Publishing, 2005): 240–41.



fully grasp metaphoric thought—the basis of higher-order thinking—until they are between 8–10 years old. *Erectus* likely communicated with a combination of gestures and individual words, but protolanguage such as this lacks symbolic reference. Full symbolicity, with its emphasis on relations between symbols, is not required at the one- and two-word stages, when symbols are processed one at a time.<sup>31</sup>

Drawing upon the work of developmental psychologist Jean Piaget,<sup>32</sup> archaeologist Steven Mithen came at the questions of human language and creativity from a different direction, seeking an answer in the evolution of the mind itself.<sup>33</sup> Piaget observed that until the age of 2, children's minds are like general-purpose learning tools, but from ages 2–5 they seem to rely on specialized learning modules. Following this period of modularity, the domains begin to be integrated to allow a seamless flow of information in the mind—a situation psychologists have variously termed “representational redescription” (Karmiloff-Smith), “mapping across domains” (Carey & Spelke), “transformation of conceptual spaces” (Boden), etc. Mithen refers to the final result as “cognitive fluidity.” But regardless of terminology, integration makes creative thought possible. Where knowledge previously had been trapped in one domain, novel thoughts now could arise by forging links across domains.

According to Mithen's hypothesis, human evolution followed a similar path to childhood development. Early *Homo* had a modular mind, like other primates,<sup>34</sup> with domain-specific cognitive skills devoted to tool-making, the natural environment, and the social environment—all overlaid by a “domain-general” intelligence for problem-solving. Among chimps, for instance, social intelligence is a discrete domain. It is easy to identify when a chimp is engaged in social behavior and when it is not. Similarly, early man prior to 100,000 years ago had a modular mind, and the various modules did not “communicate” well, if at all, with one another. (The closest analogy for us is having a “single-minded” focus on a task, which partially blocks input from other areas of the brain.) For early humans, the absence of beads, pendants, and tools with social markings is evidence of an inability to integrate their technical and social intelligences. Prior to the so-called “Great Leap Forward,” humans created no specialized hunting weapons or traps

31 Marwick, “Pleistocene Exchange Networks.”

32 William Huitt and John Hummel, “Piaget's Theory of Cognitive Development,” *Educational Psychology Interactive* 3, no. 2 (2003): 1–5.

33 Steven J. Mithen, “The Early Prehistory of Human Social Behaviour: Issues of Archaeological Inference and Cognitive Evolution,” in *Evolution of Social Behaviour Patterns in Primates and Man*, eds. W. Runciman, J.M. Smith, and R.I.M. Dunbar (Oxford University Press, 1996): 145–77. Cf. Mithen, *The Prehistory of the Mind: A Search for the Origins of Art, Religion and Science* (London: Thames and Hudson, 1996).

34 Federica Amici et al., “A Modular Mind? A Test Using Individual Data from Seven Primate Species,” *PLoS ONE* 7, no. 12 (2012).



because their technical and natural intelligences were not integrated. The Acheulean and Mousterian tools that persisted for hundreds of millennia were relentless in their monotony. In contrast, the social intelligence of modern humans recognizes no boundaries. Amazonian foragers think of the forest as parent. The Inuit consider the polar bear an ancestor. Totemism and anthropomorphism indicate that the social and natural worlds are no longer discrete domains of thought. Mithen attributes the religious impulse to this “mixing up” of domains, an analysis that would please the apostle Paul. Morna Hooker, in her exegesis of Romans 1, observed that idolatry springs from “this confusion between God and the things which he has made.”<sup>35</sup> Likewise, James D. G. Dunn notes the “obviously deliberate echo of the Adam narratives” in Romans 1:18–25 and comments that “it was Adam who above all perverted his knowledge of God and sought to escape the status of creature, but who believed a lie and became a fool and thus set the pattern (Adam = man) for a humanity which worshipped the idol rather than the Creator.”<sup>36</sup>

A similar approach to Mithen’s was taken by Frederick Coolidge and Thomas Wynn, who sought to reinterpret the archaeological record by some standard other than symbolic artifacts. As they put it, “the modern mind is not . . . simply an archaic mind augmented by symbolism and language.”<sup>37</sup> In that, they are certainly correct. Their hypothesis is based on a concept in neuropsychology called “working memory,” a complex neural network primarily involving the prefrontal cortex and neocortex. The executive function of working memory is just that—the CEO of the mind (or, as another metaphor puts it, “the conductor of the brain’s orchestra.”<sup>38</sup>) Not only is this where decision-making and planning occur, the executive function takes control when anything novel is encountered.

Besides being the center of decision-making and planning, the executive function is the locus of moral thought. If the prefrontal cortex (PFC) is damaged due to injury or disease, patients often lose impulse control and the ability to connect actions with consequences; many become sociopaths. Schizophrenia and autism, which affects language and social skills, are associated with abnormal growth of the PFC, and in childhood development, the PFC is the last area of the brain to mature, continuing to develop through adolescence and early adulthood.<sup>39</sup>

35 Morna (M. D.) Hooker, “Adam in Romans I,” *New Testament Studies* 300 (1959–60): 301.

36 James D.G. Dunn, *Romans 1–8*, Word Biblical Commentary 38A (Nashville: Thomas Nelson, 1988): 53. Although this theme cries out for exploration, it would exceed the bounds of this essay.

37 Thomas Wynn and Frederick L. Coolidge, “The Implications of the Working Memory Model for the Evolution of Modern Cognition,” *International Journal of Evolutionary Biology* (2011): 1–12.

38 Elkhonon Goldberg, *The New Executive Brain: Frontal Lobes in a Complex World*, (Oxford: Oxford University Press, 2009).

39 Adele Diamond, “Normal Development of Prefrontal Cortex from Birth to Young Adulthood: Cognitive Functions, Anatomy, and Biochemistry,” *Principles of Frontal Lobe Function* (2002): 466–503.

