

THE IMAGE OF THE GOD TO WHOM WE PRAY: AN EVOLUTIONARY PSYCHOBIOLOGICAL PERSPECTIVE

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ABSTRACT: Based on knowledge generated through our outer senses and with our use of reasoning and within the scientific discipline of evolutionary psychobiology we can make a reasonable presumption about God. The presumption concerns the image of the God to whom we pray. In the behavior that we use in the non-vocal aspect of petitioning prayer we (all persons of the three Abrahamic faiths) relate behaviorally in our «body language» to God as though He is a high status male Lord rather than how modern children relate to a loving father. We do this even though «Father» is used for God in the various English translations of the New Testament an order of magnitude more than the term «LORD». How this paradox could have developed and how it is resolved is presented.

KEY WORDS: God, theology, psychology, biology, evolution, behavior, sensation, Judaism, Christianity, Islam.

INTRODUCTION

Most of the ways by which we know about the image of the God to whom we pray are through subjective experience mediated through human consciousness, the revelation of others, and the words of religious authorities. As an adjunct to these traditional theological methods we also might be able to learn something more about the image of the God to whom we pray by scientific methods by using our outer senses and our ability to reason. Let us try. And then, let us see if we can integrate what has been learned through these two different methodologies.

The ambition to do this is more modest than it might seem at first. The information within our brain that contains the *Gestalt*-perceived¹ appearance that is the *image*² of the God about whom we are trying to learn is only the image of the God who is the object of and reason for our petitioning prayers. No other claims are made about God, such as omniscience, omnipotence, the ability to respond to petitioning prayers, create the universe, create life, etc. Using methodological naturalism the object of study will be something about which we are certain through our outer senses³ – our and others' non-verbal body-language-behavior used in the non-verbal aspect of petitioning prayer.

¹ *Gestalt* means the total form generating capability of our senses from only some of many of a form's perceptual features.

² When our brain senses and then perceives – i.e., gives meaning to – a useful object in objective material reality, information containing the image of the object enters our brain and is symbolically held as re-organized matter or energy. An *image* is an information-based representation in our brain which might, but need not, have its own referent in objective material reality outside of our brain, as for example in traditional theological writings on the image of a supernatural God.

³ However, inner sensations and perception, at one time the purview only of philosophy and subjectivity, are now able to be studied objectively by functional brain imaging.

SENSATION AND PERCEPTION

Through observation alone it seems as though each species sensually acquires and then perceptually processes – gives meaning to – different objects of the environment that are useful for its survival and reproductive success. As first hinted at by Plato in the allegory of the cave and then developed more fully by Emanuel Kant only «appearances» of objects or things are sensed. We do not sense and then perceive the actual «thing-in-itself». What sentient humans call a red rose is sensed and perceived very differently by a bee (food), a dog (ignored), and a human being (aesthetic, visual, and olfactory beauty). The Abrahamic God can be thought of as a «thing-in-itself» who cannot be sensed and perceived directly by the outer senses of a human being⁴. It is therefore readily acknowledged that through observation and reasoning we can only hope to learn something about the Gestalt-perceived appearance that is His image to a human being.

BEHAVIOR

There is a certain type of behavior – characterized by movement (the behavior's form) or as the result or outcome of movement (the behavior's proximate function) – that goes by many names: *Erbkoordination* (inherited coordination), coordinated motor pattern, modal action pattern, fixed action pattern or Type I Behavior. Hereafter, this type of behavior will be referred to as *Type I Behavior* (Eibl-Eibesfeldt, 1975; Feierman, 2009a). This type of behavior is *released by*⁵ various species-specific, Gestalt-perceived appearances of images of things-in-themselves in the environment that are called releasing stimuli. Different moods, which can be understood as *specific* readinnesses to act (Eibl-Eibesfeldt, 1975, p. 48), can lower or raise the threshold for different Type I Behaviors

In the same species in different contexts the same Type I Behavior can be released by the same releasing stimulus but with a different proximate function. When this occurs, ancillary features surrounding the behavior and influenced primarily by the behaving individual's mood can give an observer a clue as to the behavior's proximate function even before the result or outcome of the behavior is observed and by which the behavior's proximate function is identified.

Human beings exhibit Type I Behavior in the non-vocal aspect of petitioning prayer in what has been called «make-oneself-Lower-or-Smaller-or-more-Vulnerable» (LSV) Type I Religious Behavior» (Feierman 2009a)⁶. God is both the object of and reason for this behavior (Feierman, 2012). The image of God, which is sensed interiorly when one is in the mood to pray, is the stimulus that releases the behavior. Or, said slightly differently, God, as known through His image⁷, is also one of a number of proximate, contributing causes of the LSV behavior.

⁴ This statement does not preclude human beings sensing and perceiving God's image subjectively by their inner sense in the context of processing behaviorally motivating religious feelings and needs (Oviedo, 2009).

⁵ More will be said about releasers and what are released by them later. «Released by» is similar to «disinhibited by».

⁶ LSV Type I Religious Behavior in the non-vocal aspect of petitioning prayer, because it is definable by its form, is the only behavior specific to religion that could have evolved directly by Darwinian natural selection (Feierman, 2009b).

