

special emphasis placed on cladistics, a Bahá'í sobre la methodology not available in 'Abdu'l-Bahá's day, and heretofore not mentioned in Bahá'í-authored publications related to evolution. This paper concludes with ex- l'auteur passe en amples of how cladograms may aid in con- sur l'évolution, y ceptualizing some of the evolution-related lumière de la biologie statements of 'Abdu'l-Bahá, (for example, utilise la cladistique – His statement that “man is not an animal”). classification	evolucionaría al discurso evolución. Résumé Dans le présent article, revue les études bahá'ies relève une lacune à la évolutive actuelle et une approche moderne de la
In using this approach, the intention of the certaines author is not to re-interpret 'Abdu'l-Bahá's entre des concepts statements, nor to “prove” any particular évolutive et certaines interpretation thereof, but rather to bring 'Abdu'l-Bahá. Il présente modern concepts of evolutionary biology de la into Bahá'í discourse on evolution. phylogénétiques, en accordant une attention particulière	biologique – pour réexaminer divergences perçues actuels de la biologie déclarations de une synthèse de la taxonomie et construction d'arbres
Resumen metodología qui Este artículo examina la pasada erudición l'époque de 'Abdu'l-Bahá Bahá'í sobre la evolución, identifica una mencionnée jusqu'à brecha entre esta erudición a la luz de la bahá'ies actual biología evolucionaría, y utiliza L'article se termine la cladística-una metodología moderna comment para la clasificación biológica-para aider à	à la cladistique, une n'existait pas à et qui n'a pas été présent dans les publications relatives à l'évolution. par des exemples illustrant les cladogrammes pourraient
8 The Journal of Bahá'í Studies 35.4 2025	
conceptualiser certaines déclarations de statements on the 'Abdu'l-Bahá sur l'évolution (par exemple,	'Abdu'l-Bahá's topic of evolution have

been the sub-
 sa déclaration selon laquelle « l'homme ject of some
 scrutiny—mostly by
 n'est pas un animal »). En utilisant cette Bahá'ís themselves, who
 have tended
 approche, l'auteur n'a pas l'intention de to either read these as an
 endorsement
 réinterpréter les déclarations de 'Abdu'l-
 of a position that seems to be at odds
 Bahá, ni de « prouver » une interprétation
 with established scientific consensus,
 particulière de celles-ci, mais plutôt
 d'introduire des concepts modernes de la
 or as requiring careful interpretation
 biologie évolutive dans le discours bahá'í in order to show that they
 are, in fact,
 sur l'évolution. compatible with that
 consensus. In this
 paper, I offer a different approach by
 drawing on relatively recent develop-
 I ments in the methods used within evo-
 lutionary biology itself. When viewed
 Between 1904 and 1905, 'Abdu'l- through the lens of
 cladistics, the ap-
 Bahá gave a series of table talks on a parent tension between
 'Abdu'l-Bahá's
 number of subjects, published in 1908 statements and scientific truth
 reveals
 as Some Answered Questions. From itself to be more a matter of
 perspec-
 1910 to 1913, He traveled to Europe tive than a fundamental
 disjuncture in
 and North America, and gave many need of reconciliation.
 public talks on a wide range of is-
 S C
 sues. Again, many of these addresses
 P S
 were collected and published as The
 Promulgation of Universal Peace. One
 subject that He addressed in a number
 of these talks was human evolution. In On the subject of evolution,
 much has
 these talks, He challenged some of the been written by Bahá'í
 scholars over
 notions that were current at the time, the years.
 most notably that because man1 had
 In The Purpose of Physical
 Reality,
 descended directly from an ancestor of John S. Hatcher asserts that
 “the Bahá'í

other primates, the human being was, teachings reject the views of both therefore, merely an animal like any the creationists and the evolutionists other (Haeckel 6). ‘Abdu’l-Bahá states as their theories are commonly that man holds a distinct station in the presented.” Creation as a whole is eter- chain of life, and that this distinction nal, and evolution (cosmological, geo- logical, and biological) is the is spiritual rather than merely physical unfolding (Promulgation 262). of that creation (48–52).

Further, in Close Connections, Hatcher deduces from ‘Abdu’l-Bahá’s comments that 1 ‘Abdu’l-Bahá uses this term, as the transformation of human evolution others did at the time, to indicate humanity “occurs solely within a species or state, in general.

A New Perspective on Human Evolution 9

even though these stages of transformation may be radically different in complexity—implying the action of an invisible force. Moreover, this force appearance” (122). must possess the properties of life itself,

Anjam Khursheed, in Science and Religion: Towards the Restoration of including the higher consciousness of humans. From this, Hatcher concludes

an Ancient Harmony, asserts that the that this force must be divine. Bahá’í writings affirm evolution, but Following the thought of this earlier

that this evolution is divinely directed article, Hatcher held neo-Darwinian and not the outcome of blind chance theory to be based on the complete (88–92). randomness of both mutations and

In an article published in the Journal natural selection (a position no longer

of Bahá’í Studies, Craig Loehle presents held in modern evolutionary biolo-

the view that humans did not evolve ac- gy).² Resting on this assumption of cidentally, but according to God’s pur- total randomness, Hatcher attests that

pose, as “the unfolding of God’s Plan” neo-Darwinian theory is incapable of

(51). However, this planned unfolding explaining the

“complexification” of evolution (Epilogue). As in his article is not to be perceived in a Creationist sense as literally a step-by-step intervention by God, but rather as a gradual actualization of potentialities mediated by an evolutionary process according to natural law. He also develops the position that concept of human beings as a “special creation” (i.e., transcending other life forms) and yet emerging with other life forms through biological evolution. William S. Hatcher offers a cogent argument for the increased “complexification” of evolution as proof of the existence of God (“A Scientific Proof”). He starts with an analogy. The directedness of a falling object, which theoretically is free to move in any random direction, but which only moves in one direction—down—of the mutating base pair in a nucleotide sequence. As a force”—gravity—acting on the object. Similarly, evolution is generated by the random actions of mutation and natural selection, yet it, too, only moves in one “direction”—towards greater

of fifteen years prior, he argues for the existence of an “evolutionary divine in origin. Such a position verges on “intelligent design,” the theistic life holds evidence of purposeful creation that cannot be based on chance alone. However, as noted, Hatcher’s fundamental premise, that of the complete randomness of both mutation and natural selection, is by current research in

2 Modern evolutionary

serts that mutations, broadly speaking, are not entirely random in the statistical sense, but are shaped by adjacent probabilities—for example, the location of

rough analogy, the outcome of a die is not completely random in the statistical sense, but is limited or shaped by the number of sides of the die. This has important implications for

rectionality of evolution.

10 The Journal of Bahá'í Studies 35.4 2025

biology (Martincorena and Luscombe; that gathered the main statements of Gregory, “Understanding Natural ‘Abdu’l-Bahá regarding evolution, Selection”). and analyzed them in light of general In his 1993 book, *The Challenge of Bahá’u’lláh*, Gary Matthews seeks evolutionary concepts. They concluded that, although humans are biologically part of evolution, “man is much more than an animal,” being endowed with a spiritual reality not shared with animals. and ‘Abdu’l-Bahá’s statements on the uniqueness of the human station In a conference paper published in *Lights of Irfán*, Ian Kluge makes by arguing that the contradiction is no attempt to reconcile semantic: the emergence of the soul ‘Abdu’l-Bahá’s statements on evolution with constitutes a new “species” in a general, not biological, sense. He adds that scientific thought; on the contrary, he holds that they should be further research “may someday settle this issue” (109). stated, while waiting for scientific research and thinking to catch up. This Paul Lample, the compiler of Bahá’u’lláh’s *Teachings on Spiritual Reality*, states that the Bahá’í teachings precludes any nuanced interpretation of ‘Abdu’l-Bahá’s statements. support the scientific concept of evolution while rejecting that evolution In his master’s thesis, Salman Oskooi takes the position that operates solely by chance; evolution is Bahá’s statements on evolution ‘Abdu’l-essentially purposeful (101). He also must be taken simply at face asserts that ‘Abdu’l-Bahá’s statements value, and that,

regarding the uniqueness of the hu- since they are at odds with
current man station should not be interpreted evolutionary science,
‘Abdu’l-Bahá’s comments are simply wrong. Oskooi
to mean that humans emerged through a separate, parallel evolutionary does assert the infallibility of
‘Abdu’l- Bahá on spiritual matters, but
pathway. claims
In 2001, Keven Brown and Eberhard that this infallibility does not
extend to scientific or other subjects.
von Kitzing produced a monograph, However,
Evolution and Bahá’í Belief, that sys- Oskooi’s position is founded
on a let- ter written on behalf of Shoghi
tematically surveys the philosophical Effendi
Effendi (as opposed to strictly scientific) con- regarding his own infallibility as
be- ing confined to matters relating
cepts of evolution, both in Western (i.e., to the
European) and Eastern (i.e., Islamic) tra- Cause, which Oskooi extends to
apply to ‘Abdu’l-Bahá as well. In
ditions leading up to, and current with, contradic-
tion to this position, a
the time when ‘Abdu’l-Bahá made His tion to this position, a
letter on behalf of the Universal House of Justice
major comments related to evolution. to an
In 2003, Courosh Mehanian and individual believer states that this
lim- itation of infallibility does not
Stephen Friberg published an article apply
A New Perspective on Human Evolution 11
to ‘Abdu’l-Bahá (Universal House of modern evolutionary biology
into dia- logue with ‘Abdu’l-Bahá’s
Justice, Messages 545–46). statements
In 2023, Bryan Donaldson pub- on evolution. There are many ways to
lished a monograph, On the Originality accomplish this. I choose to
approach this subject through the path of
of Species, which propounds that phy-
‘Abdu’l-Bahá’s statement, “man is not logenetics and cladistics,
which have been foundational to
animal” (‘Abdu’l-Bahá, Promulgation

