


AND THE WORDS BECOME FLESH: EXPLORING A BIOLOGICAL METAPHOR FOR THE BODY OF CHRIST

by Deborah J. G. Mackay 

Abstract. Although every cell in a human body contains the same DNA, every cell uses its DNA differently, in unique interaction with its environment. Human bodies live and thrive because their cells and tissues are sustained in a whole whose life emerges from, but cannot be reduced to, its parts. Living creatures are organized systems of processes that maintain their identity not despite change but because of it. These biological observations resonate with the foundational New Testament metaphor of the Body of Christ and with process-theological descriptions of creatures as open-ended processes interacting within a creation itself sustained within the boundless loving creativity of the Creator. I will map contemporary biological understanding of bodies as emergent and processual onto the theological metaphor of the Body of Christ and explore the ideas that emerge in terms of relationships between scripture, communities, and the life of the church.

Keywords: biology; DNA (deoxyribonucleic acid); emergence; process theology

INTRODUCTION

Bodies and Metaphors

The Body of Christ is a foundational, polyvalent metaphor for the church; it refers to the person of Jesus in his life, death, and resurrection, to the bread that Jesus shared with his disciples at their last meal, and not least, scripturally and theologically to communities of Christians connected by bonds of loving relationship with one another and with God. In this article, I explore the metaphor of the Body of Christ in terms of biological concepts of emergence and process. I suggest that this metaphor offers a view of the church not as an organization but as an organism whose life emerges in the equipoise between three elements: the scriptural resource of faith that is common to all, the capacity for each member to express their faith in a way that changes and is changed by their context, and

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the profound impetus that draws the members to unique yet unified life within the body.

The primary meaning of *body* is the “complete physical form of a person or animal.”¹ Further definitions include a large quantity of something undifferentiated, such as water in an ocean, a distinctive part of a larger whole, such as the body of a car, or a group of people participating in a collaboration for a social end, such as a college. These latter senses convey an idea of an identifiable whole composed of distinct parts (such as a car), an entity whose boundary is defined conceptually or physically (such as an ocean), or a structure capable of organized action (such as a college). Thus, body is often used metaphorically to define entities that are—or are to be taken as—coherent parts acting within a coherent whole.

The linguist George Lakoff and the philosopher Mark Johnson point out that “our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature”—indeed, so fundamentally that we are not normally aware of it (Lakoff and Johnson 1980, 3). We process our experiences using metaphors of entities or substances; this enables us to reason and talk about them, break them down into their components or group them into larger wholes. As an example, if I tell you, “I have an idea about solving your problem,” I evoke “your problem” as an entity that is susceptible to dissolution; I also evoke my idea as an entity that which is capable of making your problem disappear, perhaps by engulfing or dissolving it. My words evoke imagery of tangible entities of ownership, power, relative size and relative lifespan between me, you, my idea and your problem.

Janet Soskice discusses diverse fields, including science and religion, where metaphors that yoke new or evolving terms may be “theory-constitutive”: that is, they may suggest new models or testable hypotheses (Soskice 1985, 101). The metaphor of a genetic code is a striking example. Crick and Watson used x-ray images of DNA crystals, combined with the molecular properties of DNA’s component parts, to construct the iconic “ball-and-stick” model of DNA, and with it a conceptual model of DNA as a linear “genetic code.” From this emerged the idea of DNA as the “book of life” (Pennisi 2000), a metaphor that has had extraordinary cultural reach. Experts at a given skill are familiarly described as having their talent “in their DNA.” Based on the confidence that DNA encodes the unique program for each organism, scientists have turned genome sequencing from an exorbitant global project to a routine clinical tool for those nations wealthy enough to use it. In *The Selfish Gene*, Richard Dawkins asserted that genes exercise Darwinian agency by encoding creatures through which they manipulate their environment and maximize their survival; he designated the bodies of creatures as “survival machines” or “lumbering robots,” passive tools in the hands of the genes (Dawkins 1976, 19).

Metaphors are essential and widespread not only in science but in religion. The body of Christ is a foundational, polyvalent metaphor for the church—in Soskice's terms, a theory-constitutive metaphor. Its power is evident from its many applications: historically, to the person of Jesus; narratively, to the bread that Jesus shared with his disciples at their last common meal; ecclesiastically, to Christian communities connected by bonds of mutual responsibility and relationship to God. The most sustained biblical treatment of the metaphor appears in 1 Corinthians 10–12. Paul states: "You are the Body of Christ and individually members of it"; he avers the unity of the body whose members are "in the one spirit [...] baptized into one body," and yet notes the diversity of the body that "does not consist of one member but of many," all "arranged by God, as he chose"; he stresses mutual dependences between members of the body who cannot say to another "I have no need of you"; finally, he identifies a natural attribute of a living, unified body: "We who are many are one body, for we all partake of the one bread."

Ephesians 4 enjoins its audience to maintain unity and peace, not only because they were called to be in "one body and one spirit [with] one Lord, one faith, one baptism, one God and Father of all," but because they must, as members of this body, seek to "grow up in every way into him who is the head, into Christ" (Eph. 4:4–6, 15); this evokes unity of the body not only in the identity of baptism but also in common direction of its Lord, who is a living and leading head. In the letter to the Colossians, Christ is identified not only as "the head of the body, the church" but also "the firstborn from the dead," and "the firstborn of all creation" in whom "all things hold together" (Col. 1:15–18). The Body of Christ assumes eschatological and cosmic proportions, and its members have, under the headship of their living lord, a place in an order that encompasses time, creation, and mortality.

