



## Article

*A Possible Natural Complement to the Story of the Fall*

# A Possible Natural Complement to the Story of the Fall



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*The story of the Fall may be regarded as an association between a local event and its global consequences. This association will be denoted by brackets as {local : global}. {Genesis 2:4–4:26 : Romans 5:12–14} is one association belonging to the story of the Fall. The purpose of this article is to propose a natural {local : global} association that complements {Genesis 2:4–4:26 : Romans 5:12–14}. The binding of these two complementary associations yields a deeper appreciation of our current human condition.*

In 1999, I presented a talk to the ASA Conference at John Brown University in Siloam Springs, Arkansas titled “A Possible Change in the Dynamics of Human Evolution that Complements the story of the Fall.” The presentation contained two key phrases: (1) “a possible change in the dynamics of human evolution” and (2) “a change that complements the story of the Fall.” The first phrase pertains to anthropology and the second phrase pertains to Christian aesthetics. Thus, this work is part of an artistic project that, in the course of development, raises a scientific hypothesis. The goal of this article is to describe my project, the hypothesis that it generates, and a way that the hypothesis complements the story of the Fall.

In biochemistry, the word “complement” means both “adds to” and “gives functionality to.” For example, a complement may be a nonprotein molecule that, upon binding, transforms a particular protein into an enzyme. The enzyme exhibits characteristics that transcend the properties of each unbound molecule. In both aesthetic and pragmatic terms, a complement and its biomolecule are “made for” each other.

The metaphor of complement describes an aesthetic point of view. For the biochem-

ist, the binding of complements is beautiful. The bound molecules are more than the sum of the parts. Binding yields a functionality that neither part could achieve alone. My artistic project endeavors to apply this metaphor of complement to the early chapters of Genesis and the evolutionary record. One may consider the project as an exercise in Christian concordism that pursues the ambiguous question: If the early chapters of Genesis and the evolutionary record pertain to a single reality, then how would they match?<sup>1</sup> The question is ambiguous because each set of “origin stories” is enacted on a stage built on exclusive assumptions.<sup>2</sup> Each “origin story” comes from a different tradition, history, and world experience. If each “origin story” points to a single reality, then that reality reveals itself to modern Christians as a strange, two-sided accounting that seems to me like a complement and its biomolecule.<sup>3</sup> My art strives to elucidate a binding of the two accounts, the product of which may transcend the properties of either account.

## A {Local : Global} Association

This article presents a concordist natural complement to the story of the Fall. For my purposes, we will regard the story of the Fall as an association of ideas. This association will be called {local : global} even though one could just as well call the association {single incident : universal consequences}. For ease of reading, brackets will be used to denote

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each association. The first compartment will be the local aspect; the second will be the global.

The local aspect for the biblical association is depicted in Gen. 2:4–4:26. The Bible has many expressions of the global aspect. We will choose the view expressed by Paul in Rom. 5:12–14. In the following sections, we will describe a natural {local : global} association that complements this biblical association. The complement is shown in its entirety in figure 1. The description begins by exploring the complement between the local aspects of each association, proceeds to the proposal of a natural association, and then concludes with pictures of how the global aspects complement.

### Complement for the Local Aspect

How does Gen. 2:4–4:26 “match” the evolutionary record? The story of Adam and Eve points to ancient Mesopotamia. In “The Garden of Eden: A Modern Landscape,” Carol A. Hill deduced that the four rivers of Eden were real rivers that flowed on a modern landscape before Noah’s flood.<sup>4</sup> Although the purpose of her article was to refute Flood Geology, her carefully constructed argument supports the idea that the mythic Adam was located in prehistoric southern Mesopotamia. Similar conclusions were reached by Juris Zarins of Southwestern Missouri State University<sup>5</sup> and independently, by Faurouk El-Baz of Boston University.<sup>6</sup> Both anthropologists were fascinated by the coherence between the mythic descriptions and the actual ancient landscape. They discussed their fascination with journalists, which is why the references are popular magazines. Both anthropologists thought that the naming of the four rivers locates Eden on the northern coast of the Persian Gulf during the Wet Neolithic, which lasted from 7000 to 4500 B.C.

These dates mean that the founding of the story took place long before the writing of the story. Presumably, the story was transmitted by oral tradition for at least two thousand years. By the time the stories of Adam and Eve and of Cain and Abel were committed to writing, the Wet Neolithic had long ended and two of the four rivers had become dry wadis. The references as to what goods came down each river may well have been added to the story during the Ubaid or later Uruk periods, which occurred prior to the desiccation of southwestern Asia. We know that organized long-distance trade was practiced during these periods.

Dick Fischer likewise placed Adam early in southern Mesopotamian prehistory.<sup>7</sup> He concluded that the children of Adam somehow interacted with the Ubaid, based on the similarity of the names of Adam and his descendants to the founding names of the Sumerian king lists.<sup>8</sup> The Ubaid was the first culture in a sequence of prehistoric cultures of increasing social complexity. The Ubaid preceded the Uruk. The Uruk preceded Sumerian civilization.

The occupations of Cain and Abel yield another indication of interaction. Each sibling practiced a different aspect of the economy of the Developed Neolithic. The Developed Neolithic followed the revolution in human production that came from combining agriculture and stockbreeding.<sup>9</sup> The combined economy was well established by the time the Ubaid culture settled in southern Mesopotamia.