Similarly, once a child has learned the basics of syntax by age 5, the region of the brain known as “Broca’s area,” which is crucial for language, begins to grow faster than neighboring regions and continues to do so until age 11. Finally, in comparison with existing primates, human brain evolution is characterized by “distinct changes in the local circuitry and interconnectivity of the PFC.” These include increased gyral white matter (better connectivity), a larger BA 10 (executive functions), larger and left asymmetrical BA 44–45 (language functions), and greater spacing between layer III neurons (faster processing).<sup>40</sup> Thus, evolutionary history, brain pathology, and childhood development all point to the PFC and language as key to modern human behavior. Although working memory and executive function vary among populations, both are highly heritable and appear to be under strong genetic control, which led Coolidge and Wynn to propose that an unknown mutation enhanced our working memory to allow fully symbolic language, a change they hypothesize occurred between 100,000 and 50,000 years ago, when cognitive modernity fully flowered.<sup>41</sup>

The improvement in working memory arrived with the final piece of the biological puzzle—our globular braincase.<sup>42</sup> One distinguishing feature of Neanderthal is that it could be described as a large-brained/large-faced species. *H. sapiens*, by comparison, has a relatively small face, a feature that recently came to the fore in a fossilized skull from Jebel Irhoud, Morocco.<sup>43</sup> Dated around 300,000 years ago, the skull initially puzzled scientists, who were unsure how to classify it. Eventually, they decided upon *H. sapiens* thanks to its small face, which clinched the identification. The complicating fact was that the skull was elongated, like Neanderthal and every previous hominin, while that of modern humans is shaped like a globe. Both Neanderthal and *sapiens* infants are born with nearly identical elongated braincases, but in the first year of life, the rapid growth of the modern human infant’s cerebellum, parietal lobe, and frontal pole reshapes the skull into our distinctive pattern.<sup>44</sup>

A recent study analyzed endocranial casts of 20 *sapiens* fossils from different

40 Kate Tefter and Katerina Semendeferi, “Human Prefrontal Cortex: Evolution, Development, and Pathology,” *Progress in Brain Research* 195, (2012): 191–218.

41 Thomas Wynn and Frederick L. Coolidge, *The Rise of Homo Sapiens: The Evolution of Human Thinking* (Hoboken, NJ: Wiley-Blackwell, 2009). Cf. T. Wynn and F.L. Coolidge, “The Effect of Enhanced Working Memory on Language,” *Journal of Human Evolution* 50, no. 2 (2006): 230–31; M. Martin-Loeches, “On the Uniqueness of Humanity: Is Language Working Memory the Final Piece that Made Us Human?” *Journal of Human Evolution* 50, no. 2 (2006): 226–29.

42 Cedric Boeckx and Antonio Benítez-Burraco, “The Shape of the Human Language-Ready Brain,” *Frontiers in Psychology* 5, no. 282 (2014).

43 Jean-Jacques Hublin et al., “New Fossils from Jebel Irhoud, Morocco, and the Pan-African Origin of *Homo Sapiens*,” *Nature* 546, no. 7657 (2017).

44 Philipp Gunz et al., “A Uniquely Modern Human Pattern of Endocranial Development: Insights from a New Cranial Reconstruction of the Neanderthal Newborn from Mezmaiskaya,” *Journal of Human Evolution* 62, no. 2 (2012): 300–13.

time periods. Although brain volume of the Jebel Irhoud fossil fell within the range of present-day humans, “brain shape evolved gradually within the *H. sapiens* lineage, reaching present-day human variation between about 100,000 and 35,000 years ago. This process . . . paralleled the emergence of behavioral modernity as seen from the archeological record.”<sup>45</sup> Computational analysis of the brains of modern *H. sapiens* and Neanderthal found that they had smaller cerebellar hemispheres than us. Although both species have similar total brain volumes, a globular brain confers distinct advantages:

Larger cerebellar hemispheres were related to higher cognitive and social functions including executive functions, language processing and episodic and working memory capacity. Based on archaeological records, Wynn and Coolidge suggested that NT (Neanderthal) had a smaller capacity of working memory, which is also related to the capacity for cognitive fluidity proposed by Mithen. Moreover, such differences in the capacity for cognitive fluidity were hypothesized to mainly originate from language processing ability. Thus, the differences in neuroanatomical organization of the cerebellum may have resulted in a critical difference in cognitive and social ability between the two species.<sup>46</sup>

The changes in shape and neural connectivity associated with globularity resulted in a “language-ready brain” by creating “the ability to form complex, cross-modal thoughts.”<sup>47</sup> Recalling a mental image of a woman or a fish doesn’t require integration. Thinking of a mermaid does.

### *From Innocent Animal to Guilty Human*

Jane Goodall famously described chimpanzee society as “order without law.”<sup>48</sup> She said this after documenting several brutal incidents of infanticide and cannibalism. There were no consequences for the perpetrators, since chimps have no conceptual category for what they had witnessed. Ultimately, they ignored what happened and returned to their business.

Without fully symbolic language, moral knowledge is impossible. Animals

45 Simon Neubauer, Jean-Jacques Hublin, and Philipp Gunz, “The Evolution of Modern Human Brain Shape,” *Science Advances* 4, no. 1 (2018).

46 Takanori Kochiyama et al., “Reconstructing the Neanderthal Brain Using Computational Anatomy,” *Scientific Reports* 8, no. 1 (2018): 1–9. Lesser language and social abilities for Neanderthal are supported by the fact that their exchange networks never extended beyond 75 km, which is less than even late *H. erectus*. (Marwick, “Pleistocene Exchange Networks.”) In the social realm, I would speculate that Neanderthal also were more aggressive than *sapiens*. Perhaps they resembled the chimpanzee and we are more like the bonobo?

47 Boeckx and Benitez-Burraco, “The Language-Ready Brain.”

48 Jane Goodall, “Order Without Law” in *Law, Biology and Culture: The Evolution of Law*, eds. M. Gruter and P. Bohannon (San Diego: Ross-Erikson Publishers, 1982): 50–62.

cannot conceive of abstract ideas such as good or evil. Because they lack language, they are morally neutral. Among human beings, every culture recognizes an age of maturity when children are initiated into adult society and held responsible for their actions. Younger children, being immature, are exempt. Societies do not jail toddlers when they break the law; only a mature person can be morally culpable. Thus, there are three categories of moral culpability: Guilty Adult, Immature Child, and Innocent Animal.

How did humanity transition from innocent animal to guilty adult? What might that evolutionary history have looked like?

The first indisputable signs of symbolic reference appear at Blombos cave in South Africa between 130–100,000 years ago in the form of ochre for body decoration and shell beads worn as jewelry and placed in graves.<sup>49</sup> Concurrently, trade networks, which had extended no more than 100 km for almost a million years, suddenly expand to 300 km.<sup>50</sup> Judging by these indications, the transition from protolanguage to language has occurred. A shell worn around the neck now could represent something—social status or tribal identity.