In Romans, the metaphor is further ramified by contrasting the Body of Christ with that of sin. Paul indicates that his hearers have been transferred from sin's body to Christ's and urges them as members of "one body in Christ, and individually [as] members one of another," to make the reasonable response to this grace, which is to "present your bodies as a living sacrifice, holy and acceptable to God" (Rom. 12:5, 12:1). Paul's treatment of sin as a body has exerted profound influence on Christianity. Matthew Croasmun surveys theories about the origin of human sin, ranging from an inborn human trait, such that "each infant born into the world possesses that gene, as it were, that predisposes toward sin," to something socially transmitted, where "sinfulness of one generation is conditioned by the sinfulness of the previous one, and in turn conditions that of the latter"—or indeed both, with "epigenetic transmission of sin [through] the interplay of genetic and cultural mechanisms" (Croasmun 2017, 133). To these he adds an understanding of sin as a mythological cosmic power, a convoluted

mesh of competing processes from which emerges a higher order of self-perpetuating pathological interdependence “in which future transgressions flourish as natural” (Croasmun 2017, 107, 123).

Becoming: Emergence and Process

Croasmun roots his analysis in the concept of emergence, whereby emergent states of affairs are “entities, properties, or processes [that] arise from more fundamental entities, properties, or processes and yet are irreducible to them.” Emergent phenomena, or emergents, are wholes that are greater than the sum of their parts.

We tend to process our experience in terms of entities rather than emergents; we understand our world in terms of things that are unchanging in the timescales in which we think about them. For example, if I think about my table, I confidently imagine that I could unscrew its legs, replace its leaves, or put it in storage without the least effect on its intrinsic capacity to function as my table. This objective viewpoint implicitly assumes that entities exist independently of one another and the relationships between them can be considered as external to their existence (Birch and Cobb 1990, 100). But this view is at odds with the behavior of many things in our experience. For example, snowflakes are composed of water molecules, but while their hexagonal shape can be predicted from the structure of water, the unique shape of each snowflake cannot. Nor can the properties of snowflakes predict those of snowfall; whether we will enjoy a flurry or suffer a blizzard will emerge from the interaction between the snowflakes and their meteorological and geographical environment.

Emergence is recognized on quantal, physical, chemical, biological, social, ecological, and astronomical scales. The biochemist and theologian Arthur Peacocke posited an ascending hierarchy of emergence in sciences from physics to biology (Peacocke and Clayton 2007, 13). He moreover stressed that the intellectual tools and models for understanding different levels are epistemologically valid and independent of one another; for example, meteorology may seem less precise than a smaller-scale discipline such as chemistry, but meteorological rather than chemical models are required to forecast an impending blizzard.

Emergence has an implicit temporal component. The very word carries a sense of flux, of entities combining or separating over time, or enduring through the dynamic interaction of their component parts. Over the past century, beginning with the development of quantum dynamics, notions have seeped into popular culture that we live in a cosmos made not so much of objects that sometimes change but of processes that sometimes seem as durable as objects. In our experience—and contrary to our cognitive habits—everything changes, from galaxies to planets, ecosystems to organisms, molecules to atoms and quanta, albeit at vastly different

timescales (Jaeger and Monk 2015). A snowflake landing on my hand rapidly changes to water. I change from decade to decade, and moment to moment; even my table is, at a stretch, recognizable as a process rather than an entity.

Alfred North Whitehead developed process philosophy after his early career in electromagnetics and quantum physics convinced him of the invalidity both of classical notions of space as “passive, systematic, geometric” and of “all physical laws [as] geometrical relations” (Whitehead, Northrop, and Gross 1953, 900). He became convinced that the universe is fundamentally one “complex state of activity[;] in one sense, a unity.” Although his ideas did not gain widespread acceptance in academic philosophy, they have been fruitfully explored in fields including physics and biology, and particularly in theology. For example, Karen Barad starts from the principle of quantum indeterminacy (the concept that some properties of quantum particles are not knowable and effectively nonexistent until they are observed) to observe that at the quantum level, entities are more accurately described as phenomena; and, since observing phenomena requires interaction between the observer and the phenomena observed, she argues that entities may be more reasonably described as “intra-acting” phenomena (Barad and Fulton 2007, 19, 332). On the cosmic scale, the process theologian Catherine Keller locates Whitehead’s universe as “one immense, living and open-ended network of spontaneous interactions” within God who, “at once eternal and becoming, is a living process of interaction” (Keller 2008, 23).

In the biological middle ground where we humans live, our scientific understanding that tables are mostly empty space is tempered by our lived experience of successfully resting coffee cups upon them (Midgley 2014, 1). We have deep-rooted habits of understanding objects by distinguishing them from other objects, assorting them within larger objects, and denoting each object a “container of objects that change properties or location and interact with one another” (Lakoff and Johnson 1981, 30–32). My self-understanding is affected by this logic: I operate on a common-sense assumption that I am in some senses the same today as yesterday and (hopefully) tomorrow. Genetics tells me that my genes are “some sort of enduring essence of an ephemeral living body” (Nicholson and Dupré 2018, 1), while biology tells me that my body is a hierarchy of integrated processes; in a similar way, my Christian faith teaches me that my enduring essence is in some sense spiritual, while from day to day I live as an ephemeral member of the Body of Christ.