evolutionary bi-
 359) should be taken as literally true in ology since the 1960s (Henning),
 and
 a biological sense, and proposes that have since been well substantiated
 by
 this can be explained by a “parallel research as explained further in
 this
 evolution” by which humans evolved paper.
 separately from animals (including pri- In taking this new approach, my
 in-
 mates). Criticism of this position can tention is not to re-interpret the
 state-
 be found elsewhere (Perry). ments of ‘Abdu’l-Bahá, nor to
 “prove”
 Bahman Nadimi’s article “Bahá’í any particular interpretation
 of His
 View on Biological Evolution” posits statements, but rather to
 demonstrate
 that the evolution of humans did not how incorporating current
 evolution-
 start at the inception of life on Earth ary science enriches the discourse
 on
 but rather began with some unknown, this subject, which is at the nexus
 of
 specialized biological structure at a any discussion of one of the
 central
 later stage, suggesting that humans tenets of the Bahá’í Faith,
 that of the
 and animals evolved on completely harmony between science and
 religion.
 separate paths. There is no scientific
 evidence for this conjecture. P

T G B ’ S The premises of this paper are
 derived
 E from the overarching themes expound-
 ed by ‘Abdu’l-Bahá in His science- and
 For all the valuable perspectives found evolution-related talks, as
 identified by
 in this prior scholarship, these contri- Friberg and Mehanian. These
 premises
 butions all come from the perspective are:
 of the philosophy of evolution, not
 the science of evolutionary biology. 1. In terms of biological evo-
 Moreover, this discussion has been lution, humans have progressive-
 confined to Darwinian and neo-Dar- ly evolved from a simpler form
 winian concepts, which are rooted in (‘Abdu’l-Bahá, Some Answered
 Questions 210). This is

consistent

the nineteenth and twentieth centuries, and limited by the knowledge and understanding of those times. As we are now well into the twenty-first outward

century, the time has come to bring
12

The Journal of Bahá'í Studies 35.4 2025

evolution (223). This declaration comments

challenges the very concept, implicit in the mainstream scientific ear-discourse since Darwin, that what resolu-

it means to be human can be described in strictly taxonomic (i.e. 'Abdu'l-biological classification) terms. literal in

3. The feature that distinguishes humans from animals is not the evolutionary biological organism, but the human spirit, also referred to as the rational soul (241). This does not deny that genus Homo can prop-

an-erly be viewed as a taxon³ in tribe have

Hominini, family Hominidae, and im-order Primates, but it challenges is

the notion that this classification fully explains what a human being is. In other words, the human is, but not simply, a primate.

AD D Originality

of Species, Bryan Donaldson holds Within the Bahá'í community at large, statement must

the questions and discussions regard-

with current evolutionary theory.

2. The essential nature of humans has always existed in potentiality, regardless of the

organismic form at any point of

Some of 'Abdu'l-Bahá's

on evolution have been seen as

matic, initiating attempts—as the

lier literature review shows—at

tion. For example, I draw the

attention to one statement by

Bahá that seems so directly

meaning that some feel challenged to understand it in light of

theory. Specifically:

The lost link of Darwinian theory is itself a proof that man is not

animal. How is it possible to

all the links present and that

portant link absent? Its absence

an indication that man has never been an animal. It will never be found. (Promulgation 355; emphasis added)

In his book, On the

the position that this

be taken in its most literal

sense, and
ing human evolution are not settled, therefore posits that human
evolution
nor must they be, nor even should they was parallel to, not colinear
with, pri-
be. The intersections of science and re- mate evolution. This goes against
over-
ligion will always be dynamic because whelming scientific evidence
(White et
they are subject to both changes in al.), and, although Donaldson
makes a
scientific theory and in human under- valiant effort to reinterpret
these find-
standing of scripture; in other words, ings, his effort ultimately fails
not only
the questions and discussions unfold as on evidence but on first
principles: the
our comprehension of reality evolves. concept that humans have always
been
human throughout evolutionary history

3 Taxon (plural taxa) is a general by reason of latent potential cannot
be
term for any group of organisms that bi- explained by parallel evolution
because
ologists classify together based on shared the problem of
instantiation—when
characteristics such as types of locomotion and how humans became human—re-
or reproduction. Species, genera, families, mains. The theory of parallel
human
and higher classifications are all examples evolution merely pushes the
problem
of taxa.

A New Perspective on Human Evolution

13

of instantiation back to an earlier, and
entirely speculative, time in evolution-
ary history (Perry).

W U
E R

For any ongoing discussion on the
subject of human evolution, the fol-
scientific-

There are several ways of viewing
evolution, all of which are

lowing excerpt from a letter written
scope

ly valid within the limits of the

on behalf of the Universal House of
they

and quality of the underlying data

Justice can be regarded as a grounding
restrictions

draw from and the inherent

statement:

of the analytic methods on which

they

are based. It is important to understand

The Bahá'í view of evolution of

is more complex and nuanced than that put forward today by those who present evolution and creation in dichotomous terms.

Evolution may be understood as the means set in motion by God through which life changes and unfolds. A Bahá'í can strive to the sci-

reconcile contemporary scientific views with the published state-

fact ments of 'Abdu'l-Bahá, which distinct

need not be understood to imply a kind of parallel evolution. Rather, 'Abdu'l-Bahá has explained that terminology

human life came into existence liter-

when the appropriate conditions were established. (5 July 2010) because it really is a phylogenetic tree

In the spirit of this statement, I seek to take a holistic approach to-

wards human evolution by viewing it outside through a different lens (as will be ex-

plained in this article) than has here-

is tofore been used in Bahá'í discussions evolu-

of evolution, one that may help us see and

'Abdu'l-Bahá's explanations as har-

'Abdu'l-Bahá's monious with mainstream scientific consensus.

discus-

sion of phylogenetics—the broad disci-

pline concerned with the evolutionary

that these different presentations

evolutionary data are not contradic- tory; rather, they view the same phe- nomena from different perspectives, and, therefore, are complementary.

With the exception of the naturalistic tree model commonly used in popular culture, all methods mentioned in this paper are fully accepted within

entific community. Different methods are chosen for varied reasons. The

that each of these is simply a

perspective that does not contradict other perspectives is evidenced by oc- casional variations in the

by which they are invoked in the

ature. A dendrogram, for example, may be referred to as a phylogenetic tree

viewed from a different perspective.

While variable terminology can occa- sionally be problematic for the

inquirer, it does not interfere

crucial point of this paper, which

that the findings of modern

tionary biology have a reciprocity

complementarity with

statements on evolution.

What follows, then, is a brief

relationships between organisms—in order to frame an exploration of two 1) is the distinct ways of presenting those relationships. The technical details in this convention, section are given to provide context for represents the overall point that two equally valid ancestor and accurate ways of looking at evolution can each highlight aspects of this descriptive phenomenon that the other obscures. arborizes according to divergent evolution, P with the point of divergence (called the node) being the most recent common ancestor (MRCA). The tree in figure 1, for instance, depicts the Greek phylon for “race” or “tribe” the three taxonomic domains (a domain being and geneia for “origin”) is the study the highest level category of the evolutionary relationships that classification of life): Bacteria, Archaea, and Eukaryota (or Eukarya). Each domain form the basis of taxonomic classification (Haque). First emerging in the contains a number of kingdoms—the mid-twentieth century, phylogenetics domain Eukaryota, for instance, now forms the core of evolutionary contains the kingdoms Protista (a term now being 4 Taxonomy (from the Greek taxis and used less formally), Fungi, Plantae, and Animalia. for “order” and nomos for “law”) is the While the first systematic discipline of naming life forms based on taxonomy, beginning with efforts at evolutionary relationships. The naming of Linneus, relied on visual appraisal of organisms is as old as language itself, but shared and

the systematization of biological naming different characteristics—
bats and birds, for example, both have
began with Carl Linnaeus in the eighteenth wings
century. Taxonomic hierarchies are based with homologous bone structures, but
on the range of evolutionary commonali- have completely different modes of
ties (i.e. biological characteristics), with species being the unit with the greatest
reproduction, and so we conclude that specificity for these characteristics. The
than bats are flying mammals rather
progression from most specific (the least birds—modern phylogenetics has
a wider range of ways to assess
commonality) to most general (the greatest how
organisms are related. In
commonality) is species -> genus -> fami- phenetic (i.e.,
addition to (Panchen 132–68)—physical
ly -> order -> class -> phylum -> kingdom morphological) data
-> domain. This hierarchical system makes traits such
taxonomy more than “a glorified form of as limbs, gills, and
feathers—a phylo- genetic tree can be generated
filing”; the taxonomic classification of an using ge-
organism expresses our current under- nomic (i.e. molecular) data
(Fuellen)— DNA, RNA, and protein sequence
standing (or theory) about its relationship to all other life (Gould 98).