Speculating on their interior lives, the thinking of these early humans probably resembled modern children between the ages of 5–7. They have acquired the basics of syntax, but they do not grasp metaphoric thought. They experience the same internal, emotional lives as adults, but they cannot analyze their feelings or categorize behaviors into a “moral code.” Mature human morality is rooted in our capacities to symbolize and generalize to an abstract category. Cognitive neuroscientist Peter Tse explains, “The birth of symbolic thought gave rise to the possibility of true morality and immorality, of good and evil. Once acts became symbolized, they could now stand for, and be instances of, abstract classes of action such as good, evil, right, or wrong.”<sup>51</sup>

While humanity had acquired modern grammar 100,000 years ago, there remained another step toward fully symbolic, modern language. There’s a vast gulf between a symbolic representation of something concrete (capable of being perceived by the senses) and an abstract concept, which has no material substance. Cognitive Linguistics, the linguistic theory based on Embodied Cognition, proposes that words are grounded in bodily perception, emotion, and action, but

49 Derek Hodgson, “Decoding the Blombos Engravings, Shell Beads and Diepkloof Ostrich Eggshell Patterns,” *Cambridge Archaeological Journal* 24, no. 1 (2014): 57–69; Francesco d’Errico et al., “*Nassarius kraussianus* Shell Beads from Blombos Cave: Evidence for Symbolic Behaviour in the Middle Stone Age,” *Journal of Human Evolution* 48, no. 1 (2005): 3–24.

50 Marwick, “Pleistocene Exchange Networks.”

51 Peter Ulric Tse, “Symbolic Thought and the Evolution of Human Morality,” in *Moral Psychology*, ed. W. Sinnott-Armstrong (Cambridge, MA: MIT Press, 2008): 269–97.

abstract nouns present a difficult problem for the theory.<sup>52</sup> How did they arise? Perhaps Helen Keller can explain:

Miss Sullivan put her arm gently round me and spelled into my hand, “I love Helen.”

“What is love?” I asked.

She drew me closer to her and said, “It is here,” pointing to my heart, whose beats I was conscious of for the first time. Her words puzzled me very much because I did not then understand anything unless I touched it.

I smelt the violets in her hand and asked, half in words, half in signs, a question which meant, “Is love the sweetness of flowers?”

“No,” said my teacher. Again, I thought. The warm sun was shining on us.

“Is this not love?” I asked, pointing in the direction from which the heat came, “Is this not love?”

It seemed to me that there could be nothing more beautiful than the sun, whose warmth makes all things grow. But Miss Sullivan shook her head, and I was greatly puzzled and disappointed. I thought it strange that my teacher could not show me love.

A day or two afterward I was stringing beads of different sizes in symmetrical groups—two large beads, three small ones, and so on. I had made many mistakes, and Miss Sullivan had pointed them out again and again with gentle patience. Finally, I noticed a very obvious error in the sequence, and for an instant I concentrated my attention on the lesson and tried to think how I should have arranged the beads. Miss Sullivan touched my forehead and spelled with decided emphasis, “Think.”

In a flash, I knew that the word was the name of the process that was going on in my head. This was my first conscious perception of an abstract idea.

For a long time, I was still—I was not thinking of the beads in my lap, but trying to find a meaning for “love” in the light of this new idea. The sun had been under a cloud all day, and there had been brief showers; but suddenly the sun broke forth in all its southern splendor.

Again, I asked my teacher, “Is this not love?”

“Love is something like the clouds that were in the sky before the

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52 Anna M. Borghi et al., “The Challenge of Abstract Concepts,” *Psychological Bulletin* 143, no. 3 (2017).

sun came out,” she replied. Then in simpler words than these, which at that time I could not have understood, she explained: “You cannot touch the clouds, you know; but you feel the rain and know how glad the flowers and the thirsty earth are to have it after a hot day. You cannot touch love, either; but you feel the sweetness that it pours into everything. Without love you would not be happy or want to play.”

The beautiful truth burst upon my mind—I felt that there were invisible lines stretched between my spirit and the spirits of others.<sup>53</sup>

In a culture without a single Miss Sullivan, how long would a few thousand Helen Kellers have taken to express the abstract concept of “love”—to say nothing of fairness, justice, mercy, or cruelty? Like Helen Keller, early humanity’s symbolic language remained rooted in the concrete, material world because they had not yet developed a lexicon of abstract words. Lacking that vocabulary, they might be able to sense what was right and wrong, but they could not articulate reasons for those moral judgments. Research in childhood psychology has documented the same phenomena.<sup>54</sup> Routinely, we judge a situation by our “gut reaction” to it, and only *afterward* do we apply moral reasoning to justify those initial feelings.<sup>55</sup> Such instinctive, common reactions are the forerunners of abstract moral concepts. Early humans had the same gut reactions that we do; they simply lacked the vocabulary to express their moral emotions or reason abstractly about them. Humanity was like a young child.

How long did this situation persist? Computer simulations of linguistic evolution suggest the right conditions to generate instability and novelty are small populations under stress.<sup>56</sup> The same holds true in biology, where novelties are far more likely to become fixed in small populations.<sup>57</sup> Such a situation describes the *H. sapiens* population around 75,000 years ago.<sup>58</sup> Following the explosion of the

53 Helen Keller, *The Story of My Life* (1903, Reprint ed. London: Global Classics, 2020): 20–21.

54 Karen Pine and Dave Messer, “The Development of Representations as Children Learn about Balancing,” *British Journal of Developmental Psychology* 21, no. 2 (2003): 285–301. Cf. Daniele Moyal-Sharrock, “Coming to Language: Wittgenstein’s Social ‘Theory’ of Language Acquisition” in *Essays on the Philosophy of Wittgenstein*, ed. Volker Munz (Berlin, Boston: De Gruyter, 2010).

55 Jonathan Haidt, “The Emotional Dog and its Rational Tail: A Social Intuitionist Approach to Moral Judgment,” *Psychological Review* 108, no. 4 (2001): 814–34. Cf. Haidt, “The Moral Emotions” in *Handbook of Affective Sciences*, eds. R. J. Davidson, K. R. Scherer, & H. H. Goldsmith, (Oxford: Oxford University Press, 2003): 852–70.

56 Marwick, “Pleistocene Exchange Networks.” Cf. Simon Kirby, “Syntax Without Natural Selection: How Compositionality Emerges from Vocabulary in a Population of Learners” in *The Evolutionary Emergence of Language*, eds. Chris Knight et al., (Cambridge: Cambridge University Press, 2000): 303–23.

57 Ian Tattersall, “What Happened in the Origin of Human Consciousness?” *The Anatomical Record* 276B, no. 1 (2004): 19–26.

58 Lucie Gattepaille, Torsten Gunther, Mattias Jakobsson, “Inferring Past Effective Population Size from Distributions of Coalescent Times,” *Genetics* 204, no. 3 (2016): 1191–1206. Revising the mutation rate pushed previous estimates of the human population bottleneck back from ~63 ka

Toba super-volcano, South Africa gradually became more arid, and a shrinking population of humans gravitated toward East Africa in search of dwindling food supplies.<sup>59</sup> Additionally, the process of globularity began around 100,000 years ago and extended no later than 35,000 years ago, which places the mid-point around 67,500 years ago. Since modern language and moral codes are universal throughout human cultures, these must have been present before humanity departed the Levant about that time on its worldwide journey of expansion.<sup>60</sup> On the best evidence, therefore, sometime between 75–65,000 years ago, humanity developed the lexicon of abstract ideas, and with it, the capacity for fully mature human morality.