⁷ Knowing God through His image does not require the thing-in-itself of the image to exist in objective material reality outside of the human brain.

Causality cannot cross ontological realms⁸. Within methodological naturalism, if the information⁹ containing the Gestalt-perceived appearance that is the image of the God to whom we pray is a proximate, contributing cause of the mass¹⁰ of the human body overcoming inertia and moving into specific postures of prayer, this requires God's image¹¹ to be in the ontological realm of objective material reality. «God in the brain» is an idea with a history (Mandell, 1980 and others). It has resonance with various themes in theology¹² and psychobiology¹³.

BEHAVIOR TERMINOLOGY AND PRINCIPLES

In this context vertebrate *behavior* will mean the independent movement of an individual (when it is being described or defined by its form) or the result or outcome of the movement (when it is being described or defined by its proximate function). Such movement that is called behavior is terminally caused by the contraction of striated/skeletal muscles. There are many other more «upstream» proximate, contributing causes of the behavior prior to skeletal/striated muscles contracting. One of the other «upstream» causes is information within our brain that contains the Gestalt-extracted perception of the image of the God to whom we pray.

Behavior, as defined above, can be divided into two types (Feierman, 2009a, 2009b):

- «Type I Behavior» is *definable* by form and function in a natural environment and species-universal in form¹⁴.
- «Type II Behavior» is *describable* by form and *definable* by function in a natural environment and is *not* species-universal in form¹⁵.

The *form* of behavior is its coordinated pattern of movement. The *function* of behavior only refers to the behavior's proximate function, meaning the immediate or sometimes delayed non-material result or outcome of the behavior within the lifetime of the individual, often expressed as a present participle verb ending in «-ing», as in praying. *Describable*

⁸ The two ontological realms would be (1) objective material reality and (2) non-objective/non-material reality, which includes: (a) the subjective (including consciousness), functional and conceptual realm and (b) the supernatural realm, depending largely on perspective – 1st or 3rd person. The 1st person sensation that subjective consciousness can overcome the inertia of the human body and set it into motion would be an illusion.

⁹ Information (that which is necessary to make [organizational] decisions), as re-patterned forms of mass or energy, can be conceptualized within the realm of objective material reality as pointed out by Shannon (1948), Lowenstein (1999) and many others.

¹⁰ The term «mass» refers to a physics term, not to be confused with the Roman Catholic Mass.

¹¹ The mass- or energy-encoded image of God in our brain and the thing-in-itself of the God to whom we pray might be one in the same if there is no demonstrable referent for the thing-in-itself of God in objective material reality outside of the human brain (Feierman, 2012).

¹² At least in Christian theology this is conceptualized in the supernatural realm as having acquired the Spirit of God.

¹³ God in the brain – either as the information that contains the Gestalt-perceived appearance of the image of God or the «thing-in-itself» as God «Himself» actually being in or just being the human brain (Tiger and McGuire, 2010) – is not the same thing as the more traditional theological conceptualization of the immaterial Spirit of a supernatural God being in one's immaterial soul or mind.

¹⁴ «Species-universal in form» means that all members of the species will show the same behavior with the same form in all geographic sub-populations given the appropriate releasing stimuli and/or mood.

¹⁵ Whereas Type I Behavior can be traced back in vertebrates half a billion years to bony fish, Type II Behavior – which is amenable to being changed in form by the individual – has only been described (but not by that name) in some higher primates, sea mammals and birds. It is at most a few tens of millions of years old.

means that at least some of what is visually observed about the behavior's form or function is characterized (or memorialized) through the spoken or written word. *Definable* means that what is observed about the behavior's distinguishing form or function is put into a familiar general category and then it is stated how the behavior being defined is different from all other behaviors in the same familiar general category.

Type II Behavior is not going to be considered more here. It has previously been described in some detail, especially as it relates to religion (Feierman, 2009a). Other than the LSV Type I Religious Behavior that is used in the non-vocal aspect of petitioning prayer, all other religious behavior that is specific to religion¹⁶ is Type II Religious Behavior.

Behavior can also be classified into *appetitive* and *consummatory* categories. Appetitive behaviors seek proximity (by searching or calling) to the «releasing stimulus», which when contacted¹⁷, releases the consummatory end act (Immelmann and Beer, 1989, pp. 18-19, 86). In a social interaction between two living persons the consummatory end act of one individual can do one of two things: (1) be a releasing stimulus for a subsequent consummatory end act for the other individual, or (2) influences the mood (*specific* readiness to act) of the other individual. Often (2) influences the probability of (1) occurring over a somewhat longer time scale¹⁸.

Most behaviors that are specific to religion are Type II appetitive behaviors that seek proximity to God by calling (reading sacred narratives, praying out loud, singing sacred music, preaching God's Word, etc.) but occasionally by the equivalent of searching, as in religious pilgrimages.