A New Perspective on Human Evolution

15

homologies; behavioral data (MacLean Before proceeding, it is
worth not- ing that the contention
et al.)—migration, mating, etc.; and that a number
of perspectives on
statistical analysis (Gavryushkina et relationships are equally valid
evolutionary rela- tionships are equally valid
al.)—Bayesian inference, maximum does not
likelihood. The phylogenetic tree is mean that any method of
visualizing those relationships is valid.
a true and accurate representation
For ex- ample, in contrast to
of currently available scientific data phylogenetic

bearing on evolutionary relationships. trees, and to cladograms that we will
 However, it is only a qualitative (or at review later, the common image of a naturalistic tree to best semi-quantitative) representation, represent evolution and new data can sometimes lead to is misleading in important respects changes in the tree.⁵ (figure 2). The innate appeal of using

Figure 1. Phylogenetic Tree of Life (after <https://www.greennature.ca/tree-of-life/>)

5 For example, it was long disput- a naturalistic tree to describe evolution ed whether the giant panda is most close- is understandable. The “tree of life” ly related to raccoons or bears, due to its concept predates Darwin, and a con- sharing morphological characteristics with temporary of Darwin, Ernst Haeckel, used a naturalistic tree to both. Only once genomic data was avail- describe evo- able was it determined that the giant panda lution as it was then understood. It has remained a popular image ever is, in fact, a true bear. Interestingly, genom- since, and is what is commonly ic data also showed that the red panda was envisioned when thinking of evolution. not in fact a close relative of the giant pan- However, this representation is not da, despite their geographical proximity used in the scientific community. The and several shared morphological features naturalistic (O’Brien et al.).

tree image obscures and misrepresents For one, the trunk’s ramification into thinner and thinner actual evolutionary features and rela- branches—in the manner of a natural tionships in ways that a true phyloge- tree—falsely im- plies some kind of diminution, tree does not. For example, in fig- as of biological information or ure 2, the placement of Protista at the

complexity, roots of the tree is problematic. To the true. It also layperson, this placement would seem if a later to suggest that all other life evolved from an from Protista, when in actuality all forms of modern members of Protista share a properties. common ancestor (LUCA) with the shown in rest of living organisms. The figure evolutionary gives no position for LUCA, but if it be- did, it would have to be at some point of the thick trunk—which would fur- tree to pres- ther confuse the layperson, for whom good exam- the tree image intuitively suggests a data linear progression from roots to trunk in this to branches. The use of a literal tree perceive image presents further difficulties.

when in fact the opposite is falsely implies derivation, as form of life is merely derived earlier form, when in fact new life can emerge with novel

Finally, the naturalistic tree figure 2 obscures the true pathways of, and relationships tween, taxa.

The use of a naturalistic ent scientific findings is a ple of how the way we represent can profoundly influence—and case, impair—what we can about the data.

Figure 2. Evolution depicted as a naturalistic tree

(after

<https://earthsky.org/earth/new-tree-of-life-doesnt-look-as-you-d-imagine/>)

A New Perspective on Human Evolution

17

D the most recent common ancestor of agnathans (jawless vertebrates) and Returning to actual scientific practice, phylogenetic trees can be represented common in diagrammatic form as dendrograms placental to visualize evolutionary relationships more easily. In figure 3, taxa belonging “distance.” to the phylum Chordata are mapped according to their evolutionary rela- each

Gnathostomata (jawed vertebrates) lived before the most recent

ancestor of marsupial and mammals. The vertical axis loosely represents evolutionary

Thus, marsupial and placental mam- mals are more closely related to

tionships using data, both quantitative (genomic information, carbon dating to determine the age of fossils, etc.) and qualitative (observed phenetic similarities and differences, etc.). The horizontal axis loosely represents evolutionary time, meaning that nodes further towards the left of the dendrogram represent a branching-off between lineages that occurred earlier in time than those further to the right. Thus, other than either is to frogs.

T P E
“P ”

Dendrograms, if constructed to a sound underlying data set, are one valid way of visualizing evolutionary relationships, and are useful for a number of purposes. If they are the only lens we use for this purpose,

Figure 3. Simple evolutionary dendrogram
(after <https://www.instituteofcaninebiology.org/how-to-read-a-dendrogram.html>)
18 The Journal of Bahá'í Studies 35.4 2025

however, we may draw inferences as a byproduct of mindless adaptation. However, there is no scientific basis for this tenet. It is what Richard DeWitt refers to as a philosophical/conceptual “fact” as opposed to an empirical fact; the former are commonly mistaken for the latter even by scientists. Consider one of the recurring themes in the statements of ‘Abdu’l-Bahá: the directionality and hierarchy of evolution from simpler to more complex organisms, from “lower” to “higher” forms of life, and teleology and progress are terms banned from the literature in evolutionary biology (Kadykalo). Yet it is undeniable that life has evolved especially the station of human beings from simplicity to higher and higher orders in the order of life; see, for example, orders

“Evolution and the Existence of Man” of complexity in both
functionality and capacity (Lipps et al.). This
(Some Answered Questions 220–27). progressive complexity is, of course,
progressive complexity is, of course,
This is contrary to the received opinion captured
of most evolutionary biologists now in the underlying data upon which
evo- lutionary trees are based; however,
active in the field. Thus, any explorationary trees are based; however,
the way these data are presented
tion of ‘Abdu’l-Bahá’s statements on minimizes or even obscures this
minimizes or even obscures this
evolution must address this issue. phenomenon.
phenomenon.
Although scientifically correct and For example, dendrograms generally
useful for charting evolutionary path- only show evolutionary
relationships; information about organismal form
ways, dendrograms, like most evolu- and function is entirely missing. A
tionary tree models, tend to obscure one dendrogram is, of course, not
important aspect of evolution: the pro- because of this omission; it simply
incomplete progressive emergence of higher orders of fo- cuses on only one aspect of
incomplete progressive emergence of higher orders of fo- cuses on only one aspect of
life, and the evolutionary relationships evolution.
life, and the evolutionary relationships evolution.
based on this emergence. The current A mathematical equivalent of this
dogma holds that, because much (but operation is to plot the
1-dimensional scalar of a 3-dimensional vector.
not all) evolution occurs by chance The scalar can only reflect one aspect
The scalar can only reflect one aspect
mutation and natural selection, it must of the
of the vector, thereby concealing the
be purposeless, and, therefore, direc- deeper,
deeper, richer information of the vector
tionless. By extension of this position, itself.
itself.
a popular tenet is that biological evolu- In a comparable manner, this
dendro- gram shows no increasing
tion does not advance, it merely chang- complexity;
gram shows no increasing
complexity; indeed, no “progress” at all.
es.6 Increasing biological complexity, Every map or model, of course,
though not denied, is simply dismissed must simplify the reality that it seeks
Every map or model, of course,
must simplify the reality that it seeks to explain. A political map of the
to explain. A political map of the
6 I personally have heard a pro- globe omits topographical features;
globe omits topographical features;
if we want to know where the high
“Humans are no more advanced than amoe-

and

bas, they just occupy different niches.”

A New Perspective on Human Evolution

19

low points of the earth are found, we called synapomorphies, a term that we need a topographical map. This paper will return to later). therefore now turns to a different kind Though traditionally based on phe- netics (observable of “map” of evolutionary relationships: similarities), which is a relatively simple methodology, modern cladistics, which can be used the apparent evolutionary to visualize the statements of ‘Abdu’l- relationships identified by cladistics can be Bahá regarding biological hierarchy, verified with molecular data (Mavrodiev and and thus help to reconcile (though not re-interpret) His statements with a Madorsky), fossil records (Cracraft), ethological studies (Fentress), and modern scientific perspective. by advanced statistical (Huelsenbeck, C Ronquist, et al.) and computational (Brooks et al.) methods. Data acquired To bring twenty-first century evolutionary biology into dialogue with by separate, complementary methods increas- allow clades to be defined with ‘Abdu’l-Bahá’s statements on evolu- ing rigor (Faith and Cranston). As with all scientific tion, we turn to the field of cladistics, methodolo- gies, cladistics has which did not exist in ‘Abdu’l-Bahá’s strengths and weak- nesses. While these are summarized day. The term was coined in the 1950s in Appendix A, for our purposes one and cladistics was established as a sub- particular strength stands out: discipline of biology by the 1960s. cladis- tics is particularly good at Cladistics offers a different way visualizing evolutionary history in terms of of viewing evolution (Williams and phe- netics and evolutionary development Ebach), and can be described as a (Harrison). In other words, it method of systematic classification helps us identify when something new has within phylogenetics. It operates by appeared through the processes of arranging taxa into groups, called

clades. A clade consists of all taxa that share particular features in common, to the exclusion of all other taxa. For example, Gnathostomes are jawed fish (and their descendants) that diverged from Agnatha, which are jawless chordates such as lampreys. All subsequently evolved creatures with jaws, including all tetrapods (vertebrates with four limbs), are grouped into the clade Gnathostomata, while Agnatha are excluded from this clade. (The shared features that constitute clades—jaws in this example—are particular

20

The Journal of Bahá'í Studies 35.4 2025

cladogram. As we follow the diagram in- up from the root, we find “internal nodes”—bifurcations that represent visual- speciation events and common an- consid- cestors for subsequent (i.e. above the most node) divergent evolutionary lines. Taxa—which can represent individual lampreys species or larger taxonomic groups (i.e., Lacertillia). clades)—are represented by “terminal last com- nodes” (such as the letters A through F taxa; for in figure 4). The evolutionary lineage node of a given taxon is thus represented by ancestor

evolution.

