

NATURAL DESIGN AND HUMAN DEVELOPMENT:  
WASKOM'S PARADIGM OF WHOLENESS

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Abstract

This article describes a paradigm that relates natural design and human development. Part One outlines the foundations of the paradigm, its premises and its grounding in other sciences. Part Two outlines key developmental and pedagogical considerations that follow from the premises. Part Three offers conclusions and recommendations for further study.

The author is indebted to the late John Waskom, Ph.D., for his inspiration in initiating this entire consideration. The ideas presented here originated with him, although none were published previously by him. His work in the fields of science, education, and psychology was visionary in its scope, yet solid in its application, as his pupils, colleagues, and family would attest.

NATURAL DESIGN AND HUMAN DEVELOPMENT:  
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This paper describes a unique paradigm of human development developed by the late John D. Waskom, Ph.D. In his many years of studying structure (as a geologist) and human growth and behavior (as a parent and counselor), he came to sense the possibility that human development was intended to match the natural order of the material universe. Dr. Waskom passed away before writing a long-awaited book on this all-encompassing paradigm. He did, however, leave a sizable collection of audio tape recordings of lectures which this author has used, along with personal recollections, to reconstruct the work. This paper will attempt to convey the content of those lectures, with appropriate language and explanatory notes to address special concerns of the present reading audience. The following sequence will be used:

Part One: Foundation introduces the paradigm as it relates to natural mathematical proportion and natural numerical sequencing;

Part Two: Propositions and Problems discusses the paradigm in terms of issues in human development and education;

Part Three: Conclusions discusses further implications.

Finally, a special note of appreciation is extended to Dr. Waskom's family, whose trust in him and in this author has allowed the work to develop and continue.

Part One: FOUNDATION

Natural Design and Mathematical Proportion

For centuries, science has followed a two-edged assumption in its quest to uncover the truths of our universe. It is assumed that 1) every question has a simple answer and 2) all the answers can coalesce around a unifying or all-encompassing theory. Scientists create theories of simplicity and unity and formulate new ones when the old ones become strained with corollaries and exceptions. Ptolemy's earth-centered universe crumbled under such weight, while Kepler's sun-centered universe was buoyed by its ability to explain things simply. In this century, the Unified Field Theory, uniting forces as diverse as electromagnetism and gravity, will likely replace Newtonian-esque theories if it can establish firm and simple relationships among the forces.<sup>1</sup>

Perhaps no culture in history has been so committed to this search for simplicity and unity as the ancient Greeks. They came upon many truths in mathematics, which became the basis of their -- and our -- art, architecture, music, and science. Waskom found one of these to be fundamental to physical structure and growth: the irrational number 1.61803..., or phi. It is extraordinary in many respects. For instance, its inverse (or prime) is .61803 or phi minus one, unique among numbers. More importantly, phi defines a relationship found throughout nature, from the macrocosm to the microcosm.

Waskom enjoyed demonstrating how the phi ratio determines the position of facial features and many body proportions, regardless of body size or shape. Phi would prevail in nearly every case, for it is a "truth" of human design. He also noted that the Greeks used phi (or the Golden Mean) all through their arts. He reasoned that if an object were composed of the same proportions as the viewer, it would be perceived as balanced and natural, which is what observers say about Greek creations.

To explain this preference, Waskom drew upon Huntley, who suggested that as the eyes view the sides of a Golden Rectangle, they note a scan-time ratio of phi, which is then interpreted as pleasing. Studies have established the aesthetic preference for phi-proportioned objects. Similar studies have revealed that the most pleasing auditory interval, outside the unison and octave, was the major sixth. This too has a ratio of 1.6, or phi.<sup>2</sup>

As stated earlier, the phi proportion is observable in nature as well as in the human body. Waskom loved to relate it to the spiral and its occurrence in plants, seashells, galaxies, and the DNA helix (which also contains a phi ratio between the length of its "rungs" and the spacing between them.<sup>3</sup>) To Waskom, phi was a simplicity of supreme significance, for it spanned the largest and smallest of natural phenomena, with human design in between.

When he called attention to the fact that young children unconsciously used phi proportions in their artwork, Waskom was affirming that unspoiled humans possessed a natural genius for living "in sync" with the universe. He sensed that if he could establish a relationship between phi and human psychological growth, he could begin to describe a natural pattern of developmental genius throughout the lifespan.

### Natural Design and Numerical Sequence

To describe human development with phi, Waskom used mathematics again. A number sequence attributed to Fibonacci, a Renaissance mathematician, reveals another useful form to this perfect geometry. Starting with 0 and 1 (a natural starting set), adjacent numbers are added to produce:

0, 1, 1, 2, 3, 5, 8, 11, 21, 34, 55, 89, 144, ...