In all vertebrates Type I Behavior can be modified in the lifetime of an individual in timing, orientation, intensity and proximate function through learning. In addition societies have different «display rules» for Type I Behavior that specify when, where, with whom and to what intensity each Type I Behavior should be executed (Eib-Eibesfeldt, 1989). By definition Type I Behavior is species-universal in form. However, in some instances in human beings the form of Type I Behavior can be defined in general enough terms, such as «LSV», so that different sub-populations of human beings (tribes, societies, nations, world religions) can use different sub-forms of the behavior as long as the proximate function of the sub-form of the behavior remains unchanged. As a result of this principle LSV Type I Religious Behavior in the non-vocal aspect of petitioning prayer has different sub-forms in Jews, Christians and Muslims (Feierman, 2009a).

LSV TYPE I BEHAVIOR IN HUMAN BEINGS

LSV Type I Behavior has three known proximate functions in human beings: (1) LSV Type I Submissive Behavior, (2) LSV Type I Heterosexual Human Female Courtship

¹⁶ There are many Type I Behaviors that are not specific to religion but are used in religion, such as walking, smiling, grasping objects, etc.

¹⁷ From the perspective of evolutionary psychobiology the image of God, which is the releasing stimulus, is «contacted» within human consciousness through which feelings are processed during the execution of LSV Type I Religious Behavior, the consummatory end act. Associated with this LSV behavioral posture is an accompanying reduction in fear and anxiety in men and women due to its prior association with diminution of pain and fear in submission. In reproductive- and post-reproductive age heterosexual women the LSV posture is also associated with pleasurable feelings that previously have been associated with romantic and sexual moods. As a result, the prayerful person through *post hoc ergo propter hoc* has the subjective impression, which secularists might call an illusion, that the feelings in prayer are communion with God.

¹⁸ This type of observable interaction between people produces what has been called human social grammar or «sociogrammar» that is a «system of rules structuring concrete behavioral sequences» (Eibl-Eibesfeldt, 1989, p. 546).

Behavior, and (3) LSV Type I Human Religious Behavior. This article mainly addresses the third proximate function although a few things will be said later about the first and second.

What Does the Relationship between Sensation and Behavior Have to Do with the Gestalt-Perceived Appearance of the Image of God to Human Beings?

In each species Type I Behaviors are released by species-specific Gestalt-perceived appearances that are images of 'things-in-themselves'. Therefore, if we know something about the appearances of the images that release LSV Type I Behavior in its two non-religious contexts in human beings – submission and human female heterosexual courtship – we can make some reasonable presumptions about the appearance of the outer-sense-invisible¹⁹, but nevertheless God's image, within our brain. This image is the releasing stimulus for LSV Type I Religious Behavior used in the non-vocal aspect of petitioning prayer.

RELEASERS

A *releaser* is a species-specific Gestalt-perceived appearance. At least for human beings it is an outer-or-inner-sensed appearance of the image of a thing-in-itself in the environment or on another member of the same species (i.e., a «social releaser») that has the ability to causally release a specific Type I Behavior in the perceiving individual (Immelmann and Beer, 1989, p. 250; Eibl-Eibesfeldt, 1975, p. 104-172). As an example, when a human being smiles at another human being in many different contexts the person being smiled at will usually smile in return. A human smile is a mood-conveying Type I Expressive Behavior that is also a social releaser, which causes the person to whom the smile was directed to smile in return. The social releasing stimuli for both human LSV Type I Submissive Behavior and LSV Type I Heterosexual Human Female Courtship Behavior are certain species-specific Gestalt-perceived appearances that are images of certain other human beings. We will consider each of these non-religious LSV Type I Behaviors separately and then explore in more detail which human beings release them.

LSV TYPE I SUBMISSIVE BEHAVIOR

LSV Type I Submissive Behavior makes the individual Lower-or-Smaller-or-more-Vulnerable. It is a very old²⁰ social signal of defeat that acts as a social releasing stimulus that decreases aggression in an other more dominant individual. LSV Type I Submissive Behavior evolved in vertebrates to be released under the following circumstance: (1) the threatening or aggressing adversary is overwhelmingly more powerful *and* (2) escape is not possible *and* (3) hiding is not possible. The outcome of the initial encounter establishes a «dominance relation» (Omark *et al.*, 1980) between the two individuals so that in future encounters in which access to a valued resource is at issue, the losing individual automatically behaves submissively and shows deference.

Dominance relations tend to be more evident within the two biological sexes (males and females) than across them. They are also more common in males than in females.

¹⁹ God is only «invisible» to the outer senses of human beings. He is not invisible to our inner sense through which we experience Him as behaviorally motivating religious feelings and goals in human consciousness (Oviedo, 2009).

²⁰ LSV Type I Submissive Behavior is at least a half a billion years old, as it is seen in bony fish.

Within populations of certain social vertebrates the sum total of these various dominance relations is called a «dominance hierarchy».

LSV Type I Submissive Behavior in humans has some differentiating ancillary features: (1) the person's face often shows the expressive behavior associated with the threshold-reducing mood of fear, (2) it is always done facing another living member of the same species in close proximity, (3) the eyes are open, (4) if there is accompanying vocalization, it is of a higher than usual pitch. What releases LSV Type I Submissive Behavior most often in human beings is the Gestalt-perceived appearance that is the image of a higher status, potentially or actually threatening or aggressing, human male.