C

Cladograms are visual of cladistics. They are diagrams map clades, primarily on morphogenesis. The diagrammatic structure of cladogram represents both the evolutionary lineage and relatedness taxa (figure 4). The “root” the most recent common ancestor for all the taxa included in a

evolutionary relationships of the group (Huelsenbeck, Bollback, et al.). To see how cladograms can ize evolutionary relationships, er figure 5. Here, the root is the recent common ancestor for all the shown in the figure, from (Petromyzon) to lizards Internal nodes indicate the mon ancestor for subgroups of example, the rightmost internal represents the last common

the straight lines connecting a terminal taxa node back to the root. Taxa sharing the same most recent common ancestor are identified as sister taxa. An outgroup is a species or group of species that is closely related to, but not part of, the other taxa being studied (the ingroup). The function of the outgroup is to serve as a reference point for determining the

for lizards and birds (Aves). The (terminal nodes) in this diagram are clades representing many species. A cladogram allows us to see that birds are more closely related to lizards than to lampreys. The validity of any cladogram to depict these relationships is, of course, dependent on the data used to construct the cladogram.

Figure 4. Basic cladogram structure
A New Perspective on Human Evolution

Before proceeding further, it is important to take in some cautionary considerations for using cladograms as representational tools of evolution (Gregory, “Understanding Evolutionary Trees”). First, it is most important to understand It is cladogram topology. Any internal node can be rotated 180° without changing the ultimate the topology of the cladogram. For the cladogram example, in Figure 6, the cladogram on the left (figure 6A) is equivalent to the cladogram on the right (figure 6B). Visually, the internal node for sister taxa E and F (EF) and taxon D, which we

and divergent nodes are still What’s important to note the long “main line” of the represents the direct for whichever particular at the rightmost terminal node. quite natural for the viewer to this node, and its taxon, the “destination” and focus of gram. However, because nodes can rotated about their vertical changing the topology of the gram, there is no singular main the choice of which taxon is

situated
 will call clade D(EF), has been rotated
 whoever
 180° about its vertical axis. The left-
 cladogram
 to-right order of the taxa was changed
 of the
 from A-B-C-D-E-F (figure 6A) to
 terminus of
 A-B-C-F-E-D (figure 6B). This gives
 demonstrated in
 the appearance that the evolutionary
 terminus
 relationships of the taxa have changed,
 and taxon
 but they have not: when traced in the
 line in
 cladogram, the evolutionary pathways

on the main line is made by
 creates the cladogram. The
 can be rearranged such that any
 included taxa can be the
 the main line. This is
 figure 6, where taxon F is the
 of the main line in figure 6A,
 D is the terminus of the main
 figure 6B.

Figure 5. Simple cladogram of vertebrates
 (after <https://biologydictionary.net/cladogram/>)

This is not an inherent weakness
 of the cladogram as a representation-
 the struc-
 al model; on the contrary, it shows the
 cladograms, we
 ability of the model to represent the
 applications in
 underlying data more clearly, depend-
 understand-
 ing on subject focus. Indeed, while the
 defined by
 same evolutionary pathways depicted
 (synapo-
 in cladograms are also present in den-
 common.
 drograms and other phylogenetic trees,
 clado-
 they can be obscured by the visual ar-
 of fish,
 borization, the structural complexity,
 develop
 of these models. In cladograms, not
 synapomor-
 only are these pathways readily appar-
 clade

is an immutable backbone.
 Having been introduced to
 ture and properties of
 can now explore their
 biology by expanding our
 ing of clades. Clades are
 particular identifying features
 morphies) that taxa have in
 For example, as shown in the
 gram in figure 7, the embryos
 lizards, rabbits, and humans
 within amniotic sacs (a
 phy), and thus belong to the

ent, but by transposing taxa along the vertical axis at the proper nodes, the synapto-direct lineage of any taxon of interest lampreys; can be easily visualized. Again, these Vertebrata manipulations do not modify the underlying scientific empirical facts in any way, any more than looking at a sculpture from different angles changes the sculpture itself. However, the viewer needs to be aware of this “polymorphic” property, or they could be misled into thinking that the main line

Amniota. All of these creatures a vertebral column (another morphology), as do lancelets and thus, all belong to the clade Amniota. However, lancelets and lampreys not have amniotic sacs, and so are excluded from the clade Amniota. Also that the clade Amniota is the clade Vertebrata, i.e., all members of clade Amniota are also clade Vertebrata, but not all are amniotes.

Figure 6. Cladogram equivalence. In panel B, taxa D-E-F have been rotated 180° to appear as F-E-D, yet the topology—and, therefore, the evolutionary relationship it represents, is unchanged.

Figure 7. Cladogram with two clades (after

https://bio.libretexts.org/workbench/general_ecology_ecology/chapter_7%3a_the_history_of_life_systematics_and_phylogeny/7.7%3a_phylogeny_and_cladistics)

Figure 8 depicts a wider spectrum evolutionary line for a particular taxon,

cladogram with more examples of how synapomorphies and clades. It demonstrates several notable characteristics perhaps of cladograms in general: 1) By convention, evolution (the development of taxa with new adaptive features) is depicted as proceeding from left to right.

the selection of which depends on the cladogram is configured. This last characteristic is the most important for the purposes of this paper, which deals with evolution. Recall that what appears to be the main line is entirely

dependent

2) The main line has a positive slope to on how we “rotate” the taxa and clades indicate, vaguely at least, the passage in a cladogram, the topology of which of evolutionary time. 3) The horizontal distance between taxa qualitatively is determined by true evolutionary relationships based on scientific data, reflects their evolutionary distance and remains unchanged in that cladogram no matter how we view it. (biological difference). 4) The emergence of synapomorphies gives rise to a subtle but profound distinction that will be developed in the rest of this paper. 5) As evolution continues, specialization and complexity tend to increase and, therefore, the resulting cladograms is that, because they are based on the appearance of evolving features, evolutionary progress in complexity and functionality can be easily included. However, there are many exceptions to this, and this characteristic should be taken as phenomenological. 6) The main line shows the direct among systematic biologists who hold

24

The Journal of Bahá'í Studies 35.4 2025

Figure 8. Broad spectrum cladogram with labeled synapomorphies and clades (after <https://srsscience.weebly.com/cladograms--dichotomous-key.html>)

what has become a central dogma in biocomplexity than their green algal evolutionary biology: that evolution ancestors by having specialized multi-cellular structures such as roots, stems, leaves, and flowers, which enable this viewpoint is that one form of life is advanced nutrient transport, reproduction, and environmental adaptation. They not more “evolved” than another form also possess advanced genetic They of life. Taken to its logical extreme,

regula-
paramecia are just as “advanced” as relationships
humans. Thus, any cladogram that increased
purports to show evolutionary progress evolution-
is considered to be anthropocentric each
(Sandvik). Yet, undeniably, evolution-
synapomorphy
ary progress does occur, in the form of that demarcates a clade. For
example,
emerging biocomplexity (Zhang). One the evolution of multicellular
embryos,
need not invoke any kind of teleology a synapomorphy that is the
hallmark
to accept this fact; it is due to entire- of land plants, places plants
ranging
ly natural, evolutionary mechanisms from liverworts to angiosperms in
the
(Lenski et al.). clade Embryophyta (Lecointre and
To give an example of how clado- Le Guyader 175). In a similar man-
grams can clearly reveal the emergence ner, evolution of vascular tissue
led to
of increasing biocomplexity in evolu- plants belonging to the clade
Vasculata,
tion, we can examine a cladogram of and the evolution of seeds gave
rise to
land plants (figure 9). This cladogram the clade Spermatophyta. In this
clado-
shows some of the evolutionary steps gram, the evolutionary
“progress” of
leading to the emergence of angio- plants from simple green algae to
bio-
sperms from a green algal evolutionary logically advanced angiosperms can
be
ancestor. Angiosperms exhibit greater easily seen.