By exploring the metaphor of the Body of Christ in terms of biological concepts of emergence and process, I hope to show how an idea of the church as a multicellular body offers ways of thinking about the church as an organism rooted in people rather than an institution formed of organizational or physical structures. Like all metaphors, this has limits of

scope and risks in application. I acknowledge that an image of the Body of Christ as human may evoke anthropocentric and exclusive stereotypes (McFague 1993, 205–6). Furthermore, by mapping the global historical phenomenon of the church onto a metaphor of a body, I implicitly reduce its social, political, and cultural history to biological emergents; this in turn risks suggesting the exoneration of institutions and episodes that have been or are appalling—and have often been scripturally justified. Notwithstanding these cautions, I suggest that the human body remains a helpful metaphor of the Body of Christ because it mirrors the imagery of Paul’s letters, and because it evokes images of bodies that readers, also having bodies, will be well-placed to grasp.

WORDS: A GENOMIC METAPHOR OF SCRIPTURE

Human bodies are composed of cells, each of which contains a shared genetic information resource of DNA. I briefly describe salient concepts in genetics and cell biology before exploring ideas that emerge from a metaphor of the Body of Christ whose members have a shared information resource in the form of scripture.²

Every cell in a human body contains the same DNA. The human genetic material—the genome—comprises approximately three billion nucleotides of DNA and is identical in each of the approximately thirty trillion cells in any one adult human. Although the human genome differs between ethnicities, within ethnicities, and indeed between family members, even identical twins, similarity outweighs difference: the genome is 99.9 percent identical between any two people (Collins and McKusick 2001).

DNA does not directly form any component of cells; instead, it encodes biological information that is sufficient to make all cellular components—including all the components that synthesize these components—in any cell at any developmental time or place. Each DNA sequence encoding a cellular component is called a gene: the human genome contains some 20,000 genes, which together constitute less than 2 percent of the genome (of the remainder, about 50 percent is regulatory, while much of the rest is structural or repetitive).

The process of “decoding” DNA sequence to synthesize cellular components is called gene expression and has two stages: transcription and translation (Figure 1). During transcription, DNA sequence is copied (transcribed) into a more unstable but more abundant and expendable intermediate, RNA. RNA is transported from the nucleus to the cell body, where it acts as the template for translating the genetic code into the protein components that function in the cell. Transcription and translation are temporally and spatially separated and independently controlled; this disjunction is normal and healthy for organisms, providing layers of

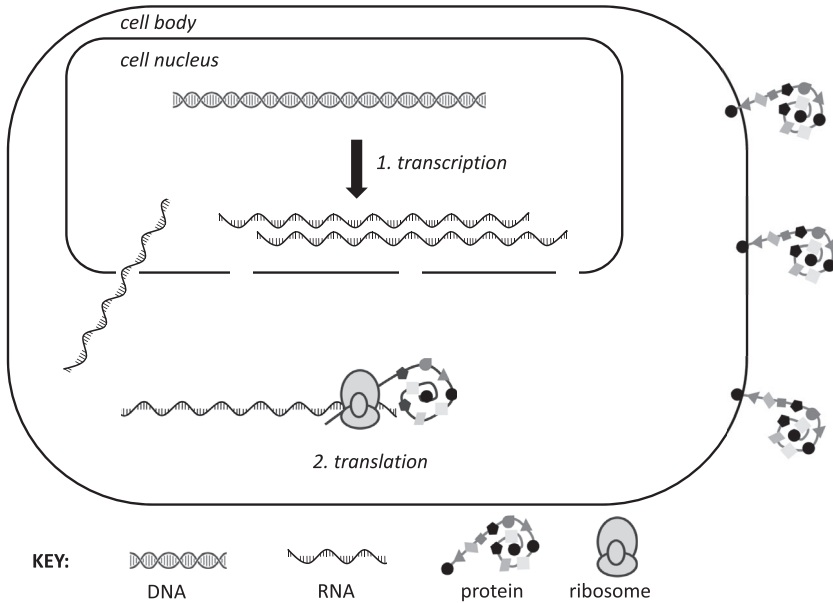


Figure 1. Schematic of gene expression in two stages: transcription of DNA into RNA, and translation of RNA into protein. Note that DNA and RNA are both polynucleotides, albeit DNA is double-helical, whereas RNA is single-stranded, and RNA transcript sequence mirrors that of the DNA template. Protein structure is cognate with the RNA template but “translated” from the form of polynucleotide to polypeptide sequence. Figure simplified from National Human Genome Research Institute resources (www.genome.gov/): www.genome.gov/genetics-glossary/Translation.

control over expression of genes in relation to their condition and environment.

Every human cell contains the same DNA, but every cell uses it differently. Aside from a core set of “housekeeping genes” expressed in all cells to sustain life (Eisenberg and Levanon 2013), different cells express different combinations of genes to manifest different forms and functions in different times and locations, from our eyes to our toenails, and from early embryogenesis to mature adulthood. Even at the level of, for example, adjacent skin cells on my hand, the cells look identical, but each contains a complete genome and each, albeit developmentally determined to express skin genes, modulates its gene expression over time in relation to the specific environment in which it lives. The complement of genes expressed by a cell—or, on a larger scale, an entire organism—gives rise to its form and actions, and the way it appears: that is, its phenotype.

Exquisite, dynamic control of gene expression is essential for each human cell to manifest its phenotype and play its role in the body. Although less than 2 percent of the human genome is directly expressed in cell

components, over half is involved in controlling what genes are expressed in which cells and in what quantity. Each cell's DNA is organized and folded to control how genes are expressed: generally, the DNA of highly expressed genes has an open structure, facilitating transcription, whereas nonexpressed DNA is highly condensed. A panoply of cellular factors and adjuncts associate with the DNA; some impede gene expression while others "fold" the DNA so as to appose key regulatory sequences that facilitate gene expression (Figure 2). These patterns are reversible, yet can be maintained stably for long periods. It should be noted that these ideas supersede classical notions of genes as one-dimensional strings of letters.