On top of everything else, the same process granted humans the ability to share our thoughts and emotions fully with another person—a type of communication we learned to call “love.” Intention-reading, which Tomasello credits with providing the evolutionary motivation to speak, involves not just a shared frame of reference (“Look at that beautiful sunset . . .”), but an inborn instinct to share our psychological state with others.<sup>61</sup> A performative such as “I apologize” seeks such a shared state. We are not satisfied by the utterance of the words unless we believe the speaker truly *feels* sorry.

The final connection between language and morality is the way humans learn. The philosopher Ludwig Wittgenstein famously compared language to a family of games that we learn by observing as they are played and inferring the rules. In coining the metaphor of the language-game, Wittgenstein “meant to bring into prominence the fact that the ‘speaking’ of language is part of an activity, or form of life.”<sup>62</sup> In other words, our language is embedded in our manner of living, and we learn a “form of life” in the same way and at the same time that we learn to communicate—by learning to make value judgments about the “rightness” of a thing. While children are discovering what makes a particular expression “right” or “wrong” for a given situation, they simultaneously are learning “right” and “wrong” behaviors for their community. Both processes are contemporaneous and virtually identical. Subsequent research has borne out Wittgenstein’s insight. As

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to ~75 ka. Alwyn Scally and Richard Durbin, “Revising the Human Mutation Rate: Implications for Understanding Human Evolution,” *Nature Reviews Genetics* 13 (2012): 745–53. Cf. W. Amos and J. I. Hoffman, “Evidence That Two Main Bottleneck Events Shaped Modern Human Genetic Diversity,” *Proceedings of the Royal Society B: Biological Sciences* 277, no. 1678 (2009): 131–37.

59 Saioa López, Lucy Van Dorp, and Garrett Hellenthal, “Human Dispersal Out of Africa: A Lasting Debate,” *Evolutionary Bioinformatics* 11, no. S2 (2015). The effect of Toba on climate is debated, but either way, the *H. sapiens* population around 75 kya was likely no more than 20–50,000 people living in small groups dispersed across southern and eastern Africa.

60 Donald Brown, “Human Universals, Human Nature & Human Culture,” *Daedalus* 133, no. 4 (Fall 2004): 47–54.

61 Michael Tomasello et al, “Understanding and Sharing Intentions: The Origins of Cultural Cognition,” *Behavioral and Brain Sciences* 28, no. 5 (2005).

62 Wittgenstein, *Philosophical Investigations*, §23.



moral philosopher and psychologist Susan Dwyer said, “Moral competence develops through a process analogous to language acquisition. Any systematic explanation of human moral competence must be grounded in a clear sense of the capacities that children possess at various points in development.”<sup>63</sup>

Since Aristotle first stated the obvious, everyone has recognized that humans primarily learn by *mimesis* (imitation)—a process that also goes by the name of “social learning.” In his research on childhood language acquisition, Tomasello noted that “1-year-old infants use their newly emerging skills of intention understanding not only to predict what others will do, but also to learn from them how to do things conventionally in their culture.”<sup>64</sup> The human capacity for social learning is what allows children to absorb such a vast amount of information in such a short time, and this same ability forms the basis of human culture. From cradle to grave, human beings imitate the speech and behavior—both good and evil—of the people around them and model it to the next generation as a form of life. On the grand scale of history, this becomes human language, traditions, and culture—all accomplished by the process of “enculturation,” yet another name for *mimesis*.

## Human Origins in Genesis 1–3

### *Imago Dei*

In Genesis 1, the conceptual metaphor of temple construction provides a framework to communicate God’s creation of the heavens and the earth.<sup>65</sup> The climax arrives in Gen 1:26–28, which begins, “Let us create *adam* in our image . . . .” This is a statement of purpose, of *telos*. Coming at the end of God’s creative activities, the creation of humanity in his image was the goal of his labor. There *is* something special, something unique about humanity in the biblical perspective.

After Gen 9:6, the image of God disappears from the Hebrew Bible before being resurrected in the New Testament.<sup>66</sup> This paucity of information has left interpreters divided on the meaning of the *imago Dei*.<sup>67</sup> The predominant view of the church for many centuries saw it as a structural aspect of the human being, including concepts such as “reason,” the “rational soul,” or “consciousness.”<sup>68</sup> In the 20<sup>th</sup> century, systematic theologians generally favored the Barthian “relational” model, as exemplified by Reformed theologian Anthony Hoekema: “God has placed man into a

63 Susan Dwyer, Bryce Huebner, and Marc D. Hauser, “The Linguistic Analogy: Motivations, Results, and Speculations,” *Topics in Cognitive Science* 2, no. 3 (2009): 486–510.

64 Tomasello et al, “Understanding and Sharing Intentions.”

65 Walton, *The Lost World of Genesis One*; Wenham, “Sanctuary Symbolism”; Beale, *The Temple and the Church’s Mission*; Middleton, “Human Beings in the Cosmic Temple.”

66 Forgive the pun, but the reference is to passages such as Col 1:15; Heb 1:3; 2 Cor 4:4; etc.

67 J. Richard Middleton, “Image of God” in *The Oxford Encyclopedia of the Bible and Theology*, vol. 2, ed. Samuel E. Ballentine et al. (Oxford and New York: Oxford University Press, 2015): 516–23.

68 Aquinas *Summa Theologica* 1q93a2. The Catechism of the Catholic church still describes *imago Dei* in such terms.

threefold relationship: between man and God, between man and his fellowmen, and between man and nature.”<sup>69</sup> The current consensus among biblical scholars understands the image as a “functional” calling or vocation to represent God in his earthly temple, “granted authorized power to share in God’s rule or administration of the earth’s resources and creatures.”<sup>70</sup> By its nature, a vocation implies a period of training and apprenticeship; toddlers do not suddenly begin to practice carpentry, for instance. The same principle that applies to the individual also applies to the human race. Therefore, if God intended humanity to serve as his embodied image on Earth, we could not perform that task until we acquired the necessary knowledge and experience. At the least, such representation should reflect the Lord’s goodness, justice, and mercy, so we may confidently infer that humanity could not perform its God-ordained task without mature moral knowledge.