LSV TYPE I HUMAN HETEROSEXUAL FEMALE COURTSHIP BEHAVIOR

In the context of flirting or solicitation LSV Type I Human Heterosexual Female Courtship Behavior makes the woman Lower-*or*-Smaller-*or*-more Vulnerable. She can become lower in a variety of ways but most commonly while standing by bending one knee²¹ or through three bends at the neck, waist and knee²². Becoming smaller is accomplished by bending and folding the body. Crouching, sitting or lying always makes the body lower than standing. Postural vulnerability²³ is often achieved by reducing the distance between or crossing the feet when standing so that the woman can easily be put off balance and fall. At times there are cultural-specific feminine fashion accoutrements, the bane of modern feminism, that facilitate and exaggerate a woman's vulnerability.

There are also differentiating ancillary features. The most obvious is that the person executing the behavior is a reproductive age woman who is in the presence of a reproductive age human male. There often are either rapidly alternated or simultaneously occurring approach and avoidance behaviors that produce coyness. Romantic or sexual moods can lower the threshold for these behaviors but such moods have no specific accompanying expressive behaviors on the face. All expressive behaviors except fear can be seen on the face, often alternated in rapid sequence. The eyes are open with intermittent eye contact punctuated by an eye-to-eye contact smile, which acknowledges social intercourse is occurring. LSV Type I Courtship Behavior primarily is released in reproductive age women by the Gestalt-perceived appearance that is the image of non-threatening, relatively high status, reproductive age human male.

LSV TYPE I RELIGIOUS BEHAVIOR IN THE NON-VOCAL ASPECT OF PETITIONING PRAYER

LSV Type I Religious Behavior in the Non-Vocal Aspect of Petitioning Prayer also has differentiating features. The eyes are usually closed in the three Abrahamic faiths²⁴. In addition the LSV behavior is not done facing another living person in close proximity. The expressive behavior on the face is usually neutral. There is no visible releasing stimulus in the environment.

However, we know that in both submissive and human heterosexual female courtship behavior there is a common element associated with their release, which is the Gestalt-

²¹ This posture is sometimes called a *contrapposto* (Italian) stance.

²² This posture is called *tribhanga* (Sanskrit) in South Asia.

²³ Vulnerability can also be expressed in life circumstances, like needing resources, protection, security, etc.

²⁴ The eyes are often open during prayer in the Hindu faith (Ellis, 2009).

perceived appearance that is the image of a relatively high status human male. We will see how this information can be useful in trying to understand what releases LSV Type I Religious Behavior in the non-vocal aspect of petitioning prayer.

WHAT DOES REVELATION TELL US ABOUT GOD'S APPEARANCE?

In various English translations²⁵ of both the Old Testament of the Judeo-Christian Bible and the New Testament of the Christian Bible God is referred to as LORD²⁶. In the English translation of the 99 Names of Allah in the Qur'an He also is called Lord as well as many synonyms for Lord. However, the case sensitive term «Father»²⁷ for God appears at least an order of magnitude more often in the New versus the Old Testament of the Christian Bible. It does not appear at all for any of the 99 names for Allah in the Qur'an. So both the Old Testament of the Bible and the Qur'an use words for the deity primarily related to LORD. The Christian New Testament, by contrast, relies heavily on the word «Father» for God.

WHAT ARE THE PROXIMATE CAUSES OF PRAYER?

The LSV behavior exhibited in the non-vocal aspect of petitioning prayer is a Type I Behavior that like all Type I Behaviors is governed by cultural-specific display rules which govern when, where, with whom and to what intensity the behavior should be executed (Eibl-Eibesfeldt, 1989). «When» refers to the time and frequency of the behavior. Petitioning prayer can vary from five times a day for devout Muslims to few to no times a day for «fallen-away» low religious intensity people. For some persons petitioning prayer is scheduled and routine. For other persons it is only as needed, such as in life threatening emergencies²⁸.

²⁵ Modern English translations and versions of the Old Testament of the Bible are derived from the Septuagint in the 3rd to 2nd century BCE (Old Testament Hebrew into Greek) and the Vulgate (Old Testament Hebrew and Greek and a non-Hebraic Aramaic addition of Tobias and Judith all into Latin) by Saint Jerome and others in the 4th century CE. The first early modern English Bible, condemned by both Church and State in England, was produced by Tyndale in the early 16th century. He used Greek and Hebrew texts for the Old Testament in addition to Jerome's Latin translation. Most of the 17th century King James Bible that is used widely today by Protestants is taken from Tyndale. Within Roman Catholicism the English Douay-Rheims Bible was issued in the late 16th (New Testament) and early 17th century (Old Testament). It derives from the 4th century Vulgate.