This organization alters not the sequence of the DNA but its structure; it is *epigenetic* (on or around the genetic material). The biologist Conrad Waddington coined the term epigenetics to refer to "the causal interactions between genes and their products that bring the phenotype into being" (Waddington 1942). Waddington's definition stresses that an individual's phenotype necessarily both arises from and directs the genes that it is expressing. Although DNA is generally represented as a linear text, and while features such as gene sequences and regulatory features can be identified in genome sequence, the way that each cell organizes and expresses its DNA emerges from its status and environment and is too complex to be predicted. The phenotype of an organism, emerging from the phenotypes of its constituent cells, is correspondingly further beyond prediction. It is equally impossible to infer the genome of a human from their appearance and the appearance of a human from their genome. An epigenetic understanding of gene expression is inconsistent with Dawkins's image of bodies as "lumbering robots" at the mercy of their genes.

The Bible comprises approximately three million letters in sixty-six canonical books of narrative, poetry, aphorism, and instruction. I do not propose a geometric correspondence between the coding mechanisms of genes and scripture, but I wish to draw out some qualities that the Bible possesses by virtue of being a written text.

First, as a text, the Bible is encoded. Letters of the alphabet signify uttered sounds, and reading is a process of recognizing and recombining these signs to reconstitute complete words and apprehend their signified content. In our highly literate culture, we are so accustomed to the processes of reading that we tend to overlook the fact that texts like the Bible must be decoded to be understood, much as DNA sequence must be decoded into its products. Second, text is linear, albeit that modern printed Bibles are indexed, paginated, and visually arranged to aid comprehension of readers. Third, written text is silent. This may seem an obvious point, but it bears stressing that the Bible cannot read itself, any more than purified DNA in a tube can express itself. It is oral tradition reified, which by virtue of being reified was liberated from the physical presence of its authors but at the same time rendered dependent on future readers (Ong

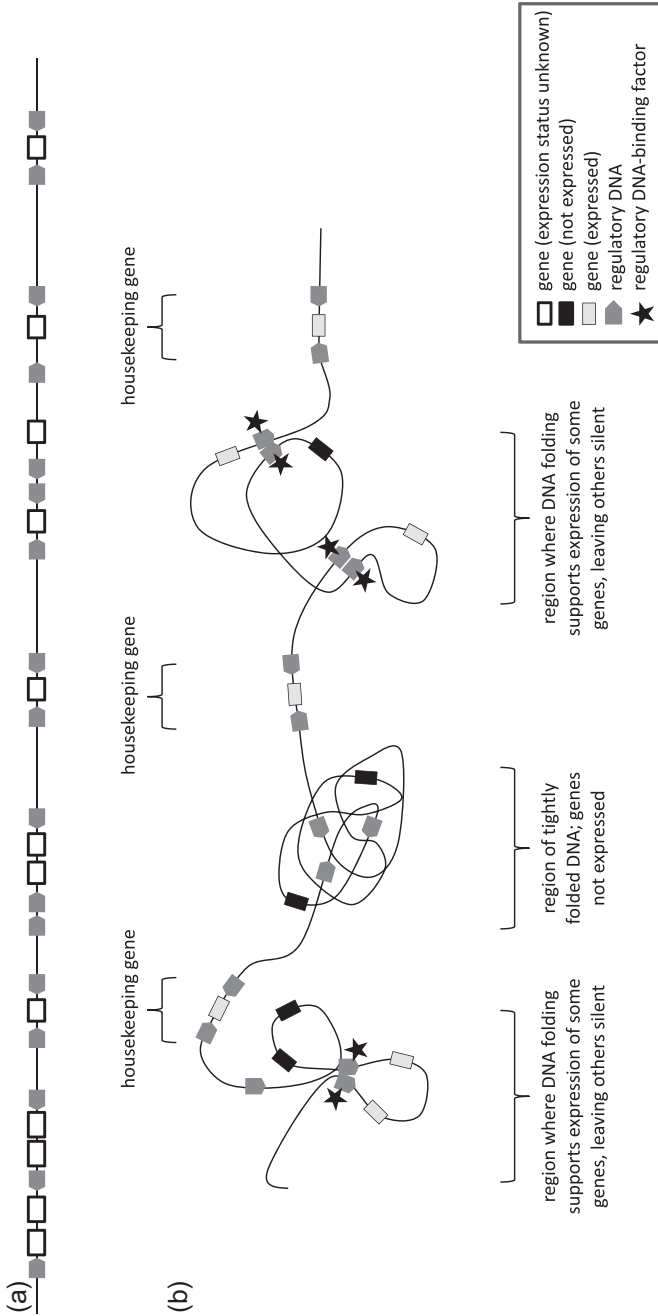


Figure 2. The folding of DNA regulates gene expression. Panel A: A commonplace schematic view of DNA as a linear array of genes and regulatory sequences. Panel B: Schematic of the state of affairs in a cell: housekeeping genes (required by all cells) are constitutively expressed; tissue-specific genes within tightly folded DNA are inaccessible and not expressed; other tissue-specific genes are maintained in accessible DNA, where permissive regulatory factors associate with appropriately orientated regulatory sequences. Note that in other tissues, in the presence of other regulatory factors, the DNA would adopt different epigenetic organization, and other combinations of genes would be expressed. Figure adapted from Carter and Zhao (2021) and Pombo and Dillon (2015).

1982, 31–32). Every act of reading scripture is a decoding, the transformation of signs in space into processes in time, an act of *expression*.