Figure 9. Cladogram of plant evolution (after
[https://www.bartleby.com/solution-answer/
chapter-27-problem-15tyu-biology-mindtap-course-list-11th-edition/9781337392938
/
evaluate-and-synthesize-15-interpret-data-according-to-the-cladogram-in-figure-
27-5-
which-plants/f02fcaab-560e-11e9-8385-02ee952b546e\)](https://www.bartleby.com/solution-answer/chapter-27-problem-15tyu-biology-mindtap-course-list-11th-edition/9781337392938/)

U C (pathways and emergence) that are
 less
 U H E apparent with other methods
 (Ashlock).
 Although it can be argued that there is
 As a representational tool, cladograms an inherent anthropocentrism in
 the
 offer a different—and, as far as I can tell use of cladograms,
 nevertheless we can
 from my review of the Bahá'í-related apply this method of viewing
 of human
 literature, heretofore unexplored—way evolution if we keep the proper
 use of
 of visualizing 'Abdu'l-Bahá's state- cladograms, described
 above, in mind.
 ments on evolution. I emphasize here We begin with figure 10, which
 that viewing these statements through shows a cladogram of human-related
 a cladistic lens is not re-interpreting synapomorphies (indicated by
 dotted
 scientific facts, not proposing a new lines). In this figure, the term
 pleiso-
 theory of evolution, not discarding morphies refers to ancestral
 traits not
 other representations of evolution shared with humans; synapomorphies
 such as phylogenetic trees, and above refers to those traits shared with
 hu-
 all, not re-interpreting the statements mans. The more primitive synapo-
 of 'Abdu'l-Bahá. Viewing human morphies are lower in the
 cladogram.
 evolution by means of cladograms is Taxa sharing the same synapomorphy
 simply using a well-accepted method are in the same clade. For
 example, the
 to perceive evolutionary phenomena kangaroo, mouse, and human all
 have
 26 The Journal of Bahá'í Studies 35.4 2025
 hair, placing them in the “Hair” clade Some synapomorphies, from
 oppos-
 Mammalia; the kangaroo, however, able thumbs to bipedalism, that
 dis-
 though possessing a choriovitelline tinguish primate taxa into smaller
 and
 placenta, lacks the more developed smaller clades are labeled, but
 many
 chorioallantoic placenta (Themes), and more synapomorphies are not identi-
 thus does not belong to the “Placenta” fied. In customary practice,
 cladograms

clade Placentae. Although the cladogram shown in figure 10 is extremely simplified—indeed, simplistic, showing only a few evolutionary steps—the main line of this cladogram clearly shows the direct evolutionary path for acquiring more characteristics of the current human species, *Homo sapiens*. Focusing on the order Primates, the cladogram in figure 11 shows the development of humans within this order.

are simplified for the sake of illustrating general evolutionary relationships. Also not shown are the taxa that evolved after the advent of bipedalism (e.g. *H. erectus* and *H. heidelbergensis*) which belong in the genus *Homo* with *H. sapiens*. These taxa, modern humans, constitute their own clade. We will explore the implications of this in the concluding remarks.

Figure 10. Cladogram showing synapomorphies (after <https://rainbow.ldeo.columbia.edu/courses/v1001/cladogram1.html>)
A New Perspective on Human Evolution 27

Figure 11. Primate cladogram (after <https://www.pinterest.com/pin/leventozgul1970-adl-kullancnn-evolution-panosundaki-pin--623678248370219145/>)

U ‘A’ -B’ encompasses all things and as far
S L C as human capacity permits, dis-
covers their realities and becomes
Using the cladogram as a visualization aware of the properties and effects,
tool—not to prove anything, but to the characteristics and conditions
better comprehend evolutionary rela- of earthly things. (Some
Answered Questions 241)
tionships—we can now turn to some of the statements made by ‘Abdu’l-Bahá In approaching human evolution about human evolution. In so doing, from a Bahá’í perspective, the intention is not to advance a new the funda-
interpretation of His statements, but mental tenet is: humans are separate
rather to stimulate the reader to revisit from animals by reason of having ra-

and deepen their own understanding of tional souls. ‘Abdu’l-Bahá declares these statements. that

S O [T]he foremost degree of

compre-

hension in the world of nature is

The human spirit, which distin-

pow-

guishes man from the animal, is

the rational soul, and these two

terms—the human spirit and the

rational soul—designate one and

God, the

the same thing. This spirit, which

in the terminology of the philos-

oth-

ophers is called the rational soul,

28

The Journal of Bahá’í Studies 35.4 2025

of its nobility and distinction that of

it encompasses them all. (Some Answered Questions 250)

morphies appeared in human ances-

The defining feature of the human

being—the human essence, in the

‘Abdu’l-

sense that ‘Abdu’l-Bahá discusses it— structure,

is spiritual, not physical. This should

be borne in mind: while a cladogram

tetrapods

can clarify the nature of human be-

land,

ings’ biological relationship to animals

clade

in a way that helps us view some of

of

‘Abdu’l-Bahá’s statements on evo-

an animal

lution in a new light—as I hope to

Consider

demonstrate here—it does not directly

we can

speak to the core of ‘Abdu’l-Bahá’s ar-

amphibians,

gument, which focuses on the spiritual

that it is obscured by the structures

those models. The cladogram helps us see more clearly when specific synapo-

tors—including those synapomorphies alluded to in this statement by

Bahá, namely the vertebral

the development of four limbs with

bony digits that characterizes

and enabled vertebrates to live on

and bipedalism. As a distinct

in these cladograms, the question

whether the human being is

becomes essentially semantic.

that from a certain perspective,

call all tetrapods—all

reptiles, mammals, and

birds—fish,
essence of the human being. since their last common ancestor
with
modern fish was a creature we would
S T categorize as a fish or fish-like
creature.
However, the development of the de-
The forms assumed by the human fining tetrapod synapomorphy, and the
embryo in its successive changes further development of the synapomor-
do not prove that it is animal in its phies that characterize each of those
essential character. . . . Realizing animal groups, make it more mean-
this we may acknowledge the fact ingful in most contexts to call a
reptile
that at one time man was an in- a reptile, a mammal a mammal, etc.,
mate of the sea, at another period rather than thinking of them as
“fish.”
an invertebrate, then a vertebrate It is similarly reasonable to argue
that
and finally a human being stand- humans are both within Animalia and
ing erect. Though we admit these yet defined by distinguishing features
changes, we cannot say man is an that set them apart. And while some of
animal . . . (Promulgation 359) these are synapomorphies of the kind
considered by evolutionary biology
The straightforward meaning of this (morphological features such as
biped-
statement can be easily visualized by the alism and large brain size), the
most
main line depicting human evolution in distinguishing “synapomorphy”
from a
figures 10, 11, and 12. I re-emphasize Bahá’í perspective is the
actualization
that this direct lineage is also evidenced and appearance of the human
spirit. We
in phylogenetic trees and other rep- will examine this more closely in
the
resentations of human evolution, but concluding remarks.
A New Perspective on Human Evolution 29

Figure 12. Human evolutionary line from an ancestor common to other life forms
(after <https://www.pinterest.com/pin/189573465546096403/>)

S T in ‘Abdu’l-Bahá’s time. A
missing link
would imply direct descent from the
The lost link of Darwinian theory other primates: chimpanzees, gorillas,
is itself a proof that man is not an etc. Rather than a missing link,
humans
animal. How is it possible to have shared a MRCA at earlier points in

evo-
all the links present and that im- lutionary history with each of the
other
portant link absent? Its absence is primates shown in figure 13. This is a
an indication that man has never subtle but profound distinction.
Rather
been an animal. It will never be than “direct descent” as it was
under-
found. (Promulgation 359). stood in ‘Abdu’l-Bahá’s time,
what
really occurred was successive diver-
Figure 13 is a simplified primate gence: the splitting off of
preceeding
cladogram showing the evolutionary taxa over time. The notion of a
“miss-
relationships between humans and oth- ing link” has been dismissed in
modern
er primates. The bifurcations along the evolutionary biology (Williams and
backbone indicate the points at which Ebach 1), just as
‘Abdu’l-Bahá predict-
other primates diverged from the hu- ed that it would be.
man evolutionary line. Each node of Now, what of the evolutionary
line
these bifurcations represents the most prior to each of the MRCAs shown
recent common ancestor (MRCA) of in figure 13? We may consider some
all clades above the node. The clado- of these evolutionary predecessors
gram clearly shows that, indeed, there as having the potential of
evolving
is no “missing link” in the sense held into higher organisms, even
though

in actual form and function these from the chemical combination of
hy-
predecessors possessed none of the drogen and oxygen.
outward characteristics of the higher This concept can be applied
to the
organisms. This potentiality is indi- emergence of humans, although in
this
cated ipso facto by the subsequent case the emergence is more
gradual
emergence of more advanced spe- and, therefore, not as obvious
at any
cies. A mystery of the phenomenon given step. This potential for
emer-
of emergence is that the properties of gence existed in the
evolutionary line

an emergent entity, whether physical (e.g., a mineral) or biological (e.g., a species) are not found in its predecessors; in other words, the predecessor entities will not themselves display the newly emergent properties. To use the mind, a physicochemical example, a molecule of water, H₂O, is composed of two atoms of hydrogen and one atom of oxygen, yet neither elemental hydrogen nor oxygen have any of the physical properties of water: its fluidity, viscosity, boiling point, etc. The potential characteristics of water are only realized when water “emerges”

preceding the MRCAs of humans, chimpanzees, and other primates. ‘Abdu’l-Bahá alludes to this emergence when He states, “from the beginning the embryo possesses all faculties, such as the spirit, sight, smell, and taste—in a word, all the powers—but they are latent and become apparent only gradually” (Some Answered Questions 229). The gradual emergence of the human line with the successive divergence subsequent MRCA supports the concept of the potentiality of evolutionary deep time.