²⁶ In the Septuagint the Tetragrammaton *YHWH* in Hebrew was translated into the Greek *Kurios*, which in English means Lord. The earliest use of «LORD» for God in the Old English language in a religious context was in the 7th century CE by the English Bible translator, the Venerable Saint Bede, who followed the Jewish practice in Hebrew of substituting more generic deity term, such as *Adonoi* for the name of God, *Yaweh*, written as the Tetragrammaton *YHWH*, when read aloud. Wycliffe's 1384 vernacular Middle English Bible (translated from the Vulgate) used Lord for God. In Judaism, which only has the Hebrew Torah (Old Testament) and no official translation, there is no use of «LORD» for God. In some unofficial, modern English translations of the Torah God is sometimes replaced by non-gendered words such as «the Eternal» or «the Everlasting» (Susan Solomon, personal communication). Jesus is also referred to as LORD on numerous occasions in English translations of the New Testament. This use of LORD is more to proclaim Jesus' divinity by using a term previously used for God in the Old Testament as the God of the New Testament is increasingly being referred to as Father.

²⁷ The 1384 Wycliffe English Bible used *fadir* (Old Norse origin) for God, as in God the Father. The 1609-1610 version of the English language, Roman Catholic, Douay-Rheims Bible distinguishes a human person's «father» predominantly in the Old Testament from a synonym for God «Father» in the New Testament.

²⁸ The author is such a person (Feierman, 2009a, p. xi, first five lines).

Within the three Abrahamic-religion-societies, childhood misbehavior has often been associated with corporal punishment, most likely from an adult male and most often the father as the primary or ultimate punisher, who from the perspective of the child, is overwhelmingly more dominant and powerful (Abelow, 2009, 2011). From a psychobiological perspective when the child is corporeally punished, and because the child can neither escape nor hide, the child executes some variation of LSV Type I Submissive Behavior. Continuing in the psychobiological perspective, the appearance of LSV Type I Submissive Behavior in the child acts as a social releaser that tends to inhibit the father's aggressive behavior towards the child. As a result, the corporal punishment eventually stops.

From a behaviorist perspective the child's same behavior in the face of this type of corporal punishment is at first, presumably elicited, where the eliciting stimuli are aspects of the father's behavior, which include facial expressions, tone and volume of voice, and actual hits to the child. Once the elicited LSV Type I Submissive Behavior results in the termination of the father's corporal punishment then engaging in LSV Type I Submissive Behavior of the child becomes more probable, a process called negative reinforcement.

It has been said in jest that Freud, Margaret Mead and the Jesuits all realized independently many years ago that what is learned early life has an enduring effect on people, which is also called critical or sensitive period learning (Bailey *et al.*, 2001). In their early life children and adolescents also have similar experiences with submission in the context of peer interactions. Larger, stronger, more persuasive and more dominant children teach the child or adolescent the same long-remembered lesson about dominance and submission, a part of human social grammar that is also learned by children's interactions with adults, especially adult males.

God portrayed as a dominant, high status male Lord has many features in common with a child's dominant and corporally punishing father²⁹. As a result, through what behaviorists call «stimulus generalization», the execution of LSV Type I Religious Behavior in the non-vocal aspect of petitioning prayer is facilitated. However, by the time we get to the Abrahamic religions in historical times (Sanderson, 2009) the religion-specific behavioral sub-forms of the non-vocal aspects of petitioning prayer and the religion-specific and society-specific display rules are acquired both across and within generations primarily by religion-specific imitation and instruction (e.g., catechesis).

THE PARADOX

In both the Roman Catholic and Protestant English translations of the New Testament of the Christian Bible God is portrayed as Father [case sensitive] at an order of magnitude more than He is portrayed as LORD. In addition He is also portrayed as a «loving Father» in many Christian sermons. Yet, the non-verbal «body-language» behavior exhibited by Christians in the non-vocal aspect of petitioning prayer is not how most Christian, Jewish, and Muslim children of today relate to a truly loving father outside of the actual episodes of corporal punishment³⁰.

²⁹ Relative to the size of a young child an adult man is is a «supernormal» stimulus (Immelmann and Beer, 1989, p. 300).

³⁰ As of 2009, the only European countries still allowing childhood corporal punishment at home and in school are France and the Czech Republic. By contrast in The United States corporal punishment is allowed in all 50 states by parents and in 21 states in school. Corporal punishment of children is allowed under Islamic Sharia Law. Abelow (2009) points out the need to study the relationship between the decline

WHAT CAN WE THEN PRESUME ABOUT THE IMAGE OF THE GOD TO WHOM WE PRAY?

Most if not all men and women have inner sensations recalled from memory³¹ of the Gestalt- perceived appearance that is the image of other human beings toward whom most LSV Type I Behavior has been directed in the context of submission: potentially or actually threatening or aggressing, relatively high status, human males. Reproductive age and even post reproductive age, heterosexual women have an additional inner sensation of the Gestalt-perceived appearance that is the image of other human beings toward whom LSV Type I Behavior has been directed in the context of courtship: non-threatening, relatively high status, human males. In both cases, perhaps stronger for heterosexual women than for heterosexual men³², the LSV Type I Behavior was directed towards what is seen as the Gestalt-perceived appearance of the image of a relatively high status adult male, sometimes threatening and sometimes not.