In acknowledging that we express scripture, we immediately acknowledge how little of it most of us express, particularly those of us whose literacy leaves us disinclined to memorize texts. The fact that I can hold my Bible in my hand deludes me into thinking that I apprehend the text inside it when in fact I read only a small percentage of my Bible more than annually; and it contains some texts that “we want to forget but are commanded to speak” (Trible 1984, 65). For most Christians and most of Christian history, the Bible as text has been inaccessible, not only because of the high cost and low availability of manuscripts but because of limited literacy. The text would normally be encountered aurally, not through sight but sound, and corporately, in the context of worship.

Christian worship involves corporate hearing and response to scripture. Notwithstanding the extensive textual resources used for worship in many churches, there remains a crucial value to public declamation of scripture. Sound “exists only when it is going out of existence” and is therefore a shared event in time and space, an immediate transaction between the speaker and listener (Ong 1982, 32). Worshipping communities share scripture, from lectionaries that appose key relevant texts at different times and seasons to the liturgical weaving of phrases and actions that lift the text off the page, intensifying its theological and spiritual impact.

For example, the Eucharist is the central liturgy of the church—an essential “housekeeping gene,” as it were, recorded by all four Gospels as well as 1 Corinthians and expressed by Christians ubiquitously. The words of the Eucharistic Prayer are often supplemented with scriptural interjections from Isaiah 6:3 (*Holy, holy, holy...*), Psalm 118:26 (*Blessed is the one who comes...*) and John 1:29 (*Lamb of God...*). Different Eucharistic liturgies reference and adapt other scriptures such as John 1:3, 1 Chronicles 29:10, 1 Chronicles 29:14, Matthew 8:8, Matthew 15:27, Genesis 1, and Luke 15:11–22, not to mention the scriptural references that reflect, enrich, and heighten different ecclesial seasons and pastoral occasions. Communities express scripture within a prism of worship that both reflects their specific situation and shapes their response to it. Or, to put this in biological terms: every cell in the Body of Christ has the same scriptural DNA but expresses it differently, giving rise to different ecclesial “phenotypes” of communities across the life of the whole body.

It follows from this that worship evolves in relationship with communities and their interaction with scripture and necessarily differs between communities, between times and places. Conversely, worship that bears no relation to its community, or uses of scripture that deny, denigrate, or dismiss a community, can alienate or simply be supplanted by that community. Mukti Barton explores how the “Curse of Ham” was used to legitimize European imperialism imposed upon colonized peoples;

conversely, she adduces several examples of Black people who, gaining access to the Bible, developed new theologies upon narratives such as the exodus of Israel from Egypt, or developed ideas and arguments, such as Olaudah Equiano corresponding with a pro-slavery campaigner citing 1 Corinthians 7:22-23: “For whoever was called in the Lord as a slave is a freed person belonging to the Lord. [...] You were bought with a price; do not become slaves of human masters” (Barton 2011, 63–66). Over the past century, novel patterns of engagement with scripture have underpinned contextual theologies alongside emerging “phenotypes” of church.

There is an analogy between the spatially separated processes of transcription and translation in cells and the worship and action of churches: worship usually takes place in church, whereas its “message” is usually translated into action outside. There is no automatic connection between Christian worship and praxis—indeed, many might lament the lack of connection between the message and its product—and individuals and communities may spend much time gathering information, discussing, praying, and planning before embarking upon new corporate activities. I suggest this behavior to be normal for a living body whose phenotype emerges from the interactions between its common scriptural “genome” and its lived environments. As a result, we require not one single narrative of Bible or church, not one single abstract notion of ethics or praxis, but a living faith that emerges from ongoing dialogue between text and context.

BECOMING FLESH: AN EMERGENT METAPHOR OF BODY

By thinking about gene expression, we have seen how the forms and capacities of multicellular organisms emerge from their shared genetic resources expressed in relation to their lived experience. I will now elaborate concepts of multicellular bodies as biological processes and consider what theological ideas emerge from a metaphor of Christ’s Body as multicellular, emergent, and processual.

As Daniel Nicholson and John Dupré put it, living organisms persist precisely by not remaining the same (Nicholson and Dupré 2018, 11–12). While I have a likely lifespan of decades, my constituent cells have lifespans varying from hours to years. Each cell contains DNA that endures for the lifetime of the cell but encodes RNA, proteins, and other factors that turn over in days to minutes. The nourishment and oxygen that sustain cells are consumed by intra-cellular processes with a turnover of milliseconds, and which themselves supervene upon (sub)atomic processes in quantum manifolds (Figure 3). I endure as a person because I am in flux; at every level, what I have been is incorporating what I am breathing and eating into what I will be.

The intertwining, interactive processes that sustain life were dubbed “hypercycles” by the biologist Charles Birch and the process theologian