These numbers appear constantly in natural design, such as in the number of concentric spirals in a pinecone or sunflower, and the number of seeds in each spiral. But even more remarkable is that as the Fibonacci sequence get larger, the ratio between adjacent numbers comes closer to

phi. (For example,  $89/144 = .618\dots$ ) Thus the Fibonacci number sequence is a way to describe the Golden Mean of natural design as a progression of numbers.

The significance of this will be made clear below, but first Waskom's interpretation of the sequence or progression must be discussed. He saw each Fibonacci number as the beginning point for a new subset or cycle of numbers. Each whole number preceding a Fibonacci number was then the completion point of the previous subset or cycle.<sup>4</sup> Visually, this can be represented as:

End of old cycle:	4	7	12	20	33	54	88					
	\	\	\	\	\	\	\					
Start of new cycle:	0	1	1	2	3	5	8	13	21	34	55	89

To illustrate, Waskom pointed out human applications that have become common in our culture. For example, a dozen (12) is considered a complete set and a deck of cards is complete with fifty-four (including the jokers). In music, the octave scale actually has only seven notes, for the eighth is the beginning of a new octave. Likewise, the chromatic scale's thirteenth note begins the next octave. Even the 88-note piano keyboard can be justified.

It is understandable that humans would use this natural progression in unconscious ways, since it corresponds to their own physical make-up. And as stated earlier, creators and their audience naturally gravitate toward design which contains their own design. So it was not surprising to find social phenomena fit into this scheme. (Waskom noted that standard credit cards are Golden Rectangles, making them aesthetically pleasing to look at -- and use! Was this a conscious design decision? Madison Avenue will never tell.)

Using the Fibonacci sequence, Waskom found a natural progression of human development revealing itself. He simply looked at the number chart above and imagined those numbers as ages in a person's life. The numbers in the bottom row would represent age markers for the

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beginning of cycles or stages of development. The numbers on the top row would represent the end points of each cycle or stage. Practiced eyes in the developmental field will see familiar numbers, numbers which have been traditionally used to mark stages of the life cycle, both physiologically and socially.

(Waskom marked the number 0 as conception, the first number 1 as birth (the nearest whole number to the gestation period), and the second number 1 as the individual's first birthday. This fit well with traditional Chinese age-reckoning, in which a child is considered a year old at birth.)

Thus it could be asserted that the numbers that mark the milestones of human life are the same numbers that express the perfect proportion of nature. Reduced to an assertion of simplicity and unity, under proper conditions design and development are one, since both can be described with the same natural progression. This, then, was to become the premise underlying Waskom's paradigm for thinking about development and learning. From this point, he set out to map the psychological, social, spiritual, and educational territory of natural human progression.

Part Two: PROPOSITIONS AND PROBLEMS

1. The Purposes of Life and Learning

Typically, educators shy away from considerations as esoteric as this. But armed with a paradigm of natural design and progression, Waskom could and did address this most basic of issues.

Proposition: The unity of design and purpose

Waskom reasoned that if design and development are one, and if design is constant throughout the universe, then development must be constant as well. Human life and learning would be for the same purpose as everything else that grows and changes in the design, from molecules to galaxies. Accepting the inability of the human mind to actually fathom the unknown, Waskom generalized that purpose lies within the fulfillment of design. As a geologist, he saw purpose in the mineral kingdom as the fulfillment of geometric design, which for crystals even included growth. For plants, purpose involved completing the design of a life cycle: growth, reproduction, and demise (which enriches the next generation). For animals, purpose seemed to include the same cycle, plus instinctive behaviors and ingrained social patterns.

For humans, fulfillment seemed to include all the above, plus the component of learning: mental, emotional, and spiritual development of self-awareness and self-effectiveness. In sum, human purpose and fulfillment could be described as the full development of character, the finest of which Waskom saw as mental acuity, emotional clarity, social appropriateness, spiritual inclusiveness, and integrative action.

In this regard, the development and fulfillment of human purpose would be directly related to character development, which Waskom saw as a function of sensing. In other words, character developed as gross and fine senses developed. Thus human purpose would include natural urges for sense development and natural behaviors and attitudes for character development.

## 2. Natural Sense Urges and Character Traits

Waskom realized that in a society so devoted to artifice, it may be difficult to ascertain what a natural behavior is. Yet natural urges and behaviors needed to be uncovered, for they would reveal what individuals would naturally strive to achieve at each stage.