### *Ha’adam as Archetype*

An overview of Genesis 2–3 begins with the generic first humans: “the man” and “the woman.” Contrary to popular opinion, “Adam” does not appear as a proper name until Gen 4:25 at the earliest.<sup>71</sup> Why would the author use a *de facto* title, *ha’adam*, in the garden narrative rather than the man’s presumed name, Adam? The answer is found in the story arc. Chapter 2 relates the man and the woman’s creation, naked and unashamed, and by the end of chapter 3, they have acquired the knowledge of good and evil and been barred from the garden of God’s presence. Symbolically, the child has left home and become an adult—complete with spouse, offspring, toil, tears, sweat, pain, and, of course, guilt. Every human being has taken that journey. We immediately recognize ourselves in “the man” and “the woman.” (As early as the 2<sup>nd</sup> century, the church father Irenaeus interpreted the first couple as children in the story.<sup>72</sup>) The genius of Genesis 2–3 is that the “fall” of the first humans mirrors the “coming of age” not just of humanity, but of every individual person. *Ha’adam* thus functions as an archetype—the “original pattern” that all have followed.<sup>73</sup>

69 Anthony Hoekema, *Created in God’s Image* (Grand Rapids: Eerdmans): 75. Cf. Karl Barth, *Church Dogmatics* (London: T&T Clark, 2004): III/1, 193.

70 J. Richard Middleton, *The Liberating Image: The Imago Dei in Genesis 1* (Grand Rapids: Brazos Press, 2005), 27. Cf. Bruce K. Waltke, *Genesis: A Commentary* (Grand Rapids: Zondervan Academic, 2016): 65–66.

71 Richard S. Hess, “Genesis 1–2 and Recent Studies of Ancient Texts,” *Science and Christian Belief* 7, no. 2 (1995): 147.

72 *Against Heresies* 3.22.4, 3.23.5, 4.38.1–2 (SC 100:942–50); *The Demonstration of Apostolic Preaching* 12, 14.

73 The change from *ha’adam* to the proper name Adam (without the definite article) in Genesis 4 does not in itself indicate that “the man” has reached maturity. That change in perspective is a function of the narrative shifting focus from the universal pattern to the specific outworking of *ha’adam*’s sinful pattern in his descendants. The story arc of maturity has its climax and resolution in Genesis 3.

John Walton reaches a similar conclusion in *The Lost World of Adam and Eve*, but he defines an archetype as “a representative of a group in whom all others in the group are embodied.”<sup>74</sup> However, Walton’s definition of “archetype” seems to owe more to covenant theology’s doctrine of “Federal Headship” than it does to literary analysis. The longstanding definition of a literary archetype is a character or situation that represents a universal pattern in human experience. Thus, the character of *ha’adam* is not an archetype because God chose a particular individual named Adam to represent a group of people, even if that group is all of humanity. Rather, “the man” serves as an archetype because his experience personifies the *universal human experience* of the loss of innocence. The man and woman simultaneously represent the collective (early humanity) and individual (every human) journey from childhood innocence to guilty adulthood.

### *Opening the Mouth, Hearing a Command, Naming the Animals*

In Gen 2:7 God creates *ha’adam* from *ha’adamah* (“the ground”) and breathes “the breath of life” into him, and the man becomes *nepeš ḥayyāh*, a “living soul.” The majority of Christians believe human beings have a dual nature—body and soul. Traditional interpretations of Gen 2:7 thus usually view the passage as God breathing a soul into the first man.<sup>75</sup> But the phrases “breath of life” and “living soul” are applied to both animals and humanity in the Hebrew Bible. Life is manifested in the breath, which comes from the Spirit of God.<sup>76</sup> This is true of both people and animals, since both come from the ground (Gen 1:24, 2:7) and both owe their lives to the spirit/breath of God (Gen 7:21–22). On this reading, Gen 2:7 does not teach that “the man” was “ensouled” or “enlightened” at his creation. It simply teaches that humanity, like the animals, was made from the earth and given life (breath) by God, our common Creator. In short, the man was not *given* an immortal soul; he *became* a living soul.<sup>77</sup>

A more intriguing interpretation draws upon the *mīs pī/pīt pī* (“washing of the mouth,” “opening of the mouth”) religious rituals of Mesopotamia, connecting the *imago Dei* in Gen 1:26–28 to the imagery of God breathing life into the man.<sup>78</sup> Before an idol/image of a god was placed in its temple, priests would perform a

74 John H. Walton, *The Lost World of Adam and Eve: Genesis 2–3 and the Human Origins Debate* (Downers Grove: InterVarsity Press, 2015): 240.

75 Commenting on 2:7, John Calvin said, “Three gradations, indeed, are to be noted in the creation of man; that his dead body was formed out of the dust of the earth; that it was endued with a soul, whence it should receive vital motion; and that on this soul God engraved his own image, to which immortality is annexed.” <https://ccel.org/ccel/calvin/calcom01/calcom01.viii.i.html>.

76 Although *nishmah* is used only for humans in Genesis, *ruah* (spirit/breath) is applied to both humans and animals elsewhere. Besides Gen 6:10 and 17, see Ps 104:29–30.

77 Mathews, *Genesis 1–11:26*, 196–99.

78 Catherine L. McDowell, *The Image of God in the Garden of Eden: The Creation of Humankind in Genesis 2:5–3:24 in Light of the mīs pī pīt pī and wpt-r Rituals of Mesopotamia and Ancient Egypt* (University Park, PA: Eisenbrauns, 2015).

ceremony in a riverside garden to “open” its mouth, awakening the statue’s senses so that it could taste the sacrifices, smell the incense, hear the music, and give directions to the priests in the temple. The parallels are obvious, but the man in Gen 2:7 is vivified by the breath of life. This recalls the prophetic parody of idolatry: Their images are a fraud because “they have no breath in them” (Jer 10:14; 51:17; Hab 2:19; see also Ps 135:17). In contrast, the “idol” that YHWH God fashions from the ground and places in his garden/temple is a living, breathing image. Rather than the bestowal of a soul, “the text narrates God’s consecration of humanity to bear the divine image.”<sup>79</sup>

The question then arises: Does consecration to a task or, to put it another way, calling to a vocation require that a person is prepared to fulfill that vocation immediately? Assume God calls one 16-year-old to the ministry and another to be a physician. Are either of them ready to perform those tasks as soon as they receive God’s call? Obviously not. Both still face years of education and training before they gain the necessary knowledge and experience to take up their God-given vocations. And anywhere along the way, something might happen to derail their progress and prevent them from reaching their goals.

As a matter of fact, everyone is born/created in the image of God, but no one has achieved the goal of *imago Dei*. A few, unfortunately, are born with disabilities or suffer injuries/disease that prevent them from reaching full maturity as morally culpable persons. The rest of us, like our forebears in Eden, choose evil and fail to represent the moral goodness of our Creator. Only one person in all human history—the Son of God—lived up to the divine call.