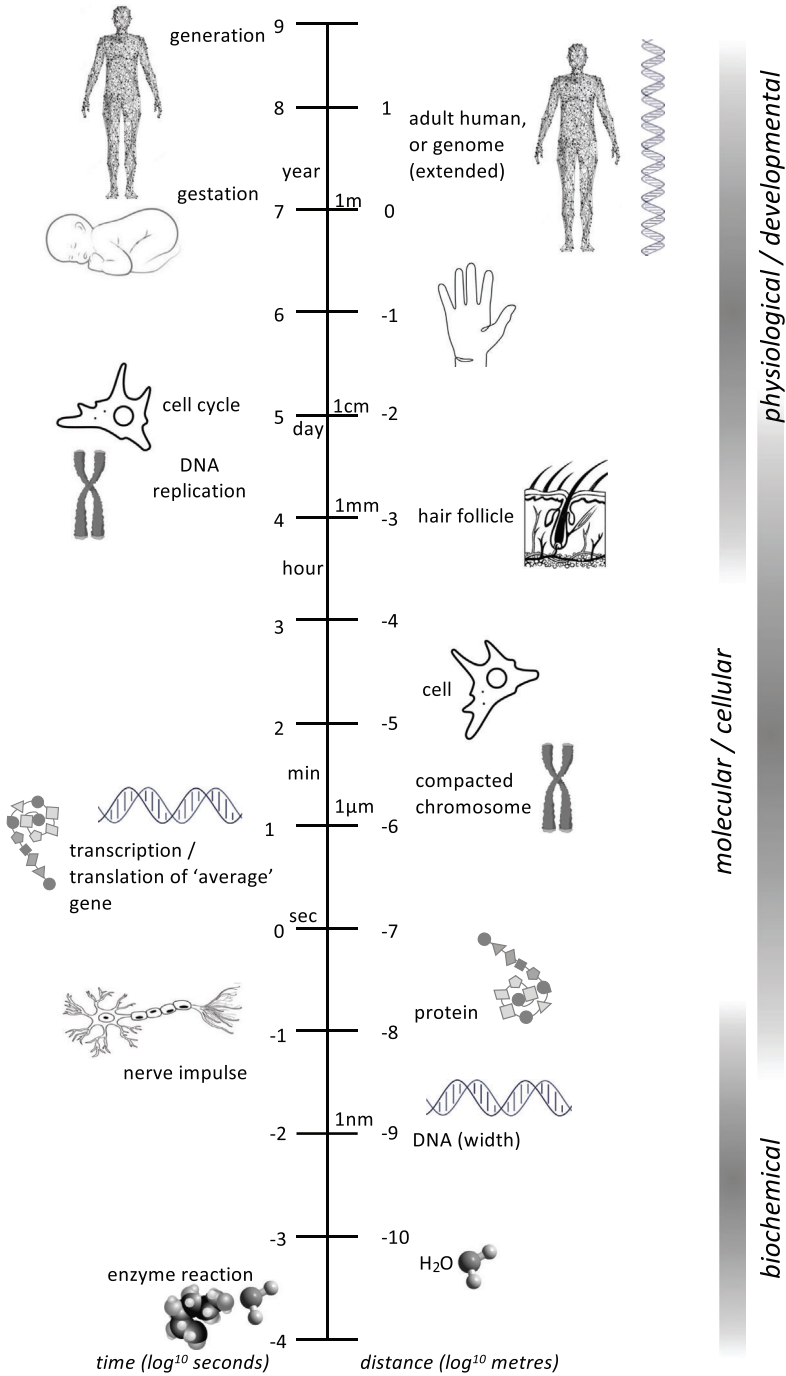


Figure 3. (Opposite page) Spatial and temporal scales of processes in a living organism. The central scale marks, logarithmically, time in seconds (left) and space in meters (right); to aid orientation, some familiar measures are annotated, such as year and day, centimeter, and millimeter. On either side of the scale, annotated images denote processes and structures. On the far right, gray bars indicate the approximate extent of processes within the academic purview of biochemistry (the chemical basis of biomolecular structure and function), molecular cell biology (the molecular basis of cell structure and function), and physiology/developmental biology (the biological basis of human structure and function). Estimates are: generation = 25 years; gestation = 9 months; cell cycle = 24 hours; DNA replication = 8 hours; an “average” gene is transcribed and translated in 1 minute based on transcription at 60 bases/s and translation at 20 amino acids/s; nerve impulse = 100 milliseconds (e.g., a sprinter starts 150 milliseconds after the pistol-shot, or a visual perception registers after 60–100 milliseconds); enzyme turnover = 1–100 microseconds; human height = 2 meters; extended human haploid genome = 2 meter length; hand length = 15 centimeters; hair follicle = 0.3 millimeter diameter; cell diameter = 30 micrometers; mitotic X-chromosome = 7 micrometers; the enzyme RNApolIII = 15 nanometer diameter; DNA helix width = 2 micrometers; H₂O molecule = 275 picometers. [Color figure can be viewed at wileyonlinelibrary.com]

John Cobb (Birch and Cobb 1990, 290). They point out that “the living organism must be constantly active. If all its constituents remained unchanged for even one second it would quickly return to a bundle of inanimate physical elements” (Birch and Cobb 1990, 106). From this starting point they develop a sustained thesis of life as essentially relational, so that what we refer to as a living thing is more fittingly described as a “stabilized process,” sustained as the intersection of myriad other processes at different physical and temporal scales (Nicholson and Dupre 2018, 371).

A living human originates in a single cell, the fertilized egg or zygote, which is totipotent—capable of giving rise to any and all cells. Successive divisions of this zygote give rise to the cells of the body; and with these divisions come decisions, in which tissues and organ systems emerge from cells shaping and being shaped by their living environment. Within these emerging body systems, cells traverse developmental trajectories wherein possible pathways open out while others are cut off. Development is the “ordering” of biological capacity from an unstable state of maximal potential to a stable phenotype that sustains a “dynamic balance between robustness and plasticity” (Nicholson and Dupre 2018, 247).

Most cells in a typical adult are developmentally settled; for example, the skin cells of my hand have, for all practical purposes, no prospect of metamorphosing epigenetically into, say, eye or toenail cells.³ Cells in different body systems maintain their number, form, and function and thereby maintain my form and function across my lifespan; they also maintain the capacity to respond to events impinging upon my body and to change my body over time. We grow and thrive not through *homeostasis*—preserving

an immutable steady state—but by *homeorhesis*—restoration of flow. We might be tempted to regard our bodies as things, but in fact, we are systems of transient, co-operating parts that persist not despite change, but because of it.