Given that in the same species a particular Type I Behavior can be released with a different function in a different context by the same releasing stimulus, it is the inner sensation of the image of a relatively high status adult male, sometimes hostile and sometimes not, acquired through previous experiences in submission and heterosexual human female courtship that releases the LSV Type I Religious Behavior in the non-vocal aspect of petitioning prayer. *It is a reasonable presumption that this is our image of the God to whom we pray*³³.

RESOLVING THE PARADOX THROUGH HISTORY AND PRE-HISTORY

The behaviors used in the non-vocal aspect of petitioning prayer are not compatible with the majority of behaviors that most children of the three Abrahamic faiths show today to their fathers, especially if they are loving fathers. The exception would be during relatively rare times of corporal punishment. However, there is evidence (Abelow, 2009, 2011) that conditions for children in terms of abuse, abandonment and neglect from parents were more prevalent in earlier times in the Middle East and Roman Empire at the times the sacred Christian narratives were being written.

Going back even farther to pre-historic times *Homo sapiens* lived in somewhat egalitarian, multiple-adult-male and multi-adult-female hunter-gather groups for 95% of the time³⁴ since the species evolved, which was between 200,000 and 100,000 years ago

in childhood corporal punishment and the lessening of interest in traditional Christianity with declining church attendance across different countries. Corporal punishment of children was rampant at the time the New Testament was being written and could have influenced what was written (Abelow, 2011).

³¹ As a rather mundane example of the ability of inner sensation to recreate the experience of outer sensation from memory, the author lost his sense of smell about 20 years ago. Yet now, whenever the author sees goats – even if from far away through a closed window of a moving car – the smell of goats, which one might say is «quite memorable», comes into the author's subjective awareness as though the author were still able to smell.

³² This is an alternative to the males-are-more-risk-taking proposed biological mechanism (Miller and Stark, 2002) for why adult heterosexual women, even in their post-reproductive years, are more religious than adult heterosexual men.

³³ This reasoning is not dependent on whether a supernatural God created human beings in His image (Gen 1:26,27) or whether human beings created God in their image. If «image» is created in form, it is one of those minimally counter-intuitive religious juxtapositions, as the items are in two different ontological realms. «Image», as in *Imago Dei*, is more often interpreted in non-form functional terms in human beings having to do with will and reason.

³⁴ If *Homo sapiens* is 200,000 years old and we have only had single-male headed households for the past 10,000 years, then 10,000 divided by 200,000 is .05 or 5%.

in Africa (Ryan and Jethá, 2010). Single male headed family units only appeared relatively recently about 10,000 or so years ago with the dawn of horticulture and pastoralism. It is very likely that early human hunter-gatherer societies were communal breeding societies³⁵, which we see today in our two closest, living biological relatives, chimpanzees and bonobos (Dixon, 1998). In communal breeding societies actual paternity is uncertain. Juveniles shown some degree of submissive deference to all adult males, any one of whom might be their biological father.

When the LSV Type I Behavior was first used by early humans in the non-vocal aspect of petitioning prayer, most likely in ancestor worship, children would routinely have been showing LSV Type I Submissive Behavior to father figures, who would have been all adult males in the hunter-gatherer group. There is evidence that a number of religion's features were adaptive to early (Reynolds and Tanner, 1983) as well as modern (Bloom, 2009) human beings and could have evolved by natural selection (Feierman, 2009b). Although the exact millennia when religion evolved in hominids is unknown and controversial (Hayeden, 2003; Wunn, 2000), most historians of religion date religion's origins to much earlier than the dawn of horticulture and pastoralism in modern humans. In fact, because aspects of LSV Type I Religious Behavior are seen in almost all extant religions in human groups around the world about which the author has knowledge, it is probable that religion evolved in human beings before *Homo sapiens'* second emergence from Africa about 60,000 years ago (Rossano, 2009). So in pre-historic ancestral times when religion evolved³⁶ and in historical times when the New Testament was being written (Abelow, 2009, 2011) God's image would have been the appearance of a father figure in addition to being that of a high status and potentially threatening male, especially from the perspective of a juvenile. Today, at least for most children, threatening or aggressing adult male behavior is much less likely to be associated with persons who children associate with being their biological fathers. This is especially true in Western Europe.

CONCLUSION

Because of their stronger genetic underpinnings the basic form of Type I Behavior changes much slower over historical time periods in human beings than the more culturally-malleable-in-form Type II Behavior with which our symbolic language is expressed in writing and in speech. As a result, for most Christians of today the submissive-like and courtship-like LSV Type I Behavior used in the non-vocal aspect of petitioning prayer is a discordant communication with the predominantly Father image of God in the New Testament. The Father image is expressed through Type II Behavior that was used to write, translate and interpret the sacred narratives and with which they are preached today.

By contrast LSV Type I Religious Behavior in the non-vocal aspect of petitioning prayer is concordant with behavior towards a father image that children would have had for 95% of the pre-historic time that *Homo sapiens* has existed as a species as well as during historic times when the New Testament was being written (Abelow, 2009, 2010). So in a way, using and associating the word Father for God in the New Testament is like «coming home» to how things were in ancestral pre-historic times with words that are quite concordant with one's prayerful body-language behavior.