Finally, as Fischer further noted, even though Adam and Eve were the only humans in the garden, they clearly were not once outside the garden. After the Lord God confronted Cain concerning Abel’s death, Cain wondered about being slaughtered by strangers. Cain then went to the land of Nod and took a wife. His offspring became powerful to the point of arrogance. They founded various economic specialties. Enoch founded a city.<sup>10</sup>

The success of Cain’s progeny reminds me of trends toward social complexity that emerged during the Ubaid period.<sup>11</sup> The Ubaid was one of the first cultures—perhaps the first—to develop what might be called “unconstrained complexity.” That is, the increase in social complexity was so unconstrained that it produced a completely novel structure: civilization.

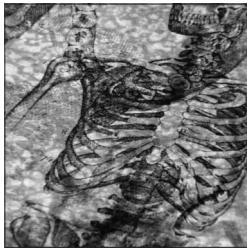
In sum, the local aspect of the story of the Fall matches the location, time, and development of the Ubaid culture of southern Mesopotamia. From this footing, we can wonder whether there might be a global association to the development of the Ubaid culture that would complement the global aspect of the story of the Fall. The proposal of a natural global aspect is both artistic, from the point of view of Christian concordism, and scientific, since it presents a hypothesis subject to falsification.

### A Global Association to Ubaid

The Ubaid was perhaps the first Neolithic society to exhibit indications of unconstrained complexity. There are many examples of these indications. One example is found at a single excavation site at Eridu. Excavators found a series of temples built one over the other, of more and more monumental proportions, and based on a single original Ubaid architectural design. Such a progression in monumental architecture had never appeared before in human evolutionary history. Earlier complex Neolithic

		Complement	
		Biblical	Natural
Association	Local	Gen. 2:4–4:26	Ubaid cultural development
	Global	Rom. 5:12–14	Psychological consequences of change in linguistic sign system

Figure 1. A natural association complements a biblical association.



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*The Ubaid was perhaps the first Neolithic society to exhibit indications of unconstrained complexity. ... The term "complex" refers to multiple-level hierarchies, relatively rapid innovation, and exclusive social and economic specialization. ... The qualifier, "unconstrained," denotes a progressive increase in hierarchical power, innovation, and specialization.*

cultures, such as Jericho and Catal Huyuk, which were remarkable in architectural achievements, were not "unconstrained" as the Ubaid was.<sup>12</sup>

Another example is the cultural expansion of the Ubaid. The villages of the Hassuna and Samarra cultures settled throughout northern Mesopotamia by way of division and resettlement, the traditional method of Neolithic cultural expansion. These cultures gave way to the Halaf, which showed signs of increasing social complexity. Then, around 4500 BC, the already complex Ubaid suddenly expanded into the region and apparently took over Halaf villages.<sup>13</sup> Whether the change in artifacts was due to conquest or conversion, this type of cultural expansion was a novel development in human prehistory. However, it is one familiar to history.

We find more indications in the subsequent Uruk period. The Uruk gave rise to the first towns, large-scale irrigation projects, standardized units of measure, and so forth.<sup>14</sup> There were so many "firsts" during the Uruk and subsequent Sumerian civilization that Samuel Noah Kramer titled his book on the subject *History Begins at Sumer*.<sup>15</sup> This cascade of developments in southern Mesopotamia makes the Ubaid and its descendent cultures particularly interesting to anthropologists.

Archaeologist Robert Wenke, in *Patterns of Prehistory*, captured the Ubaid's appeal to the anthropologist in his chapter on the origins of complex societies in Southwest Asia. In the chapter's header, he quotes Isa. 13:19–22. Isaiah prophetically envisioned the city of Babylon as a great rubbish heap, picked over by doleful creatures, such as archaeologists and tourists. Thousands of years later, Wenke reflected on that heap, and saw a puzzle to be solved, saying:

Five thousand years ago, when most of the world's people were dirt-poor illiterate farmers or hunters and gatherers, and when the peoples of the New World were still thousands of years from village life, Babylon and its surroundings were a cosmopolitan world of cities, libraries, schools, shops, international trade, roads, taxes, temples, and many of the other elements we identify with "civilization" ... Southwest Asian culture is so rich, so

ancient, that it almost defies ... interpretation. ... scholars have long sought some general sense of why and how these societies developed as they did, and why this part of the world was the first to produce complex cultures, and why the basic pattern of development in ancient Southwest Asia was repeated in most of its essentials in Egypt, the Indus Valley, China, Mesoamerica, Peru and perhaps elsewhere.<sup>16</sup>

Wenke envisioned the possibility of a grand narrative that explains the emergence of unconstrained complex society throughout the world. The term "complex" refers to multiple-level hierarchies, relatively rapid innovation, and exclusive social and economic specialization. This is in contrast to "band-level" societies that are characterized by lack of hierarchies, comparatively slow innovation, and restrained division of labor. The qualifier, "unconstrained," denotes a progressive increase in hierarchical power, innovation, and specialization. The Ubaid culture underwent a transition from band-level to unconstrained-complex prior to 4500 BC.<sup>17</sup>

Modern anthropology's pursuit of this grand narrative reminds one of the mythic medieval search for the Holy Grail. Prior to the 1960s, anthropologists found that no single material factor was common to the formation of all known (unconstrained) complex societies. Since each society followed a unique path of development, no universal arrangement of material causes could be discerned.<sup>18</sup>

The failure of material causality led anthropologists in the 1960s and 1970s to describe the characteristics of a cultural cause, if one existed.<sup>19</sup> The cultural transition must raise the cost of "band-level" or local-order social controls, and it must lower the cost of "complex" or higher-order social controls. To date, no cultural change has been proposed that meets these criteria.