Not only biologically, but socially, humans are emergent. Catherine Keller argues first that people are “nothing more and nothing less than open-ended processes of interaction,” and second that “we don’t exist apart from our relations” (Keller 2008, 146). These are complementary ways of observing that each of us changes and is changed by our lived experience. A single interaction may be an inflection point in a person’s life, a transforming event giving new direction or impetus to their actions. In the same vein, Rowan Williams describes himself as the “sum-over” of all the things that have happened to him and his responses to them, with capacity to live as a “point at which relationships intersect, where a difference may be made and new relations created” (Williams 2018a, 31).

Critically, Keller insists that human emergence is fully comprehended within the boundless creativity of God, which “at every level from the subhuman in all its ranges up to and including the human level with its affairs, is by necessity always and everywhere activity in love”. Between God and Christ is a perfect identity of love so complete that it overflows across time and space, drawing all creation toward the loving unity that is God (Keller 2003, 178). Our experience of the Body of Christ may be understood as our best possible understanding, from a human temporal viewpoint, of this unity of love. As she states: “If we take seriously Paul’s metaphor of the Body of Christ we belong to a complex organism that as such must always be unfolding in its metabolic porous relations” (Keller 2008, 152).

Paul’s letters frequently employ metaphors of the Body of Christ. Paul lived in a Hellenistic culture in which the body was a widely used image of social cohesion: as Dale Martin puts it, the body was “a microcosm—a small version of the universe at large” (Martin 1995, 15–16). The metaphor was often co-opted to promote order by discouraging conflict and keeping everybody in their biological “place”; after all, “who can imagine a foot becoming a hand—or, even less plausibly, a head?” (Martin 1995, 93). Martin goes on to show how 1 Corinthians subverts the body analogy, challenging its ostensibly plausible status hierarchy as specious. In a similar vein, Peter Brown’s study of the letter to the Galatians examines how Paul uses body imagery to dismantle that same body, representing baptism as “stripping off [the] distinguishing marks on which the hierarchy of ancient society depended. Divested of these features, the believers were considered to have recaptured a primal, undifferentiated unity” in which there is “neither Jew nor Gentile, slave nor free, male and female” (Brown 1988, 49). Brown’s use of “undifferentiated” carries resonances of early embryogenesis; it suggests that baptism enables the Christian to

“de-differentiate” from their fixed social status and gain fresh potential to grow and develop in new ways.

In biological terms, an undifferentiated state is unstable: embryos do not maintain pluripotency, but differentiate even as they grow. From Acts and the Epistles onward, the history of Christianity shows the development and morphogenesis of a body in different (and frequently hostile) social settings, balancing the unity and diversity of its members and balancing a dominant “phenotype” of hierarchical authority with a recurring impulsion to radical equality. Inasmuch as social bodies perdure in similar ways to biological ones, by altering their self-expression over time in response to their environment, we may be unsurprised and indeed reassured to see that the “phenotypes” of church communities vary between different times and places.

THOUGH WE ARE MANY: A UNIFIED METAPHOR OF BODY

Having brought together ideas of shared textual information and phenotypic emergence as features of multicellular bodies, we need to go one step further and integrate these ideas explicitly, by understanding the body as an exquisite balance between the unique capacities of the parts and their necessary integration into one unified whole.

In Ephesians 4, Paul reminds his listeners that they live as one body with one Spirit. The subsequent passage is so familiar, and its constituent statements so closely apposed, that it takes a peculiar effort of attention to notice the nuances of *one* hope, *one* baptism, *one* faith, *one* Lord, and *one* God. When we say *one*, we may denote a unique identification, such as “this one, not that one,” or a unified composite, such as “one blizzard,” which we metaphorically containerize in the way described by Lakoff and Johnson (1980).

Jesus’s contemporaries were perfectly familiar with the idea of a social body as a unified one: they acknowledged religious unity in stating: “We have one father, God.” For God, however, “one” was a designation of unique identity, as prayed daily in the Shema: “The LORD our God, the LORD is one” (Bauckham 2015, 21–29, 32). What they found unprecedented was Jesus’s assertion that “I and the Father are one”. Richard Bauckham draws out the interplay between these two senses of “one” in John 17, where Jesus prays to the Father that his disciples “may be one, as we are one, I in them and you in me, that they may become completely one”. Here, even more intensely than in Ephesians 4, different senses of *one* merge with a fluidity that dissolves any attempt to parse logical categories of parts or wholes, unifying or uniqueness, physical or social or cosmic bodies. Not only boundaries of bodies but hypercycles of experience—human, communal, ecclesial, scriptural, temporal, and eternal—merge into one.

A human body is “one” in both Bauckham’s senses of the word. Specialized parts exercise key functions, such as respiration and nutrition, by which oxygen and nutrients are distributed to every part of the body, so that each cell can in turn perform its function as part of the whole; if this flow of sustenance fails, the whole cannot sustain the parts, and very soon the parts cannot sustain the whole. Conversely, the individual parts cannot exist apart from the whole: cells isolated from a body cannot survive, because their genetic constitution is highly evolved for obligate multicellular life. The unified life of the body emerges from the common genome that is distinctively expressed by each part and from the necessary interdependence between the parts and the whole.