³⁵ In a communal breeding systems male: male competition is primarily at the level of «sperm wars» within the female reproductive tract. The evidence is reviewed in Ryan and Jethá (2010).

³⁶ Called the Environment of Evolutionary Adaptedness (EEA) by evolutionary psychologists.

The author is obviously aware of New Testament and Christian theological writing on the Trinity and the idea that God is the Father of Jesus, who is also divine³⁷. However, as in the Lord's Prayer, also known as the Our Father or the *Pater Noster*, He (God the Father) is also conceptualized as Our Father, a phrase that seems comfortable to us as it is compatible with almost all of our pre-historic roots for reasons explained.

SUMMARY

Over the past few millennia the study of God has been the purview of philosophers and theologians. Theologians have used methods related to philosophy and revelation with a commitment to arguments of authority and truth values embedded within their particular religious tradition. By contrast a number of non-theological disciplines – sociology, anthropology, history, psychology, economics and even biology – have also contributed to our understanding of religion throughout the 20th century. The non-theological disciplines that study religion scientifically coalesce under the umbrella of the Society for the Scientific Study of Religion (SSSR), whose *Journal for the Scientific Study of Religion* (JSSR) specifically states in the Author's Guidelines that the journal does not publish «theological treatments of religion». Said differently, theology, which literally means the study of God, is «off limits» for scientific studies. There are other more «daring» organizations, such as the European Society for the Study of Science and Theology (ESSSAT) that permits the study of God through science as well as looking at the influence of science and theology on each other.

Within the scientific discipline of evolutionary psychobiology the study of God was approached from the perspective of methodological naturalism by using observation and reasoning to answer the question, «What is the image of the God to whom we (members of the three Abrahamic faiths) pray?» Revelation, as expressed in the sacred narratives of the Bible and Qur'an, was just used as a source of information whose truth value was not an issue. At the end of the article the two methods – science and theology – came together, revealing and then resolving a discordant paradox between words and body language³⁸.

In summary the Image of God in the Old Testament of the Bible as well as in the Qur'an is primarily that of a high status, sometimes threatening or aggressing Lord. By contrast in both the Roman Catholic and Protestant English translations of the New Testament of the Bible the term «Father» is used for God an order of magnitude more often than the term «LORD». However, when Christians engage in the non-vocal aspect of petitioning prayer their body language – which makes them lower *or* smaller *or* more vulnerable – is much more similar to the body language used by both men and women in submission and used by heterosexual women in courtship. It is not typical of the body language one observes today in most members of the three Abrahamic faiths as they relate to their biological father, no matter what their age. This creates an apparent discordant paradox.

How the paradox developed can be understood through an appreciation of the type of social group in which *Homo sapiens* resided and in which human religion evolved,

³⁷ The word *Abba*, which means «Father» in Aramaic, is attributed to Jesus referring to His Father in Heaven three times in the New Testament: Mark 14:36, Romans 8:15, and Galatians 4:6. Hebrew speaking Jewish children in Israel today call their father *abba*.

³⁸ In general when there is discordance between written or spoken words (Type II Behaviors) and the expressive behaviors of body language (Type I Behavior), the probability of truthful communication is higher in body-language (Ekman, 1991).

which is the multi-adult-male and multi-adult-female hunter-gather group that most likely would have engaged in what is called «communal mating». This is the mating pattern seen today in our two closest non-human relatives, chimpanzees and bonobos (Dixon, 1998). In communal mating societies adults of both sexes have preferred but not exclusive sexual relationships. There are multi-pair matings for both adult males and adult females. As a result, paternity is always uncertain, which causes all juveniles to relate to all adult males with both submissive deference and paternal-seeking behavior. This pre-historical time in our evolution as well as in historical times when the New Testament was being written (Abelow, 2009, 2010) is when the father figure and the potentially threatening and aggressing adult male were one in the same. Today, for most persons they are discordant, which creates a paradox when the body language of Christians resemble how both men and women behave towards a relatively high status, dominant, potentially threatening or aggressing adult male and how women behave towards a non-threatening and relatively high status adult human male. These are not the types of body language that today we associate with interaction with our biological father no matter what our current age. However, they were the types of behaviors that juveniles would have displayed towards father-figure adult males in the pre-historic hunter-gather social groups in which religion evolved and towards fathers in the historic period when the New Testament was written.