If the story of the Fall has a natural global complement, then what better cultural change than one that meets the above criteria? But how do we get a handle on what this change could be? Since the stories in Gen. 2:4–4:26 complement the beginning of this transition, we might begin by creatively re-imaging these stories with this cultural



change in mind. Two features of these stories are evocative in this regard.

First, the Adam and Eve story tells of the start of language. Adam named the animals. He named Eve "mother of all living." Adam, the founder, spoke both literally and metaphorically. A spoken command and a deceptive line of logic lie at the core at the drama of disobedience. The crucial roles that language plays in the biblical drama point to the start of language *as we know it*. This leads us to wonder, in the above context: Did those living at the dawn of the Ubaid culture, such as the folks that the mythic Cain married into, speak language *as we do not know it*? This question is interesting, especially in light of the fact that, until recently, deaf people were suppressed from signing because it was not considered to be an appropriate way of talking. It was strange. It was language *as we do not know it*. So teachers of the deaf would not allow it. But deaf signing is language. William Stokoe ruined his life to demonstrate that very point.<sup>20</sup>

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*This cultural change [in language practices from "form X" to "language as we know it"] and the resulting development of complex society constitute a break with previous human evolutionary history.*

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Second, the success of Cain's progeny in the land of Nod allows us to imagine that Cain brought with him the cultural change that potentiated the irreversible and innovative social and economic specialization of the Ubaid and later cultures. Cain had something that the people of Nod lacked. The myth of Cain's departure suggests that this "something" was neither a tangible object nor a technical skill. This "something" could have been a new way of thinking or, in line with the first point, a new way of talking.

This artistic entanglement of anthropology and the early chapters of the Bible calls to mind an association between changes in communication or transportation and historical epochs noted by University of Chicago historian William McNeill.<sup>21</sup> The association may be crudely phrased as: Whenever a new way of "walking" or "talking" came to be widely practiced, the social structure of the society changed in response. The inventions of the chariot and of the train each made a new society possible. The inventions of writing and of the radio did the same. Consequently, Gen. 2:4-4:26 clues our imagination into the notion that a cultural change in language practices from "form X" to "language as we know it" potentiated the formation of

unconstrained complex society. This cultural change and the resulting development of complex society constitute a break with previous human evolutionary history.

## The Evolution of Talk and the Emergence of Complex Society

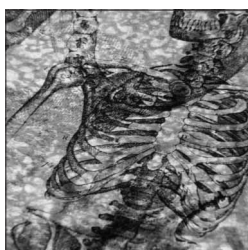
What "way of talking" preceded the way we talk today? How did the change make complex society possible? These questions are addressed by a scientific hypothesis, which appears in the journal *Semiotica*.<sup>22</sup> An outline of the hypothesis follows.

Typically, when we think of the word "talk," speech-alone comes to mind. But there is also sign language for the deaf. American Sign Language (ASL) is a way of talking as linguistically rich as speech-alone. Consequently, we can separate the evolution of talk from the evolution of language *per se*. Moreover, ASL is a different sign system than speech-alone.<sup>23</sup> We will call this sign system "hand-talk." The difference in sign systems between "hand-talk" and "speech-alone talk" is at the heart of the hypothesis.

The term "language" concerns the capacity of humans to talk. Language, essentially, is a primary modeling system devoted to the rapid processing of intentional signs through both meaning and syntax.<sup>24</sup> That is, language is a cognitive system that makes sense of talking. Since specialized regions of the human brain facilitate this task, it has been argued that language must be phylogenically ancient.<sup>25</sup>

What "form of talk" facilitated the evolution of language in species ancestral to humans? In *Gesture and the Evolution of Language*, Sherman Wilcox, David Armstrong, and William Stokoe argue that hand-talk was the medium through which language evolved.<sup>26</sup> Once language evolved, selection pressures favored the addition of speech as a way of talking, because speech has technical advantages over manual-brachial gesture. This does not mean that the voice was not used for expression by species ancestral to humans, only that language, the ability to talk, evolved first as hand-talk and then later—perhaps with the appearance of anatomically modern humans—speech was added as a way of talking. The semiotician Thomas A. Sebeok put it succinctly: "... language developed as an adaptation; whereas speech developed out of language as a derivative exaptation ..."<sup>27</sup>

This gives rise to the question: Did speech completely replace hand-talk with the emergence of anatomically modern humans? The answer is, "Probably not." In *Do You See What I Mean?* Brenda Farnell described the Plains Sign Talk of the Assiniboin people of North America.<sup>28</sup> In *Sign Languages of Aboriginal Australia*, Adam Kendon reported on the sign language of aborigines in the North Central Desert of Australia.<sup>29</sup> While these monographs focused on



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component of  
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talk was  
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the use of sign, these cultures actually practice both sign and speech, which I will call “hand-speech” talk. In these cultures, either sign or speech is used for talking, such as giving directions and telling stories. These uses go far beyond the popular stereotype of “sign talk” as a way to communicate among different tribes. Hand-talk is part of the social fabric in these cultures. The use of sign or speech or both depends on the social context. For example, an Australian aborigine widow whose husband has recently died is forbidden, by taboo, from speech and therefore relies only on hand-talk.<sup>30</sup>

Returning to the concept of the evolution of talk, the following observations must be weighed. No extant cultures practice hand-talk alone. Native cultures of the North American Plains and of Australia, both relatively uninfluenced by modern civilization, currently practice hand-speech talk. All unconstrained complex and civilized societies practice speech-alone talk. These facts suggest that the evolution of talk followed the steps shown in Table 1.