This is most clearly expressed in the Eucharist. When “we who are many are one body, for we all partake of one bread,” we fulfil Jesus’s prayer “that they may be one as we are one, I in them and you in me”. Eucharist is *par excellence* an expression of scripture (Peacocke and Clayton 2007, 42–43) in that it obeys the explicit scriptural command to “do this in remembrance of me” by repeating the words and re-enacting the actions of Christ who is scripturally identified as the Word of God. Rowan Williams describes Christ as the divine Word that “animates within creation the active, energetic interweaving of intelligible life that makes finite reality a *universe*, not a chaos” (Williams 2018b, 226; my italics). If we take seriously the metaphor of the Body of Christ, we must take seriously the grace of God that longs to incorporate us into this Eucharistic body.

This understanding potentially contributes to Matthew Croasmun’s thesis of the Body of Sin in Romans. After making a powerful case that sin has both an emergent, social, and a mythical, cosmic nature, he ponders the difference between the bodies of Christ and of sin. He adduces process theology to suggest that sin has only an emergent, consequent nature, whereas the Body of Christ emerges from God’s antecedent nature as the ground of all things (Croasmun 2017, 187). To this, I would add the suggestion that Christ’s Body is distinguished by its unifying biblical “genome”. Scripture encodes the principle of love for God and neighbor, corporately expressed in worship and praxis, which, at its best, tends to integrity, incorporation, continuity, and community while remaining inherently capable of novel expression. This contrasts with Croasmun’s concept of sin, which has no common “genome,” but represents the incoherent, competitive, or destructive practices by which individuals and groups seek to increase themselves at the expense of others.

CONCLUSION: THE WORDS BECOME FLESH

In my view, a biological metaphor for the Body of Christ offers further avenues for theological exploration. For example, Argyris Arnellos argues that bodies are defined—literally—by the boundaries around them, which are not impenetrable barriers but facultative ones, enabling the

life processes within to be “organized so that they constrain the flow of matter and energy between the environment and the [organism]” (Nicholson and Dupre 2018, 206). I would like to consider biological ideas of boundaries in relation to the church, in terms of its physical and institutional structures, its relationships with other faiths and other social systems, or the incorporation of new members. Another potential metaphor for exploration is health of the ecclesial body and its members, including both numerical decline and growth. Catherine Keller remarks that “[c]hurch growth is often mistaken for the measure of the life of the institution”; however, “quantitative growth in a mature organism usually signals an eating disorder or a cancer” (Keller 2008, 152); a metaphor of pathology may offer ways of thinking about the health of communities within the life of the whole Body. I would also like to consider the metaphor of bodies as complex emergents whose behavior is often modeled and temporally ordered by means of narrative (Croasmun 2017, 65; Soskice 1985, 53) in relation to the central role of narrative itself in the Gospel for shaping the faith of its readers (Wright 1992, 38–43, 130) and particularly, the Gospel text as the locus of revelatory encounter with God in Jesus (Schneiders 2003, 10, 71).

I acknowledge again that equating the Body of Christ with a human body risks reinforcing an anthropocentric view of God’s creation, trivializing atrocities or regimes as simple biological states of affairs and reducing to morally neutral text passages of scripture that have given rise to incalculable suffering. These risks must not be overlooked in a Vitruvian vision of a united Church dwelling in harmony with God. Our ecclesial body is no more perfect than our human bodies; it is the body that we have, profoundly imperfect as it is, perpetually becoming what it will be. Churches can be dysfunctional and liturgy malnourished, just as bodies can be ill or malnourished; but as our bodies have homeorhetic capacity to change and heal, we believe that Christ’s Body has the capacity to be changed by God’s living spirit.

As members of this body, we accept the charge to proclaim our faith afresh in every generation. We are not called to cling to our Bible but to translate it into action, not only to absorb its message but to metabolize and embody it, balancing the continuity of our shared scripture with the creativity of unique expression. As followers of the Word who becomes flesh, we are called to become the word that is proclaimed afresh in every generation.

NOTES

1. Oxford English Dictionary Online, Oxford University Press, December 2022, <https://www.oed.com/view/Entry/20934>

2. Essentially every biological statement that I make is to some degree a simplification of contemporary biological understanding. I have done this for the sake of concision and com-

prehensibility but without, to the best of my knowledge, compromising sense or reliability. For example, it is not true that “every cell contains the same DNA”: aside from gametes, muscle syncytia, and erythrocytes, which contain haploid, shared, or no genomes, respectively, all cells in the body acquire somatic variation (e.g., Moore et al. 2021). I use scientific terms to be clear and concise; readers seeking further clarification are directed to an online open-access glossary <https://www.genome.gov/genetics-glossary>. Further, regularly updated information about the human genome may be found at www.ensembl.org/Homo_sapiens/Info/Annotation.

3. This is one of the most critical limitations of the biological metaphor as focused specifically on a *human* body. Mammalian bodies in general and long-lived mammals (such as humans) in particular have limited capacity for tissues to regenerate or transdifferentiate—that is, for cells to change their fate—this is an evolutionary adaptation to extended lifespan and a protection against neoplasia. By contrast, many plant cells have capacity to transdifferentiate that seems little short of miraculous, as witnessed by anyone who pops a sneaky cutting into a jam jar of water and watches the new roots emerge, or anyone who has seen a new shoot emerge from the blackened stump of a tree. Individual members of the Body of Christ are understood, in baptism, to be liberated from all antecedent social hierarchy or “differentiation” that could constrain their capacity to become members of Christ. It is essential that a body metaphor carry *no* sense of constraining its members to specific capacity or location; indeed, Paul explicitly negates any such sense in his use of the metaphor.

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