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REFERENCES

- ABELOW (2009), «Religious Behavior as a Reflection of Childhood Corporal Punishment». In: JAY R. FEIERMAN (ed.), *The Biology of Religious Behavior: The Evolutionary Origins of Faith and Religion*, Santa Barbara, California: Praeger/ABC-CLIO, pp. 89-105.
- (2011), «The Shaping of New Testament Narratives and Salvation Teachings by Painful Childhood Experience», *Archives for the Psychology of Religion* 33(1): 1-54, 2011.
- BAILEY, DONALD B.; JOHN T. BRUER, FRANK J. SYMONS and JEFF W. LICHTMAN (eds.) (2001), *Critical Thinking about Critical Periods*, Baltimore, Maryland: Bookes Publishing Company.
- BLOOM, MICHAEL (2009), «The Reproductive Benefits of Religious Affiliation». In: EKART VOLAND and WULF SCHIEFENHÖVEL (eds.), *The Biological Evolution of Religious Mind and Behavior*, Heidelberg: Springer, pp. 117-126.
- DIXON, A. F. (1998), *Primate Sexuality: Comparative Studies of the Prosimians, Monkeys, Apes and Human Beings*, NY: Oxford University Press.
- EIBL-EIBESFELDT, IRENÄUS (1975), *Ethology: The Biology of Behavior*, 2nd edition, NY: Holt, Rinehart and Winston, Inc.
- EIBL-EIBESFELDT, IRENÄUS (1989), *Human Ethology*, NY: Aldine de Gruyter.
- EKMAN, PAUL (1991), *Telling Lies: Clues to Deceit in the Marketplace, Politics and Marriage*, NY: W. W. Norton & Co.
- ELLIS, THOMAS B. (2009) «Natural Gazes, Non-Natural Agents: The Biology of Religion's Ocular Behaviors». In JAY R. FEIERMAN (ed.), *The Biology of Religious Behavior: The Evolutionary Origins of Faith and Religion*, Santa Barbara, California: Praeger/ABC-CLIO, pp. 36-51.
- FEIERMAN, JAY R. (2009a), «The Evolutionary History of Religious Behavior». In: JAY R. FEIERMAN (ed.), *The Biology of Religious Behavior: The Evolutionary Origins of Faith and Religion*, Santa Barbara, California: Praeger/ABC-CLIO, pp. 71-86.

- FEIERMAN, JAY R. (2009b), «How Some Major Components of Religion Could Have Evolved by Natural Selection». In: ECKART VOLAND and WULF SCHIEFENHÖVEL (eds.), *The Biological Evolution of Religious Mind and Behavior*, Heidelberg: Springer, pp. 51-66.
- (2011), «Accepted for publication in one of the two European Society for the Study of Science and Theology (ESSSAT) Yearbooks». Will appear in either *Studies in Science and Theology* or *Issues in Science and Theology*. A Natural Science Search for the God to Whom We Pray.
- HAYDEN, BRIAN (2003), *Shams, Sorcers and Saints*, Washington, D.C.: Smithsonian Books.
- IMMELMANN, KLAUS, and COLIN BEER (1989), *A Dictionary of Ethology*, Cambridge, Massachusetts: Harvard University Press.
- LOEWENSTEIN, WERNER R. (1999), *The Touchstone of Life: Molecular Information, Cell Communication and the Foundations of Life*, Oxford: Oxford University Press.
- MANDELL, A. J. (1980), «Toward a Psychobiology of Transcendence: God in the Brain». In: R. J. DAVIDSON and J. M. DAVIDSON (eds.), *The Psychobiology of Transcendence*, NY: Plenum Publishing, pp. 379-464.
- MILLER, ALAN S., and RODNEY STARK (2002), «Gender and Religiousness: Can Socialization Explanations Be Saved?», *American Journal of Sociology* 107:1399-1423.
- OMARK, DONALD R.; F. F. STRAYER and DANIEL G. FREEDMAN (eds.) (1980), *Dominance Relations: An Ethological View of Human Conflict and Social Interaction*, NY: Garland STPM Press.
- OVIDE, LLUIS (2009), «Is Religious Behavior “Internally Guided” by Religious Feelings and Needs». In: JAY R. FEIERMAN (ed.), *The Biology of Religious Behavior: The Evolutionary Origins of Faith and Religion*, Santa Barbara, California: Praeger/ABC-CLIO, pp. 141-156.
- REYNOLDS, VERNON, and RALPH TANNER (1983), *The Biology of Religion*, London: Longman.
- ROSSANO, MATT, «The African Interregnum: The “Where”, “When”, and “Why” of the Evolution of Religion». In: ECKART VOLAND and WULF SCHIEFENHÖVEL (eds.), *The Biological Evolution of Religious Mind and Behavior*, Heidelberg: Springer, pp. 127-141.
- RYAN, CHRISTOPHER, and CACILDA JETHÁ (2010), *Sex at Dawn: The Prehistoric Origins of Modern Sexuality*, NY: Harper/HarperCollins Publishers.
- SANDERSON, STEPHEN K. (2009), «The Evolution of Religious Behavior in Its Socioecological Contexts». In: JAY R. FEIERMAN (ed.), *The Biology of Religious Behavior: The Evolutionary Origins of Faith and Religion*, Santa Barbara, California: Praeger/ABC-CLIO, pp. 3-19.
- SHANNON, C. E. (1948): «A Mathematical Theory of Communication», *Bell System Technical Journal* 27:379-423 and 623-656, July and October, 1948.
- TIGER, LIONEL, and MICHAEL MCGUIRE (2010), *God's Brain*, Amherst, NY: Prometheus Books.
- WUNN, I. (2000), «Beginnings of Religion», *Numen* 47:417-452.

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