Figure 13. Simplified primate cladogram (after

https://www.researchgate.net/figure/cladogram-depicting-the-phylogenetic-relations-among-seven-primates-adapted-from_fig1_279854352)

A New Perspective on Human Evolution

31

There is, of course, a point in evolutionary history when early humans (in biology, hominins) physically appeared on the earth. This appearance may be considered an inflection point between human “potentiality” and human “actuality” in the evolutionary sense used here. This biological emergence that

S F
[T]he antecedence of animals man is not a proof that the of the human species was or transformed or that man from the animal kingdom. long as it is acknowledged

gence conceivably could have been ap-
 after the divergence of the last primate/
 that human MRCA. This would be in ac-
 cord with a statement of ‘Abdu’l-Bahá
 observe that “...it is possible that man simply
 that the came into existence after the animal”
 not ap- (Some Answered Questions 221).
 contrary, This concept is developed further in
 season Statement Four. priority is not
 a proof that the later fruit of one
 tree was produced from the earlier
 fruit of another. (Some Answered
 Questions 221)

these different beings have
 peared in time, it is possible
 man simply came into existence
 after the animal. Thus we
 in the vegetable kingdom
 fruits of different trees do
 pear all at once; on the
 some appear earlier in the
 and others later. This

Figure 14. Cladogram showing evolutionary divergence between humans and other
 primates (Ma = megaannum = millions of years ago) (after
[https://www.researchgate.net/
 figure/phylogenetic-tree-of-primates-cladogram-showing-the-evolutionary-diverge-
 nce-
 between_fig1_336892351](https://www.researchgate.net/figure/phylogenetic-tree-of-primates-cladogram-showing-the-evolutionary-diverge-

 nce-between_fig1_336892351))

32 The Journal of Bahá’í Studies 35.4 2025

The cladograms shown in figures all past and present existing entities
 in 11, 12, 13, and 14 express this phe- the physical creation are
 “fruits” of the nomenon. To see this, it is important one “tree” of creation—and
 consonant to note that each of the non-human with Statement Four, the prior
 appear- groups (chimpanzees, gorillas, etc.) ance of these “fruits” is not a
 proof did not appear at the evolutionary time that the later fruit of one tree
 was pro- of the related MRCA; these groups duced from the earlier fruit of
 another: gradually evolved into their present humans did not directly descend
 from state just as humans did. (This is why, chimpanzees, monkeys, or
 prosimians.

for example, it is incorrect to say that “humans descended from chimpanzees”; rather, both chimpanzees and humans evolved from a MRCA.) Thus, bore the topmost horizontal row of each cladogram represents the “fruits” of and trans- the different evolutionary “trees” (i.e., statement the different evolutionary pathways transformation shown in the cladograms). For exam- be ple, the cladogram in Figure 14 clear- trans- ly shows that prosimians represent an embryo “earlier fruit” appearing earlier in the its full evolutionary “season” from a “differ- maturity, as was ent tree.”(The cladogram in Figure 14 ex- may appear as a single tree, but this is once only because each evolutionary path- tail: way for chimpanzees, gorillas, etc. is is simplified to a single line; if mapped at the a higher resolution that included more evolutionary ancestors and their tax- onomic branches, each line in Figure 14 would appear as a tree in its own from right.) Alternatively, ‘Abdu’l-Bahá’s to a dis- statement makes sense if we consid- er the “main line” of Figure 14 to be like the soil from which a number of trees (portrayed as simple lines in the par- cladogram) grew, with each species in those trees being “fruits.” This in no recapitulates phy-

S F

Let us suppose that man once a resemblance to the animal and that he has since evolved formed. Accepting this does not prove the of species, but could instead likened to the changes and formations that the human undergoes before reaching development and earlier mentioned. To be more plicit, let us suppose that man walked on all fours or had a This change and transformation similar to that of the fetus in womb of the mother. Even though the fetus develops and evolves in every possible way before it reaches its full development, the beginning it belongs tinct species. (Some Answered Questions 223) Here, ‘Abdu’l-Bahá draws a allel between human embryogenesis, wherein “ontogeny

way contradicts, or is contradicted by, logeny”⁷ and human phylogenesis.

In

other statements in the Writings that all of creation is essentially one—clearly,

7 The concept that “ontogeny A New Perspective on Human Evolution

the long evolutionary history leading to the appearance of species Homo

manifesting sapiens, humans have always been hu-

soul.

man in potentiality. A human embryo is always human regardless of how it

: may transiently appear in utero. It takes ?

time for the embryo to develop into a baby to enter the extrauterine world.

interpretations In similar fashion, it took time for hu- of

man form and capacity to be realized in on human

the natural world, allowing the human funda-

spirit, the rational soul, to manifest. formulat-

The MRCA of humans and any other species—be it chimpanzee, go- page of

rilla, or shark—gave rise to divergent we must

lineages through its offspring, one eventually leading to humans and the

other to another species. While this ancestor was not human in the taxo- far as

onomic sense, it can be metaphorically events

viewed as an embryonic stage in hu- insulated

manity’s development, representing power, ex-

a form oriented toward the eventual but by

a cladogram—culminating in a

ical structure capable of

the human spirit or rational

C R

A H S C

Stepping back from all

and speculations on the meaning

‘Abdu’l-Bahá’s statements

evolution, there is, I believe, a

mental grounding principle,

ed by William Whewell and quoted by Darwin himself in the preface

On the Origin of Species, that

keep in mind:

But with regard to the material world, we can at least go so

this—we can perceive that

are brought about not by

interpositions of Divine

erted in each particular case,

emergence of human-specific traits. laws. This perspective rejects the notion of a separate, non-animal lineage evolving into humans, and instead affirms that the human form arose from a continuous line of “proto-human” ancestors—traceable along the backbone of God (‘Abdu’l-Bahá, Promulgation recapitulates phylogeny” was first formulated by Étienne Serres in the 1820s, based on the work of Johann Friedrich Meckel, and that and is known as the Meckel-Serres Law. Moreover, (Dupont). Championed by Ernst Haeckel in his *General Morphology of Organisms* in 1866, it was widely accepted up through the time of ‘Abdu’l-Bahá’s statements. Since then, this concept has been largely discredited (Linhard). However, the point that ‘Abdu’l-Bahá was making still applies.

34 The Journal of Bahá’í Studies 35.4 2025

the establishment of general laws. Bahá’ís are in full agreement with this statement. The fundamental principle in Bahá’í belief is that the universe, together with its physical laws, were created by God (462–63). They believe that the world and its laws are the manifestations of God’s creative power, and that nature reflects God’s will. Bahá’ís understand that reality is not a fixed and static creation, but a dynamic and ongoing emanation from God, who sustains it by His will: God the Creator is God the Creating (J. Hatcher, Purpose 48).

Bahá’ís accept that evolution operates about the thing that it represents, we can say that when given the necessary data and when properly applied, natural laws that never deviate from clado-grams can clearly reveal emergent their course; science can therefore investigate these universal laws without biocomplexity and the evolutionary need of invoking divine “tinkering” in pathways of any species, genus, fam-

a mechanistic sense. Based on these premises, we can infer that human evolution is coherent and compatible with scientific investigation—it can be fully explained by natural mechanisms, both deterministic and stochastic—and yet still is purposeful and progressive, and reveals the signs of God. Yet the central dogma of current biology is that evolution is purposeless and directionless, that progressive evolution is an illusion, that there is no hierarchical order to life, and—especially—that humankind occupies no special station in life (Kadykalo). Cladograms cannot disprove this belief—or any philosophical interpretation of evolution, theistic or atheistic. Indeed, in spite of their having been criticized as being inherently anthropocentric, introducing an unintended bias in their presentation (Sandvik), we have seen that a cladogram can be arranged so as to give the unwary reader the appearance that any species—from the human to the H. he-

ily, order, etc., efflorescing majestic diversity of Homo sapiens. Returning to the definition of a clade: a group of taxa that 1) share a common ancestor, and, therefore, have an exclusive evolutionary history; and 2) possess one or more characteristics composed of traits, and functional molecular to organismal levels. Clades are established by genetics and molecular studies, paleobiology, systematic morphology, and ethology. Thus, cladistics grounded in scientific research is current, rigorous, and well used. This grounding allows us to use cladistics as a valid technique to help us consider human evolution in light of ‘Abdu’l-Bahá’s subject. Archaic species of genus Homo evolved after the advent of include H. habilis, H. erectus,

hagfish—was the main driving purpose
 neanderthalensis, and
 of evolution. So what can cladograms
 sapiens,
 do, and why have I suggested that they
 tribe
 can help reveal that the apparent ten-
 sion between some of ‘Abdu’l-Bahá’s
 and mod-
 statements on evolution and contempo-
 in
 rary science is illusory?
 Remembering that every model
 subtribe
 or map has a particular function, and
 draws out a particular, partial truth
 lived

A New Perspective on Human Evolution

at least five, and perhaps as early as
 seven, million years ago (Tocheri et
 might
 al.).