If this table reflects the evolution of talk, then a transition from hand-speech talk to speech-alone talk is implicated in the emergence of complex society. The last two rows of Table 1 are the most important. From the start of our species to the Developed Neolithic, all human cultures practiced hand-speech talk, as natives of North America and Australia presently do. Then, the hand-talk component of hand-speech talk was dropped prior to the emergence of complex society, leaving speech-alone talk to be practiced in all unconstrained complex societies. This suggests that a change in the way humans talk potentiated the development of complex society.

#### **Semiotics**

This change in “the way humans talk” also was a change in linguistic sign systems. Semiotics is the study of signs initiated in the modern era by Charles Sanders Peirce, among others.<sup>31</sup> Since both hand-speech talk and speech-alone talk may be regarded as sign systems, semiotics is the appropriate field to describe their different natures. Peirce stated that every sign consists of a representamen (or sign), an object, and an interpretant. For example, consider a fellow

walking in the African grassland. He spies a certain set of footprints, turns and runs back to the village. Here, the footprints are a representamen. Let us say that a lion had recently walked by. To the fellow, these footprints are an indicator or index of a nearby lion. The lion is the object of the sign. The fellow’s recognition is the interpretant. The interpretant accounts for his course of action. It explains his sense of urgency. It explains his fear. The interpretant may contain both cognitive and emotive qualities.

According to Peirce, natural signs typically exhibit one or more of three semiotic qualities: icon, index, and symbol.<sup>32</sup> Icon is the quality associated with similarity, caricatures, and features: “That child has her mother’s smile.” Index is the quality associated with pointing, symptoms, and correlations: “Where there is smoke, there is fire.” Symbol is the quality of cultural association, law, and causality: “The flag stands for the nation.” Although these qualities are related to each other hierarchically, each evokes a different set of qualities or of “senses of ...”<sup>33</sup> Using the above examples, we note that icon evokes a sense of recognition; index, a sense of correlation; and symbol, a sense of identification. In addition, each example evokes an emotion, such as family love, caution, and pride, respectively.

The intentional signs of hand-speech talk and of speech-alone talk contain a different blend of each of these three qualities. These are listed in Table 2. The semiotic qualities of hand-speech talk were strongly flavored by manual-brachial gestures, or the hand-talk component. In ASL, iconic and indexal aspects are easily recognized.<sup>34</sup> These aspects gave hand-speech gestures a feeling of “natural” meaning. As in the example of the fellow in Africa mentioned above, the speaker and listener uncritically recognized each sign—or word—as signing its referent either directly or through similarity. The hand-sign word for “lion” indicated the animal as intuitively and as magically<sup>35</sup> as a footprint in the wet earth or the twitch of an ear in tall grass.

In contrast, speech-alone talk primarily exhibits the quality of symbol. Symbols, although conventional, can seem arbitrary. For example, when considering French and English, the association of the sound “livre”

or “book” with a particular category of objects seems arbitrary. At the turn of the twentieth century, Ferdinand de Saussure revolutionized linguistics when he separated the signifier (acoustic image) from that which is signified (concept) and claimed that the relationship between the two was arbitrary.<sup>36</sup> The development of European thought from Saussure’s idea provides a lesson about speech-alone talk.

Saussure made his claim at a time when a movement toward the abstract in Western art and thought admitted an association between the terms “conventional” and “arbitrary.”<sup>37</sup> When you think about it, from within any particular culture, Saussure’s association makes no sense. Within a culture, we do not experience our conventions as arbitrary. Saussure’s counterintuitive association only makes sense when you make comparisons between languages. Despite this, his association inspired later developments in European philosophy.<sup>38</sup>

In European postmodernism, the arbitrary association between signifier and signified was interpreted to indicate that the construction of that association was an act of power. Put crudely, conventions indicate acts of power. Even the most introductory of books on postmodernists Jacques Derrida<sup>39</sup> and Michel Foucault<sup>40</sup> make this point. One could just as well have made the claim that convention indicates cooperation, since most words are adopted voluntarily. The particular emphasis on power in European postmodernism is a historical development. Today, a community of scholars focus on the question: Since the relationship between signifier and signified is arbitrary, who determines the meaning of words? We can accept the community at face value or we can ask: How did this community of scholars come to be? Was it “power” or “cooperation”? Or does it exist because Saussure named

the arbitrary relationship between signifier and signified? The postmodern use of Saussure’s thesis exemplifies the weird ability of speech-alone talk to construct social “reality” through the acts of naming and interpretation. This ability comes from the symbolic nature of words in speech-alone talk.

The qualities of symbols include the arbitrary, the conventional, and social construction. These qualities are significantly different from the iconic and indexical qualities of “form X,” hand-speech talk. As shown in Table 3, the qualities of each “way of talking” are related to other qualities. This list allows us to understand that each “way of talking” generates different interpretative points of view and feelings that, in turn, might influence the way that we signify nature, work, self, and society. Here, we can draw an intuitive link among the semiotics of the “way we talk,” the psychological experience of linguistic meaning, and social ideologies. By flavoring the way we experience signification in language, the qualities of each “way of talking” constrain the expression of social ideologies.