God’s consecration of *ha’adam* to the vocation of *imago Dei* did not equal immediate readiness to fulfill it, just as an infant born in God’s image is not immediately prepared for that task. By the same token, God’s command to *ha’adam* not to eat from the Tree of Knowledge (Gen 2:16–17) does not equate to moral maturity. If *ha’adam* is truly an archetype whose experience is universally applicable, then his experience should parallel the experience of every human. All children are given commands—respect your parents, do not hit, do not steal, do not lie—but that fact alone does not mean they are ethically mature. Every parent knows it is not enough to tell a child a rule. Children learn how to follow all rules, not just moral rules, by trial and error, which involves a long series of violations and corrections/consequences. Like learning language, the process resembles training more than anything else.<sup>80</sup>

Upon his creation, the man’s first act is “opening the mouth” to name the

79 J. Richard Middleton, “From Primal Harmony to a Broken World,” in *Earnest: Interdisciplinary Work Inspired by the Life and Teachings of B. T. Roberts*, eds. Andrew C. Koehl and David Basinger (Eugene, OR: Pickwick, 2017): 150.

80 Wittgenstein, *Philosophical Investigations*, §5. For his thoughts on obeying a rule see §’s 199, 202, 219, 222, 227, 235, 240.

animals (Gen 2:19–20). While the main point obviously is not to provide an explanation for the origin of language, the action is undeniably linguistic.<sup>81</sup> Interpreters often take the passage as another instance of *ha'adam* being portrayed as an adult, but as previously noted, the first stage of language usage—both in evolution and childhood development—is the single-word stage, which invariably begins with names (Mama, Dada, bottle, etc.). A toddler can give names to her collection of stuffed animals, but no one would interpret that act as an indication of rational or moral maturity.

More telling is the fact that the chapter ends with the man and woman “naked and not ashamed.” This seemingly off-hand observation conveys the same message to ancient and modern reader alike, which is the childlike state of the first humans. Again, if *ha'adam* is an archetype, then his experience reflects the experience of every human, and very young children are the only members of society who universally fit the bill for “naked and not ashamed.” In summary, nothing in Genesis 2 requires the interpreter to regard *ha'adam* as a fully-formed adult, whether the vocation of *imago Dei*, the receiving of a command, or the giving of names.

### *The Tree of Knowledge*

The “fall” occurs when the man and woman eat the fruit of the tree and become “like God,” knowing good and evil. Interpreters fall into four main categories on the question of what the tree represents:

- The tree confers moral discrimination.
- “Good and Evil” is a merism for knowledge only true of deity.
- The tree bestows divine wisdom.
- The tree awakens sexual awareness.<sup>82</sup>

Although all four of these views associate the tree with increased maturity, interpreting the fall as sexual awareness ignores the most obvious aspect of the tree, its name, and the most obvious consequence of eating its fruit, shame. Simply on the level of experience, “knowledge of good and evil” and “shame” immediately call to mind morality, not sexuality. Sexual knowledge is neither good nor evil. Although the reference to marriage in Gen. 2:24 is an interpolation, it serves to highlight another difficulty with the sexual awareness interpretation. If sex were in view, the order of events in the text would reverse the universal experience of humanity. While adults may be ashamed of being naked before strangers, the same

81 I must set aside naming as an act of dominion. The question is complex, controversial, and ultimately tangential to the purpose of this paper.

82 Kenneth A. Mathews, *Genesis 1–11:26*, New American Commentary 1A (Nashville, TN: Broadman & Holman, 1996): 203–206.

does not (ideally) apply to couples. Sexual intimacy should not cause a husband or wife to be ashamed of being naked in front of the other. If anything, the opposite should be true. So the act of covering themselves cannot be the result of embarrassment at having their nakedness before one another exposed.<sup>83</sup> Rather, covering their nakedness symbolically illustrates an awareness of moral guilt—the shame of realizing that one’s misdeeds have been exposed for all to see, including God.

The second and third options both emphasize the fact that the knowledge Adam and Eve obtain is, by inference from Gen 3:22, a form of divine wisdom usually attributed to kings, priests, or God alone. One such example would be the judicial wisdom of David (2 Sam 14:17, 20). The merism interpretation draws upon the wisdom literature of the Hebrew Bible for its understanding of the tree as mature, practical wisdom for righteous life. A common problem with both interpretations is that prior to humanity’s acquisition of moral knowledge, *of course* it was the sole province of deity. Like children, early humanity did not yet possess it, and animals never will. While both “wisdom” interpretations are reasonable, “knowing right from wrong” must precede those higher forms of moral knowledge, both for humanity and for the individual. Whether one considers the tree to represent the judicial wisdom of David or the godly wisdom of Proverbs, both categories subsume the narrower concept of moral discrimination, which is foundational for mature, wise judgment. Societies begin to hold children morally and legally responsible for their actions between the ages of 10–13, but adolescents do not acquire practical experience or mature wisdom until much later. In fact, the prefrontal cortex—the center of decision-making—continues to develop until the age of 25.<sup>84</sup> Prior to full maturity and adult “wisdom,” the adolescent brain is characterized by “a heightened responsiveness to incentives while impulse control is still relatively immature.”<sup>85</sup> Because of their still-developing brains, teenagers impulsively grasp for immediate rewards and fail to anticipate long-term consequences, and the adolescent always wants to be independent long before he/she is ready. These observations are equally true of the humans in the garden. The man and woman are archetypes of universal moral experience; like teenagers, they show short-sighted, poor judgment in their premature grasp for independence.

83 Taking the view that Adam and Eve were married in 2:24, Augustine speculated that Adam and Eve did not experience lust before the “fall.” He assumes that the “nuptial acts of the primeval marriage were quietly discharged, undisturbed by lustful passion.” After they sinned, Adam and Eve covered themselves because an “indecent motion” arose from their bodies, which would not have been the case if they had not sinned. Frankly, Augustine’s speculation on this point is prudish and biologically absurd. Cf. David F. Kelly, “Sexuality and Concupiscence in Augustine,” *The Annual of the Society of Christian Ethics* 3 (1983): 81–116.

84 Teffer and Semendeferi, “Human Prefrontal Cortex.” Along those lines, Irenaeus reasoned that Adam and Eve were easily deceived by the devil because of their inexperience and immaturity.

85 Betty Jo Casey, Sarah Getz, and Adriana Galvan, “The Adolescent Brain,” *Developmental Review* 28, no. 1 (2008): 62–77.

In the end, the obvious interpretation that the tree symbolizes moral discernment seems best. Both Deut 1:39 and Isa 7:15–16 explicitly state that a child lacks the “knowledge of good and evil,” and Isaiah especially emphasizes that good judgment involves knowing “to reject evil and choose what is good.”<sup>86</sup> The fear of the Lord is to hate evil (Prov 8:13), but that is the just the *beginning* of wisdom (Prov 9:10). Like children, the first humans lacked moral discernment—the knowledge of good and evil.