Within this taxonomic structure,
 genus Homo could be assigned to
 its own clade based on these estab-
 A A–S
 lished synapomorphies: bipedalism
 W C
 (Leutenegger), genetic homology
 (Coleman), a significantly larger cra-
 include
 nial capacity (Stanyon et al.), com-
 plex linguistics (Tattersall; Corballis),
 and culture formation employing fire,
 evolutionary
 tools, and art (Lake). Current scientif-
 ic evidence suggests that differences
 meth-
 in mental abilities between apes and
 humans are gradual (Penny). This is
 data

consistent with evolutionary develop-
 ment as a whole: ethological studies
 repeatedly demonstrate rudimentary
 thought and feeling in lower mam-
 mals, suggesting that this distinction is

delbergensis, H.

H. floresiensis. Along with H.

these taxa are assigned to the

Hominini, which includes chimpan-
 zees and bonobos. Archaic

ern humans are further classified

subtribe Hominina, and chimpanzees
 and bonobos are classified in

Panina, genus Pan. The last common
 ancestor between Pan and Homo

Answered Questions 250). An appro-
 priate designation for this clade

be: Rationalis.

Some advantages of cladistics

(Ashlock):

1. It is grounded in

theory and is complementary to,
 not incompatible with, other

odologies in phylogenetics.

2. It is based on empirical

with diverse properties, obtained
 from separate methods and sourc-
 es, which improves classification
 validity.

3. It is quite useful for

studying

in degree, not kind. Others, however, such as the biological anthropologist and linguist Terrence Deacon, see this in a different light. In Deacon's words, at vi-

"Biologically, we are just another ape. in

Mentally, we are a new phylum of organisms" (23). In biological taxonomy, Phylum is a classification rank positioned just below Kingdom, representing an advantage

ing a significantly different evolutionary approach

ary category (Williams and Ebach 31). general

For humans, therefore, perhaps a evolution

more exclusive clade could be derived this

based on the one "synapomorphy" that higher

is unique, 'Abdu'l-Bahá attests, among communities, lay

the entire range of life: the rational soul, which He describes as possessing moral will and a consciousness

on

capable of transcending nature and is clas-

perceiving the Light of God (Some emphasis). In

36 The Journal of Bahá'í Studies 35.4 2025

biology, classification in general can Univer-

be problematic for several reasons that apply to cladistics:

Bahá'í

Publishing Trust, 1982.

1. Cladistics isn't well suited to accommodate reticulate evolution

(Sneath), i.e., evolution that occurs from the lateral exchange of

genetic information by horizon-

evolutionary relationships in all the major specialties of biology from botany to zoology.

4. It is particularly good

sualizing evolutionary history

terms of phenetics and evolutionary development (Harrison).

Taken collectively, these

es make cladistics an ideal

to understanding evolution in

and, for our interests, human

in particular. More importantly,

approach offers a platform for

discourse with wider

and scientific alike.

David Williams and Malte Ebach, co-authors of the standard textbook

cladistics have said, "cladistics

sification" (403, original

———. The Promulgation of

sal Peace. Edited by Howard

MacNutt, 2nd ed., US

Arnold, Brian J., et al. "Horizontal

Gene Transfer and Adaptive Evolution in Bacteria."

Reviews Microbiology, vol.

20, no. 4, Apr. 2022, pp.

tal gene transfer, etc. (Belal and
doi.org/10.1038/s41579-

Heath). Horizontal gene transfer
can occur in bacteria, for example,
Cladis-

by generalized transduction from
Ecol-

viral infection (Arnold et al.).

2. Cladistics is better at incor-
porating some types of data than
others. For example, it is not an
ideal classification system for fos-
sil records that are incomplete and
lacking information about evolu-
tionary relationships (Grantham).

3. Cladistics can be restrictive,
limiting the inclusion of subtly di-
verse taxa (Christoffersen). This is
r n a l .

a criticism of taxonomy in general.

Brooks, Daniel R., et al. “Charac-
Cladistics is focused on the classi-
fication of known taxa rather than the
Prac-

discovery of unknown taxa (Williams
and Ebach 396). This is not a disadvan-
tage per se, it merely reflects the focus
of any classification methodology.

Berlin Heidelberg, 2005, pp.

37–51. doi.org/10.1007/978-3-

W C 540-30557-6_5.

Brown, Keven, and Eberhard von

‘Abdu’l-Bahá. Some Answered Ques-
Bahá’í

tions. Edited by Laura Drey-

fus-Barney, Newly revised

ed., Bahá’í World Centre,

2014.

2001.

A New Perspective on Human Evolution

18.

021-00650-4.

Ashlock, Peter D. “The Uses of

tics.” Annual Review of

ogy and Systematics, vol. 5,

1974, pp. 81–99.

Belal, Nahla A., and Lenwood S.

Heath. “A Complete Theoret-

ical Framework for Inferring

Horizontal Gene Transfers

Using Partial Order Sets.”

PLOS ONE, edited by Vladi-

mir Makarenkov, vol. 18, no.

3, Mar. 2023, p. e0281824.

doi.org/10.1371/jou

pone.0281824.

ter-Based Cladistics and An-
swer Set Programming.”

tical Aspects of Declarative

Languages, edited by Manuel

V. Hermenegildo and Daniel

Cabeza, vol. 3350, Springer

Kitzing. Evolution and

Belief: ‘Abdu’l-Bahá’s Re-

sponse to Nineteenth-Century

Darwinism. Kalimát Press,

Christoffersen, Martin L. “Cladistic Taxonomy, Phylogenetic Systematics, and
Evolutionary Ranking.” *Systematic Biology*, vol. 44, no. 3, Sept. 1995, p.
440. doi.org/10.2307/2413605.

Coleman, Jude. “Human-Evolution Story Rewritten by Fresh Data and More
Computing Power.” *Nature*, May 2023, pp. d41586-023-01664-z. doi.
org/10.1038/d41586-023-01664-z.

Corballis, Michael. "The Giant Leap to Humankind." *New Zealand Science Review*, vol. 67, no. 2, Dec. 2023, pp. 60–62. doi.org/10.26686/nzsr.v67.8899.

Cracraft, Joel. "Pattern and Process in Paleobiology: The Role of Cladistic Analysis in Systematic Paleontology." *Paleobiology*, vol. 7, no. 4, 1981, pp. 456–68.

Darwin, Charles. *The Origin of Species: By Means of Natural Selection of the Preservation of Favoured Races in the Struggle for Life*. Royal Collector's edition, Royal Classics, 2020.

Deacon, Terrence William. *The Symbolic Species: The Co-Evolution of Language and the Brain*. Norton, 1998.

DeWitt, Richard. *Worldviews: An Introduction to the History and Philosophy of Science*. 3rd ed, John Wiley & Sons, Inc, 2018.

Donaldson, Bryan. *On the Originality of Species: The Convergence of Evolutionary Science and the Baha'i Teachings*. Akka Publishing House, 2023.

Dupont, Jean-Claude. "Historical Perspective on Neuroembryology: Wilhelm His and His Contemporaries." *Genesis*, vol. 56, no. 6–7, June 2018, p. e23218. doi.org/10.1002/dvg.23218.

Faith, Daniel P., and Peter S. Cranston. "Could a Cladogram This Short Have Arisen by Chance Alone?: On Permutation Tests for Cladistic Structure." *Cladistics*, vol. 7, no. 1, 1991, pp. 1–28. doi.org/10.1111/j.1096-0031.1991.tb00020.x.

Fentress, John C. "Ethological Models of Hierarchy and Patterning of Species-Specific Behavior." *Motivation*, edited by Evelyn Satinoff and Philip Teitelbaum, Springer US, 1983, pp. 185–234. doi.org/10.1007/978-1-4684-4286-1_5.

Fuellen, Georg. "Homology and Phylogeny and Their Automated Inference." *Naturwissenschaften*, vol. 95, no. 6, June 2008, pp. 469–81. doi.org/10.1007/s00114-008-0348-1.

Gavryushkina, Alexandra, et al. "Bayesian Inference of Sampled Ancestor Trees for Epidemiology and Fossil Calibration." *PLoS Computational Biology*, edited by Katia Koelle, vol. 10, no. 12, Dec. 2014, p. e1003919. doi.org/10.1371/journal.pcbi.1003919.

Gould, Stephen Jay. *Wonderful Life: The Burgess Shale and the Nature of History*. Norton & Co, 1990.

Grantham, Todd. "The Role of Fossils in Phylogeny Reconstruction: Why Is It So Difficult to Integrate Paleobiological and Neontological Evolutionary Biology?" *Biology & Philosophy*, vol. 19, no. 5, Nov. 2004, pp. 687–720. doi.org/10.1007/s10539-005-0370-z.

Gregory, T. Ryan. "Understanding Evolutionary Trees." *Evolution: Education and Outreach*, vol. 1, no. 2, Apr. 2008, pp. 121–37. doi.org/10.1007/s12052-008-0035-x.

———. “Understanding Natural Selection: Essential Concepts and Common Misconceptions.” *Evolution: Education and Outreach*, vol. 2, no. 2, 2, June 2009, pp. 156–75. doi.org/10.1007/s12052-009-0128-1.

Haeckel, Ernst. “The History of Creation, Vol. 1.” The Project Gutenberg eBook of the History of Creation, www.gutenberg.org/files/40472/40472-h/40472-h.htm. Accessed 8 Feb. 2024.