The qualities of hand-speech talk induce personal experiences that favor egalitarian band-level ideologies. For example, holistic and gestalt-oriented signification conflate possibly conflicting distinctions among self, society and nature. This experiential conflation coheres with tribal ideologies held by cultures presently practicing hand-speech talk. Brenda Farnell reported some stunning examples within the hand-speech talking cultures of the North American Plains Indians.<sup>41</sup> For example, movement generates meaning. Movement itself is the primal image for life that unites mind and body in action. Tribal social organization is visualized as a series of nested circles of motion. The order of society patterns the order of nature, the going and the coming of days, of birds, and of seasons.

Type of Talk	Epoch	Development
Hand-talk	ancestral to <i>H. sapiens</i>	neural structures for linguistic processing of intentional sign: primary modeling system
Hand-speech talk	<i>H. sapiens</i> through Paleolithic and Early Neolithic	geographical expansion of band-level societies
Speech-alone talk	Developed Neolithic to present	emergence of unconstrained-complex societies

Table 1.

Type of Talk	Model	Main Semiotic qualities
Hand-talk	sign language for deaf; ASL	index, icon, narrative; non-arbitrary relationship between signifier and signified
Hand-speech talk	sign and speech languages of natives of North America and Australia	similar to hand-talk
Speech-alone talk	Saussure’s linguistics	symbol; arbitrary relationship between signifier and signified

Table 2.





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Similarly, Kendon noted that hand-speech talk plays a role in cooperation and conflict avoidance for the aborigines of the North Central Desert.<sup>42</sup> Social coherence in band-level society has always been more a matter of cooperation than control (as opposed to civilization, where control—such as laws, decrees, contracts and institutions—plays a significant social role). Social ideologies that are holistic, expressive, playful, and magical, such as the dreaming of the aborigines of Australia, support cooperative action in these relatively nonhierarchical societies.

In contrast, the qualities of speech-alone talk do not as readily generate experiences supporting band-level ideologies. The senses of analysis, synthesis, and mechanism open our eyes to distinctions among nature, self, and society. These experiences of signification call to mind the ideologies of division and hierarchy expressed in all civilized societies, including our own.<sup>43</sup>

The transition from hand-speech talk to speech-alone talk opened the door to the expression of novel social ideologies that raised the cost of band-level social controls and lowered the cost of higher-order controls. In this way, a cultural transition in the “way we talk” meets the criteria for a cultural change capable of potentiating unconstrained complex society.

#### **The Natural {Local : Global} Association**

Let us now associate the above hypothesis with the emergence of unconstrained complex society in the Ubaid culture. The Ubaid appears to be the one of the first societies to realize speech-alone talk because it exhibited the traits of unconstrained complexity very early.<sup>44</sup>

#### **The Global Complement**

What about the psychological consequences of this change in the quality in linguistic signification? They resemble the disorientation and alienation inherent in what Christians call “Original Sin.” The disorientation comes from the different ways that each “way of talking” references the real. With hand-speech talk, humans sensed a “natural” connection between the word and the signified

object. Hand-speech words were recognized, not defined. Since the sense of recognition is holistic, the nuances of each word were folded into the gesture. For example, a sign for two and a sign for heart convey “doubt.” A sign for hugging means “love.” A sign to give and a gesture to all signifies “charity.” Like the holistic characters of Chinese ideographic writing, hand-speech words were not adept at dissecting, analyzing, or manipulating meaning. Yet they were more eloquent than any spoken word in the way they brought together meaning and emotion into a moment of signification.

In contrast, while we are inclined to think that the meaning of spoken words comes through recognition, it does not. Meaning comes through definition. Definitions can dissect, analyze, and manipulate meaning. Consider “doubt,” “love,” and “charity.” The definitions of these words are the products of a historical process that is, at any moment in time, convention. As seen in the example of what happened with Saussure’s naming of “arbitrary,” definitions influence behavior and construct social “reality.” That is why the definitions of words are such a point of contention. Is “doubt” a sign of social incompetence? Will a prescription of drug #9 enhance “love”? Is a politician giving away taxpayer’s money an act of “charity”?

Our spoken words dissect. They break apart the whole by naming the parts. Our spoken words analyze. They assign meaning to each part. Our spoken words synthesize. They bring the parts together. But each step is arbitrary. We do not know the unintended consequences of each process. We have no rules or guidelines to help us. For every set of definitions that leads to clarity, there are many equally attractive sets that lead to opacity. My definition of “doubt,” “love,” and “charity” may help me win a grant on social incompetence, sell a drug, or get re-elected. It may plunge you into darkness.

At the same time, we cannot live without the benefits of speech-alone talk. How can we put away the social and technical advances that we have developed over the past few millennia? We are disoriented, and yet, despite our confusion, we become more and more dependent on the fruits of social complexity.

So far, the discussion has only scratched the surface of the psychological consequences of this change in linguistic sign systems. The transition is both a curse and a gift. In the following sections, we will develop these ideas by way of snapshots. This series of pictures will take us from the present, through the vision of Adam and Christ depicted in Paul's letter to the Romans, and into the story of the transgression of Adam and Eve. We may artistically consider this progression of snapshots to be akin to images of a complement binding to its biomolecule.

### Postmodernism as an Example

Postmodern thought explores the ambiguous power of speech-alone talk. The modern project, which desired to name and construct a world of "objective" relations, ultimately could not impose itself on the abundance of reality.<sup>45</sup> "Reality" could not be reduced to objective relations. The attempt killed millions. It disoriented Western culture and Christian religion. We are in anguish about the meaning of science and how science was used to build societies without soul. Who could ever imagine that humans could be machines?