### *The Archetypal Sin and Fall*

The introduction of the serpent—the craftiest of YHWH God’s creatures—abruptly interrupts the idyllic existence of the man and woman in the garden. The temptation the snake represents is threefold: First, it questions the “rightness” of the command; second, it denies the consequences of disobedience; third, it questions the motives of the lawgiver. As the man and woman are archetypes, so is their temptation and fall.

In his 1932 classic, *The Moral Development of the Child*, Jean Piaget studied children of various ages playing games and concluded that the younger ones regarded rules “as sacred and untouchable, emanating from adults and lasting forever. Every suggested alteration strikes the child as a transgression.”<sup>87</sup> This matches quite well the attitude of many interpreters toward the command not to eat from the Tree of Knowledge. The first humans should have accepted it without question, obeyed it and, presumably, lived forever in paradise. But is unquestioned acceptance of the rule truly a mature moral choice? That condition belongs to the state of childhood.

Updating Piaget’s work, developmental psychologist William Kay observed, “A young child is clearly controlled by authoritarian considerations, while an adolescent is capable of applying personal moral principles. The two moralities are not only clearly distinct but can be located one at the beginning and the other at the end of a process of moral maturation.”<sup>88</sup> In what could be called the first instance of peer pressure, the serpent introduced doubt from the outside, and the

86 The Deuteronomy text is indisputably related to childhood. Craigie calls it the “age of discernment,” and McConville characterizes it as “not morally responsible” and references Isa 7:15. On the latter, I agree with Motyer, who notes the range of possible meanings of “good and evil” (bad/good food, bad/good fortune, moral evil/good) and concludes the time factor and meaning are vague by design. “Within three years, Damascus had fallen to Assyria, and thirteen years later Samaria was taken.” Peter C. Craigie, *The Book of Deuteronomy*, New International Commentary on the Old Testament (Grand Rapids: Eerdmans, 1976): 105; J. Gordon McConville, *Deuteronomy*, Apollos Old Testament Commentary 5 (Downers Grove: InterVarsity Press, 2002): 72; J. Alec Motyer, *The Prophecy of Isaiah: An Introduction & Commentary* (Downers Grove: InterVarsity Press, 1993): 86.

87 Jean Piaget, *The Moral Judgment of the Child* (Simon and Schuster, 1997): 28.

88 William Kay, *Moral Development: A Psychological Study of Moral Growth from Childhood to Adolescence* (New York: Routledge, 2017 [reprint]).



woman determined her personal moral principles vis-à-vis the command. She applied her own moral judgment, a phenomenon that begins in adolescence and continues throughout the rest of life, and weighed whether the rule was hypothetically non-binding and contrary to her own self-interest (the fruit was “good for food and pleasing to the eye, and also desirable for gaining wisdom”).<sup>89</sup> The universal nature of temptation and sin appears at the end of a process of moral maturation that all children undergo. In the end, the adolescent applies her own moral principles, considers her self-interest, and declares her independence, albeit prematurely. In the second instance of peer pressure, the man takes the fruit from the woman and eats it without apparent thought. If everyone else is doing it, me too!<sup>90</sup>

Although the Western church traditionally has viewed the first humans as adults at their creation, the nature of their disobedience better fits Irenaeus’ conception of them as children. The “fall” as presented in Genesis 2–3 perfectly replicates the moral transition from childhood to adolescence. Another creation text, Proverbs 8, says “the fear of the Lord” is to hate evil. The next lines of the poem provide examples of what that means: “I hate arrogant pride and the evil way and perverse speech.” In Proverbs, pride is “a self-confident attitude that throws off God’s rule to pursue selfish interests.”<sup>91</sup> What happens when a child begins to question the rules, as well as the motives of the rule-givers? Such is the thought process behind every first “morally responsible” sin—and the archetypal “original sin” of the first humans.

## Conclusion

Conceptual metaphors are built into the fabric of human thought as tools to elucidate complex concepts. Scientists routinely employ the metaphor of childhood development to explain the co-evolution of the brain, language, and morality. The comparison is apt; the collective human journey virtually parallels the individual journey of every human. Genesis 2–3 employs the conceptual metaphor of moral knowledge as a “coming of age” and applies it to “the man” and “the woman” as literary archetypes in a figurative text. Their symbolic journey from childhood innocence to moral maturity matches the trajectory of both human evolution and every normal child’s moral development. The conceptual metaphor of maturity resurfaces throughout Scripture, but it becomes especially prominent in the New Testament, where *teleios* “describes both the consummated reality (the ‘perfect’ or ‘complete’) and lives lived into that eschatological hope and energized by its partial

89 Susan Dwyer, “How Good is the Linguistic Analogy,” *The Innate Mind* 2 (2004): 237–38.

90 Peer pressure influences adolescents to violate the law but not adults. Cf. Rod Morgan and Elly Farmer, “The Age of Criminal Responsibility: Developmental Science and Human Rights Perspectives,” *Journal of Children’s Services* (2011).

91 Bruce Waltke, *The Book of Proverbs: Chapters 1-15*, New International Commentary on the Old Testament (Grand Rapids, MI: Eerdmans, 2004): 401.

realization (the ‘mature’). . . . The new creation is the advent of the ‘complete’ (*to teleion*) and . . . lives oriented to this coming reality are ‘mature.’”<sup>92</sup> Has the choice of metaphor in Genesis 2–3 primed us for an evolutionary understanding of human origins?

In childhood development, the line between child and adult is “fuzzy.” The same can be said for the line between human and animal in evolution. While the exact location of that line may remain a secret hidden in God, Christians nevertheless will speculate whether Neanderthal, Denisovan, *heidelbergensis*, all hominins, or only *sapiens* should be considered human. On the analogy of the man naming the animals, I suggest the first speakers of words are *adam*, the first members of the human family. *H. erectus* possessed the physical capabilities for speech, and the appearance of trade networks around 1 million years ago implies communication, probably a combination of gesture and a few simple words. Consequently, all of our hominin relatives from that point would be considered human, although, like children, they were immature and still developing.

A newborn child “made in the image of God” is not capable of abstract thought, cannot speak, makes no moral judgments, has no knowledge of God, etc. Even if one takes the *imago Dei* in the traditional sense as a “structural” aspect of the human being, these capacities still require “normal” development to achieve their potential. The same was true of humanity writ large. In its infancy (*erectus*), humanity could be spoken of as “created in the image of God” and endowed with a vocation. But abstraction, modern language, and mature morality still required millennia of development before they achieved their full human potential. If Jesus had to “grow in wisdom and stature” before he took up his earthly calling, should not the same be true of all of us, including *ha’adam*?