Haque, Omar. *Phylogenetics: Evolutionary Relationships and Classification*. Britannica. www.britannica.com/science/phylogenetics. Accessed 8 Feb. 2024.

Harrison, Terry. “Cladistic Concepts and the Species Problem in Hominoid Evolution.” *Species, Species Concepts and Primate Evolution*, edited by William H. Kimbel and Lawrence B. Martin, Springer US, 1993, pp. 345–71. doi.org/10.1007/978-1-4899-3745-2_14.

Hatcher, John S. *Close Connections: The Bridge Between Spiritual and Physical Reality*. US Bahá’í Publishing, 2005.

———. *The Purpose of Physical Reality: The Kingdom of Names*. Bahá’í Publishing Trust, 1987.

Hatcher, William S. “A Scientific Proof of the Existence of God.” *The Journal of Bahá’í Studies*, vol. 5, no. 4, Dec. 1993, pp. 1–16. doi.org/10.31581/jbs-5.4.1(1993).

———. “Epilogue on Neo-Darwinian Theory.” *William S. Hatcher Library*, 2008, william.hatcher.org/media/articles/epilogue-on-neo-darwinian-theory. Accessed 8 Feb. 2024.

Henning, Willi. *Phylogenetic Systematics 1966*. 1966. Internet Archive, archive.org/details/hennig-phylogenetic-systematics-1966.

Huelsenbeck, John P., Fredrik Ronquist, et al. “Bayesian Inference of Phylogeny and Its Impact on Evolutionary Biology.” *Science*, vol. 294, no. 5550, Dec. 2001, pp. 2310–14. doi.org/10.1126/science.1065889.

Huelsenbeck, John P., Jonathan P. Bollback, et al. “Inferring the Root of a Phylogenetic Tree.” *Systematic Biology*, edited by R. Olmstead, vol. 51, no. 1, Jan. 2002, pp. 32–43. doi.org/10.1080/106351502753475862.

Kadykalo, Andrii. “Scientific and Theological Responses for Evolution and Biological Complexity.” *Scientia et Fides*, vol. 8, no. 2, Oct. 2020, pp. 351–69. doi.org/10.12775/SetF.2020.025.

Khursheed, Anjam. *Science and Religion: Towards the Restoration of an Ancient Harmony*. Oneworld Publications, 1987.

Kluge, Ian. “Some Answered Questions: A Philosophical Perspective.” *Lights of Irfán*, vol. 10, *Irfán Colloquia*, 2009, pp. 149–274, bahai-library.com/kluge_saq_philosophical_perspective.

- Lake, Mark. "Archaeological Inference and the Explanation of Hominid Evolution." *The Archaeology of Human Ancestry: Power, Sex and Tradition*, edited by Stephen Shennan and James Steele, Routledge, 2005, pp. 184–201. doi.org/10.4324/9780203974131.
- Lample, Paul, editor. *Bahá'u'lláh's Teachings on Spiritual Reality*. Palabra Publications, 1996.
- Lecointre, Guillaume, and Hervé Le Guyader. *The Tree of Life: A Phylogenetic Classification*. Belknap Press of Harvard UP, 2006.
- Lenski, Richard E., et al. "The Evolutionary Origin of Complex Features." *Nature*, vol. 423, no. 6936, May 2003, pp. 139–44. doi.org/10.1038/nature01568.
- Leutenegger, Walter. "Origin of Hominid Bipedalism." *Nature*, vol. 325, no. 6102, Jan. 1987, pp. 305–305. doi.org/10.1038/325305c0.
- Linhard, Tina. "Early Embryonic Morphology and Its Changing Forms." *Journal of Prenatal and Perinatal Psychology and Health*, vol. 32, no. 2, Winter 2017, pp. 1–15.
- Lipps, Jere H., et al. *Evolution of Biologic Complexity: Evidence from Geology, Paleontology, and Molecular Biology*. Edited by Richard B. Hoover, 1998, pp. 138–48. doi.org/10.1117/12.319851.
- Loehle, Craig. "On Human Origins: A Bahá'í Perspective." *The Journal of Bahá'í Studies*, vol. 2, no. 4, Dec. 1990, pp. 45–58. doi.org/10.31581/jbs-2.4.3(1990).
- Losos, Jonathan B., et al. "Evolutionary Biology for the 21st Century." *PLOS Biology*, vol. 11, no. 1, Jan. 2013, p. e1001466. doi.org/10.1371/journal.pbio.1001466.
- MacLean, Evan L., et al. "How Does Cognition Evolve? Phylogenetic Comparative Psychology." *Animal Cognition*, vol. 15, no. 2, Mar. 2012, pp. 223–38. doi.org/10.1007/s10071-011-0448-8.
- Martincorena, Iñigo, and Nicholas M. Luscombe. "Non-random Mutation: The Evolution of Targeted Hypermutation and Hypomutation." *BioEssays*, vol. 35, no. 2, Feb. 2013, pp. 123–30. doi.org/10.1002/bies.201200150.
- Matthews, Gary. *The Challenge of Bahá'u'lláh*. Stonehaven Press, 1993.
- Mavrodiev, Evgeny V., and Alexander Madorsky. "On Pattern-Cladistic Analyses Based on Complete Plastid Genome Sequences." *Acta Biotheoretica*, vol. 71, no. 4, Dec. 2023, p. 22. doi.org/10.1007/s10441-023-09475-5.
- Mehanian, Courosh, and Stephen Friberg. "Religion and Evolution Reconciled: 'Abdu'l-Bahá's Comments on Evolution.'" *The Journal of Bahá'í Studies*, vol. 13, nos. 1–4, Dec. 2003, pp. 55–93. doi.org/10.31581/jbs-13.1-4.3(2003).
- Nadimi, Bahman. *Bahá'í View on Biological Evolution*. 2023, bahai-library.com/

nadimi_view_biological_evolution.

O'Brien, Stephen J., et al. "A Molecular Solution to the Riddle of the Giant Panda's Phylogeny." *Nature*, vol. 317, no. 6033, Sept. 1985, pp. 140–44. doi.org/10.1038/317140a0.

40 The Journal of Bahá'í Studies 35.4 2025

Oskooi, Salman. *When Science and Religion Merge: A Modern Case Study*. 2009. San Diego State University. bahai-library.com/oskooi_disharmony_science_religion.

Panchen, Alec L. *Classification, Evolution, and the Nature of Biology*. 1st ed., Cambridge UP, 1992. doi.org/10.1017/CBO9780511565557.

Penny, David. "The Continuity of Mind, from Great Apes to Humans." *New Zealand Science Review*, vol. 67, no. 2, Dec. 2023, pp. 63–69. doi.org/10.26686/nzsr.v67.8900.

Perry, Douglas. "Review of *On the Originality of Species: The Convergence of Evolutionary Science and Baha'i Teachings*." *The Journal of Bahá'í Studies*, vol. 34, no. 1–4, Dec. 2024, pp. 138–48. doi.org/10.31581/jbs-34.1-4.572(2024).

Sandvik, Hanno. "Anthropocentricisms in Cladograms." *Biology & Philosophy*, vol. 24, no. 4, Sept. 2009, pp. 425–40. doi.org/10.1007/s10539-007-9102-x.

Sneath, P. H. A. "Cladistic Representation of Reticulate Evolution." *Systematic Biology*, vol. 24, no. 3, Sept. 1975, pp. 360–68. doi.org/10.1093/sysbio/24.3.360.

Stanyon, R., et al. "Cranial Capacity in Hominid Evolution." *Human Evolution*, vol. 8, no. 3, July 1993, pp. 205–16. doi.org/10.1007/BF02436715.

Tattersall, Ian. "An Evolutionary Framework for the Acquisition of Symbolic Cognition by *Homo Sapiens*." *Comparative Cognition & Behavior Reviews*, vol. 3, 2008. doi.org/10.3819/ccbr.2008.30006.

Themes, Ufo. *Placentation*. May 2017, <https://veteriankey.com/placentation-2/>.

Tocheri, Matthew W., et al. "The Evolutionary History of the Hominin Hand since the Last Common Ancestor of Pan and Homo." *Journal of Anatomy*, vol. 212, no. 4, Apr. 2008, pp. 544–62. doi.org/10.1111/j.1469-7580.2008.00865.x.

The Universal House of Justice. Messages from the Universal House of Justice 1963-1986: Third Epoch of the Formative Age. Bahá'í Publishing Trust, 1996. bahai-library.com/uhj_messages_1963_1986.

———. Letter dated 5 July 2010. In Bryan Donaldson *On the Originality of Species*, Akka Publishing House, 2023.

White, W. Timothy J., et al. "Beyond Reasonable Doubt: Evolution from DNA Sequences." *PLOS ONE*, vol. 8, no. 8, Aug. 2013, p. e69924. doi.org/10.1371/journal.pone.0069924.

Williams, David M., and Malte C. Ebach. *Cladistics: A Guide to Biological Classification*. Third edition, Cambridge University Press, 2020.

Zhang, Zhibin. “Concepts, Measurements and Scientific Problems of Biocomplexity.” *Integrative Zoology*, vol. 2, no. 2, June 2007, pp. 100–10. doi.org/10.1111/j.1749-4877.2007.00049.x.

— A New Perspective on Human Evolution (Used by permission of the curator)