Postmodernism seems like a thousand hands either pulling back from the dying flames—there is no "truth"—or reaching forward to grasp a fading ember—if it worked for them, it will work for me.<sup>46</sup> The name "deconstruction" captures the confounding of words and meanings that follows the ill-fated construction of the modernist Tower of Babel. One wonders whether science, the bricks and mortar of the modern project, will be left like an abandoned ziggurat in the sands of time.

The proposed hypothesis places science in perspective. Science, after all, is formally a method of naming that is based on naturalistic assumptions.<sup>47</sup> The object of investigation is broken into component parts by denoting the parts with arbitrary symbols, such as constants and variables. The question then becomes whether operations performed on the symbols match, or explain, the behavior of the object of investigation. The attempt to match the symbolic operations to the behavior of the investigated object makes science a particularly productive language game. However, because science exists within the bounds of the semiotic system of speech-alone talk, the symbols that science forms may be later de-formed. The late Paul Feyerabend, in *Conquest of Abundance*, poignantly captured the downside of the construction of meaning made possible by science, and by extension, speech-alone talk.<sup>48</sup> Trouble awaits whenever a mechanism for the way the world works is extended into an exclusive metaphor for the way the world is.

At the same time, the upside of science cannot be ignored. The formation of meaning by science has improved the lot of humankind. The same can be said for the formation of meaning in certain social movements that preceded science, such as Judaism, Greek philosophy, Buddhism, Taoism, Christianity, Islam, and many other social movements that preach and search for universal insights. One can argue that the formation of meaning from these movements has deepened and widened the abundance of human "reality." For better or for worse, our naming constructs "reality." Our words can lead us to disaster or epiphany.

Signified	Signifier Hand-Speech	Speech-alone
Nature	<ul style="list-style-type: none"> <li>• action and thing often same word</li> <li>• part indicates whole</li> <li>• gestalt-oriented</li> <li>• holistic</li> <li>• narrative</li> </ul>	<ul style="list-style-type: none"> <li>• action property of thing</li> <li>• part named irrespective of whole</li> <li>• distinction oriented: names of parts are arbitrary</li> <li>• fragmented</li> <li>• definitional</li> </ul>
Work	<ul style="list-style-type: none"> <li>• hand-talk signs learned by imitation and mimicry</li> <li>• words defined intuitively, almost by magic</li> <li>• action defines words</li> </ul>	<ul style="list-style-type: none"> <li>• words learned by rote and association</li> <li>• technical vocabulary is constructed, not intuitive</li> <li>• words construct action and "what is possible"</li> </ul>
Self	<ul style="list-style-type: none"> <li>• words are embodied, the body not separate from the mind</li> <li>• self indicated through pointing</li> <li>• formal name signs attributes or narrative</li> </ul>	<ul style="list-style-type: none"> <li>• words disembodied</li> <li>• pronouns defined by convention</li> <li>• formal names assigned by convention</li> </ul>
Society	<ul style="list-style-type: none"> <li>• use of hand-talk or speech depends on social context</li> <li>• social relations indicated by holistic signs</li> </ul>	<ul style="list-style-type: none"> <li>• single channel for talking</li> <li>• social relations may be defined in same way as work</li> <li>• distinctions easy to name</li> </ul>
Overall	<ul style="list-style-type: none"> <li>• holistic</li> <li>• gestalt-oriented</li> <li>• natural</li> <li>• magical</li> </ul>	<ul style="list-style-type: none"> <li>• technical</li> <li>• distinction-oriented</li> <li>• conventional</li> <li>• constructive</li> </ul>





## Article

### *A Possible Natural Complement to the Story of the Fall*

#### The Letter to Romans

Paul's use of the word "death" with "sin" in Rom. 5:12-14 has confounded moderns. After all, if "death" entered into the world with Adam, then he must have lived before the primordial soup, or, at least, at the start of human evolution.<sup>49</sup> Paul's writing seems to indicate a problematical mode of transmission for "Adam's sin." For that reason, modern theologians have re-examined Rom. 5:12-21.<sup>50</sup> The proposal of this complement may assist that re-examination.

Paul may have included the word "death" in this passage for two reasons. First, he may have thought that all humans were literally descended from Adam. This constitutes a mode of transmission. Second, the word "death" is central to the story of the Fall of Adam and Eve. The psychological effects of a transition to speech-alone talk changes our appreciation of Paul's words by suggesting an alternate reading that is more consistent with our modern experience, thousands of years in Paul's future.

First, the natural complement suggests a method of transmission. Adam's sin is transmitted through culture. Today, there is no turning back from speech-alone talk. No society is hidden from the influence of speech-alone talking civilizations. Humans cannot forgo the wealth and power that come from being able to take apart, analyze, and reassemble physical and social "reality" through the semiotic system of speech-alone talk. Since each human must learn language, there is no escape from transmission, short of creating a "wolf" child. In this, transmission tracks reproduction.

Second, we civilized folk look at the few remaining hand-speech talking cultures, like the Australian aborigines and the North American Assiniboine, with a heart of longing, as if they know an innocence that we no longer have. They know what "death" is. We do not. On our own, we do not really know what anything is. Even scientific knowledge comes marked with the label "use provisionally until falsified or modified." Our words are not connected to their referents in the way they are in hand-speech talk, that is, as they were before the dawn of unconstrained complex society.