Tomasello identified the human instinct to share our psychological states with others as providing the evolutionary motivation for humans to speak. Ultimately, this sharing of ourselves undergirds the Christian understanding of love. All of us seek to be understood “for who we really are” and to understand who the other truly is. We need that empathy. We crave it. In this life, marriage is the closest bond between two people. Within the spousal relationship described in Gen 2:23–24, humans share themselves most fully with another person—physically, emotionally, intellectually. But even the marriage relationship cannot satisfy. Our inbuilt need to communicate ourselves can be met only in Christ, the God-man who alone fully knows us. As Paul beautifully put it:

“For we know in part and we prophesy in part, but when completeness

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92 Miroslav Volf and Matthew Croasmun, *For the Life of the World: Theology That Makes a Difference* (Grand Rapids: Brazos Press, 2019): 153–54. It’s also worth noting that Jesus routinely called his disciples “children.”

(τέλειον) comes, what is in part disappears. When I was a child, I talked like a child, I thought like a child, I reasoned like a child. When I became a man, I put the ways of childhood behind me. For now we see only a reflection as in a mirror; then we shall see face to face. Now I know in part; then I shall know fully, even as I am fully known” (1 Cor 13:10–13).

Thus, our Creator has instilled within us an instinct to share ourselves—our *complete* selves—with others and, more importantly, with himself. The spark set within us a million years ago is still making its way to the powder keg.

Regarding the “fall,” when we realize that the state of “innocence” of the immature human race, just like the immature human being, was one of ignorance instead of perfection, it is easy to understand how early man, like a child, could commit sins of ignorance. It is also understandable, then, how God could overlook those offenses without violating his own justice. Even human societies—imperfect as they are—do not hold toddlers accountable for breaking the law. “The man” was never perfect, and neither were we. That explains why the serpent appears in the garden without warning in Gen 3:1. Sinful behavior has been present with us from the beginning, intruding even into Eden.<sup>93</sup> Ponder once again our roots. Primate society is based on deception, manipulation, and social climbing. We did not suddenly outgrow these things. They are the origins of human sinfulness. Evil wove its way into the warp and woof of human culture long before we learned to give it a name.

Between 65–75,000 years ago, humanity acquired the capacity for abstract moral reasoning—the knowledge of good and evil. *Ha’adam* for the first time faced a morally responsible choice. Finally knowing the difference, would people choose the good, or would they judge by their personal morality and choose self-interest? While God previously overlooked humanity’s sins of ignorance, somewhere we had crossed a line—the same fuzzy line that each of us crosses in our own lives—and become morally responsible for our actions. Humanity had reached maturity. We had acquired the “divine wisdom” of good and evil, and with it—a conscience. What would we do with this new knowledge?

Since ha’adam as archetype embodies all of humanity, the conclusion is that everyone continued to do what they were accustomed to do—choose evil, even though they now understood those actions as morally wrong. The first boundary violation was violation of the conscience. Conscience is the self reflecting upon itself—both in its thoughts and actions. This ability depends on high-order Theory

93 The objection could be raised that Genesis gives no hint of evil behavior prior to the first transgression. But the serpent comes from outside the garden and is described as one of God’s creatures. Those details could be interpreted as the prior existence of evil and its natural, creaturely origins, both of which accord with the scenario offered here.

of Mind and language. First-order Theory of Mind is projecting one's thoughts into the mind of another individual and "walking in their shoes." Empathy opens the door to that possibility, but conscience requires something more. Conscience involves metacognition—thinking about thinking. The requirement for conscience is that the mind steps outside itself and considers its own thoughts and behavior from the perspective of a hypothetical observer. The beginnings of conscience are an awareness of how our community (or larger culture) would view our actions if we did what we were contemplating. These behavioral standards come first from our parents and eventually extend to our elder relatives, peers, and community at large. The problem becomes even more acute when we become sophisticated enough to conceive of an ideal that extends beyond our experience. In childhood development, that ability begins to appear with metaphoric thinking, around the age of 8. Conscience only became possible when the mind became capable of true self-reflection, of stepping outside the confines of its own consciousness and viewing itself from an outside perspective. Such sophisticated thought was not possible until protolanguage became language and basic empathy became second- and third-order theory of mind. The fear of the Lord is the beginning of wisdom (Prov 9:10), but the fear of the Lord is to hate evil (Prov 8:13). Humanity did not exercise its newfound moral knowledge as God intended, by listening to the conscience and choosing the good. Instead, we chose evil even after we finally saw it for what it was, when we should have hated and spurned it.

The "fall" transpired at a literal time and place between 75,000 years ago and the "Out of Africa" departure from the Levant 10,000 years later. Early humanity's childhood innocence was lost virtually as soon as abstract moral reasoning began. We fall short of the ideal as soon as we conceptualize it. Additionally, our ideas of right and wrong were formed by observing and imitating those around us—their form of life, both good and bad. Without doubt, human morality and conscience were born in the murky waters of human culture, not implanted before birth in every individual heart by God.

Such a scenario does not make God the origin of evil. The metaphor of maturity provides a framework for understanding the connection between moral maturity and moral decision-making. Jim Stump, Vice President of BioLogos, explains,

Perhaps the evolutionary struggle is the only way to develop moral beings like us. I'd suggest that moral maturity is a quality that can be developed only by making moral decisions. God can no more create morally mature creatures than he could create free persons who are incapable of sin. So to achieve moral maturity, agents must be involved in their own moral formation by making decisions with moral

implications. . . . It seems that evolution may be the only way to create beings with the capacity to know good and evil.<sup>94</sup>

Finally, just as language could not be invented by one person, the historical condition of “sinfulness” could not be invented by one person. Humans are indoctrinated into sin at the same time and in the same way that we learn language . . . and music, and art, and conformity to social norms, all of which are aspects of human culture. Social learning/mimesis explains how “original sin” arose and was/is propagated. Every generation participates in *ha’adam*’s sin, both individually and collectively. When Isaiah saw a vision of the Lord, he cried out, “Woe is me! I am ruined! For I am a man of unclean lips, and I dwell among a people of unclean lips!” Sin, as the prophet realized in God’s presence, is *both* individual and communal (Isa 6:5).<sup>95</sup> There never was an original sinner who invented sin, any more than one individual could invent a language, or one breeding pair could start a species. Speciation, language, sinfulness: All require a population.

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94 J. B. Stump, “Death, Predation, and Suffering,” in *Old-Earth or Evolutionary Creation?: Discussing Origins with Reasons to Believe and BioLogos*, eds. Kenneth Keathley, J.B. Stump, and Joe Aguirre (Downers Grove: InterVarsity Press), 71–73. Cf. <https://biologos.org/blogs/jim-stump-faith-and-science-seeking-understanding/evolution-and-the-problem-of-natural-evil>.

95 The same paradigm applies to salvation, which has individual and corporate aspects. We choose to follow Christ as individuals, but the gathered people of God (the *ekklesia*) are pictured metaphorically as one body, the bride of Christ, the new Jerusalem, the spiritual temple, the Israel of God, etc.