The consequences that flow from the symbolic quality of speech-alone talk recall a

familiar appreciation for Paul's use of the words "sin" and "death" in Rom. 5:12-14. The word "sin" complements our naming and construction of a false "reality"; the word "death," the consequence.<sup>51</sup> Paul notes that sin entered the world through a singular event, death ruled through sin, and Jesus was the next singular event that redeemed the first. From the perspective of the natural complement, we might say that speech-alone talk was adopted in a unique cultural transition that founded a new epoch for humanity. Speech-alone facilitated novel human constructions of natural and social "reality" based on arbitrary, willful, and exclusive word definitions. These novel social constructions were capable of producing serious mischief. But, all is not lost. Speech-alone talk also places us in a position to discover insights and appreciate revelations that anchor our naming in a completely new way. In this brave new world, Jesus, the new Adam, tethers our words to a reality that is not of our own construction.

Romans 5:12-14 notes that sin and death were in the world before the law was given, but sin was not counted where there was no law. In complement, prior to the adoption of speech-alone talk, aggression, conflict, disease, deception, and death were experienced through the medium of natural linguistic signs. There was no "law" as we know it. The meaning of these events was communicated through the magic of natural signs. Once those qualities of experience were less available with the irreversible and expanding adoption of speech-alone talk, from Adam to Moses so to speak, the types of disorientation and alienation that we are familiar with today became increasingly possible. Humans profited by their strange ability to divide and re-assemble the world. Marginal increases in social complexity resulted in economic gain. Eventually, the old way of talking was ignored and forgotten as continued developments in social and labor specialization generated a new world of wealth and power. This new world, the Sumerian civilization, wrote the first "law" as we know it. That is, law written by human hands.

With Moses, God gave the law. The law was a step forward, but suffered the same weakness as all acts of speech-alone talk. The law could be re-defined. The words became more important than the Word.

*In this brave  
new world  
[of speech-alone  
talk], Jesus,  
the new Adam,  
tethers our  
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a reality  
that is not  
of our own  
construction.*

The one-to-come turned out to be a sign, a human, who provided a new narrative and gestalt experience to the words "sin" and "death." From the perspective of this natural complement, Jesus provided meaning that allows us to construct a "reality" that transcends the lack of meaning—or arbitrariness—inherent in the purely symbolic sign system of speech-alone talk. Jesus is the second Adam. He binds what the other loosened. The Resurrection is the sign that answers the rhetorical question, "What is death?" that arises when we read Rom. 5:12–14 in light of human evolutionary history. We can define "death" narrowly as "when brain activity permanently ceases." Or, we can use the word to mean "when the soul leaves the body." Or, we can use the word to mean "when the soul is separated from its Creator." We see each way of dying in the Gospel stories of the passion of Christ: "My God, my God, why have you abandoned me?" (Matt. 27:46); "Father, into your hands I commend my spirit" (Luke 23:46); and "It is finished" (John 19:30). The story of the Passion does not allow Christians to separate these meanings of "death."

### The Story of Adam and Eve

What type of meanings "came to be" through the use of hand-speech talk? If one looks at the list of various qualities of hand-speech talk in Table 3, one cannot help but notice that these are similar, if not identical, to many of the qualities that moderns use to describe both "religious" and "natural" thought. Word and "reality," the secular and the divine, were experientially confused in the same manner that footprints are signs of the animal that made them. The world of our prehistoric ancestors was correspondingly magical. Everything was a sign. As for the nature of our own words, we may consider the references to "death" in Gen. 2:4–4:26. In doing so, we see a modern drama within the ancient myth.

God's warning to Adam, that eating from the tree of the knowledge of good and evil would lead to death, sounds straightforward enough. God taught Adam to name the animals. The animals were natural signs. Death was, too. Death was a holistic experience, the gestalt of cessation of breath. Adam was not disposed to ask, "What is death?" as he might have asked, "What is knowledge?" Adam essentially lived in a world where his speech-alone talk was magically experienced in the same way as hand-talk. Eve was of like mind, for when the serpent—more subtle than any other wild creature that the Lord had made—talked, Eve did not realize the issue it was addressing: "What is 'death'?"

We are reminded of Pontius Pilate asking, "What is 'truth'?" At the time, Pilate was merely saying that spoken words are defined by both convention and evocative referral to personal experiences. Your convention may not be the same as mine. Even worse, your "truth" may be an evocative referral to your own personal experience, and you may desire to make your "truth" the convention. That

change may lead to either greater clarity or opacity; to the formation or deformation of meaning. It is not my business to judge. I wash my hands of the question of the meaning of "truth."

The denial in Pontius Pilate's rhetorical question echoes the denial by the serpent as it spoke to Eve: You will not die. Why? The meaning of "death" is constructed. It is whatever you say it is. By eating of the fruit of the tree of knowledge, you will realize this. Your eyes will be opened. "Death" is what you make of it, just like good and evil are whatever God makes of them.

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*Eve regarded the tree in a new light that was simultaneously conventional and natural. Since "death" and the fruit were experienced as defined signs rather than natural signs, the question arose in her mind as to what value should be assigned to them. The serpent suggested new values ...*

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Thus the serpent presented "death" as a logical sign, a sign speaking to the intellect, and severed the magical link between "death," "knowledge," the Lord God, and the fruit.<sup>52</sup> Eve regarded the tree in a new light that was simultaneously conventional and natural. Since "death" and the fruit were experienced as defined signs rather than natural signs, the question arose in her mind as to what value should be assigned to them. The serpent suggested new values, saying that "death" was God's fear that Eve would be as knowing as God and that the fruit caused God's wisdom.

The serpent's deformation of meaning is characteristic of the semiotics of speech-alone talk. A spoken word is just a symbol. Symbols are arbitrary in quality. In this, the spoken word may fool us. We intuitively want to recognize the word's meaning, not to follow its definition. When we yield to our intuition, we allow ourselves to recognize an arbitrary or conventional definition as real. In doing so, we unwittingly construct order. We may then act on that created order. It does not matter whether the construction is formative or deformative. "Reality" follows the word. In this way, the serpent constructed an alluring new and false "reality." Did Eve even have a chance at figuring it out?

Eve re-defined the meaning of the fruit and acted. Upon consumption, the fruit seemed to return the favor. Eve became aware that the natural sign of her own body could



## Article

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be seen, analyzed, commented upon, plucked, and consumed. She was naked, alone, aware that her determination of the meaning of the fruit was not what God made of it. She was torn from her moorings and consumed with apprehension. From the perspective of the natural complement, Eve had died to the way of natural linguistic signs, under the guidance of the serpent, who knew that the word "death" was defined by convention and had resolved to impose its own will as convention. But, unlike us, the serpent knew what the consequences would be.

## Conclusion

This artistic project wrestles with science (the evolutionary record) and God (the biblical stories) in order to "bind" these natural and revealed ways of knowing as a complement that increases our understanding of human evolutionary development, alters our awareness of the nature of both science and postmodern thought, and deepens our appreciation of the story of Adam and Eve as well as Rom. 5:12-14. The productivity of this "binding" is a sign of the single reality that sustains both accounts.

A concordist "match" may be found in the complement of two {local : global} associations, one biblical and one natural. The biblical association, here termed the story of the Fall, includes {Gen. 2:4-4:26 : Rom. 5:12-14}. The natural association is {the early appearance of trends toward unconstrained complexity in the Ubaid culture : the psychological consequences of a change of semiotic system inherent in a transition of the "way humans talk" that potentiated the formation of unconstrained complex society}. The hypothesis and the complement should influence both natural and Christian thought.

With respect to natural thought, the hypothesis demonstrates the value of separating the evolution of talk from the evolution of language. The hypothesis integrates semiotics into the biocultural sciences by claiming that semiotic qualities constrain social ideologies. The hypothesis reflects the importance of Peirce and Saussure. Peirce articulated the triadic nature of signs and explored the qualities of natural signs. Saussure brought attention to the quality of arbitrariness in speech-alone talk. The hypothesis opens a new point of view in his-

torical studies by highlighting the importance of understanding the influence of technology on the semiotics of talk and the experience of meaning. The hypothesis provides a new perspective on the postmodern association among naming, meaning, and social construction. Finally, the hypothesis proposes that we, today, are separated from our ancestors by a semiotic chasm.

With respect to Christian thought, this hypothesis presents modern Christian theologians with a novel insight into the economy of salvation by providing a way to look at the stories in Gen. 2:4-4:26 with the evolutionary record in mind. The complement brings these stories to life. It is as if these stories describe the initiation of a cultural change that altered the course of human evolutionary history.

The complement also provides an intersection between postmodern aesthetics and Christian realism. The story of the Fall maps onto the postmodern assertion that the choice of one word forces the exclusion of other words. To speak a word is thus an act of power. Indeed, the ideas presented here agree that our words construct "reality," even when that "reality" is harmful.

The complement brings postmodernism through the transgression of Adam and Eve to the sacrifice of Jesus. Jesus is the answer to our new human condition. Jesus is the Word that we cannot name, the "reality" that we cannot construct, because this Word is God. At the same time, Jesus is the Word that we are to name as we construct our own "reality." This is the Word that constructed us. All things were made through him. In him was the life, and the life was the light of humans. The light shines in the darkness, and the darkness has not overcome it. And what is the darkness? It rolled off the tongue of the serpent, whose speech constructed a "reality" where Eve was seduced into reaching out, then plucking, the idea that she could determine the meaning of God's creation. \*

## Notes

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- <sup>43</sup>Eric Voegelin, *The New Science of Politics*, (Chicago: University of Chicago Press, 1952), 27-51.
- <sup>44</sup>Robert J. Wenke, *Patterns in Prehistory*, 292-312. Also, see my article, "The Evolution of Talk and the Emergence of Complex Society" (note 22), for further details on the dynamics of the initiation and spread of the cultural transition.
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## Upcoming ASA Conferences

**July 25-28, 2003:** Colorado Christian University, Lakewood, CO  
Topic: Astronomy and Cosmology  
Theme: "The Heavens Declare the Glory of God"  
Program Chair: Jennifer Wiseman  
Local Arrangements Chair: David Oakley

**July 23-26, 2004:** Trinity Western University, Langley, BC Canada  
Topic: Neuroscience  
Program Co-Chairs: Heather Looy, CSCA and Kenneth Dormer, ASA  
Local Arrangements Chair: Judith Toronchuk

**Aug. 5-8, 2005:** Messiah College, Grantham, PA  
Theme: "Energy, Conservation and the Environment"  
Program Chair: Kenell Touryan  
Local Arrangements Co-Chairs: Ted Davis and Jerry Hess

**July 28-31, 2006:** Calvin College, Grand Rapids, MI  
Local Arrangements Chair: Hessel Bouma III