### Proposition: The unity of perception and maturation

Some further explanation is needed regarding Waskom's view of character development. This will then set a framework for the definition of natural behaviors and interests, since he interrelated fulfillment of purpose, natural character expression, and the fulfillment of developmental urges.

Waskom maintained that the most important factor in character is sensing (physical, cognitive, spiritual). How one perceives influences how one expresses or behaves. Thus an individual's perception will define what kinds of thoughts and behaviors are possible, and those will define the boundaries of character formation at any given stage. In brief, character development is dependent on the development of sense perceptions.

In this context, sense is meant to include perception at all levels, from the sensorimotor to the more subtle senses of empathy, discrimination, and self-understanding. At the apex, Waskom placed "common sense," which he defined as the sense of fitness. Common sense would cause one to integrate all perceived factors and offer the most unselfish, constructive action.

Thus character development could be seen as a series of internal and external tasks or urges. The internal tasks would consist of increasingly refined perceptions of reality and appropriateness. Subsequent external tasks or behaviors would then need to be consistent with those perceptions for character to form properly. Waskom deduced that humans at each stage are, by design, driven to refine the available senses and act upon them. These would be "natural sense urges and character traits," age-specific yet cumulative.

A question arises: Do other paradigms already explain these things? To answer, we can look at Waskom's components and synthesis thus far.

A) Perception: Waskom's emphasis on perception seems to be related to both cognitive and humanistic psychologies. Cognitivists assert that we construe and construct reality to fulfill an innate drive for reason and order, a primarily intellectual process.<sup>5</sup> (Kohlberg applied cognitive theory to the development of moral reasoning,<sup>6</sup> but this was still more intellectual than what Waskom meant by character development.) Humanists assert that we construe and construct reality to fulfill an innate drive for security, esteem, and creativity.<sup>7</sup> This is primarily an emotional process, although humanists claim to be concerned with the "whole person."

Waskom seems to have bridged the gap between cognitive and humanistic psychologies, using the notion of perception to highlight an overarching view of development. He was not very concerned with intellectual development, except as it contributed to perceptual clarity, nor did he cater to emotional needs, seeing emotional fulfillment as a natural by-product of clear perception and character expression. So whereas it might seem convenient to mark him as a compromiser, he was actually staking new ground.

B) Character: Waskom's emphasis on character as a composite of perceptually-developed sensibilities might appear to derive from traditional Judaeo-Christian ethics, much like conventional morality training.<sup>8</sup> If this is, indeed, the sole logic or stance Waskom used to define character, the entire paradigm could suffer from cultural narrow-mindedness. However, moral conventionalists emphasize direct training of admitted cultural conventions, while Waskom eschewed convention and emphasized indirect moral training through perceptual challenge (see Proposition 3). So we might well ask: Are mental acuity, emotional clarity, and common sense only valued in our culture, or are there universal (albeit culture-specific) precedents for this perspective? Can we be safe in asserting that this paradigm is universal, pending cross-cultural verification? Although some might argue differently, it may be to our benefit to make the assertion and fill in the gaps later.

C) Stages: We might compare Waskom's stage theory with those of Erikson and Steiner. Erikson conceived of innate developmental tasks or urges, but these were psychological (Freudian) coping events.<sup>9</sup> Waskom conceived of tasks as perceptual, and thus character-forming and purpose-finding, events. The difference is important, since it dispels the notion that the best humans can do is cope, replacing it with a notion that humans can know health, dignity, and purpose if they fill out the urges of their senses.

Steiner's view of development came closer to the idea of fulfilling urges to find purpose. Indeed, Waskom expressed great affinity with this man's spiritual outlook and educational applications (as will be seen later), but differed with him at this juncture. Steiner conceived of the individual's development as bound to planetary and thus cultural evolution.<sup>10</sup> To him, this was noble; to Waskom, this was stifling. Although he too recognized planetary evolution, he felt that mature perception and action would automatically keep the individual harmonious with it. Binding the individual too closely to past culture might cause perceptual imprisonment, possibly forcing individuals to negate inner sensings if they crossed the grain of tradition. Waskom above all wanted perception to be fresh and original, never dictated by authority or precedent, even subliminal or lofty ones like culture. He realized that cultural influences could not be prevented, but cultural mindsets could be.

D) Synthesis: Finally, Waskom's interrelation of perception, stage development, and character formation can only be seen as unique, an amalgam that was truly his own. This presents great promise, but some problems as well, for it is as though he were introducing an entirely new psychology, complete with its own premises and possibilities, biases and beliefs. It is beyond the scope of this paper to provide more detail, but for future purposes Experiential or Perceptual Psychology is being considered as a label.

### 3. Natural Stage Characteristics

Working with the notion of stage-defined urges and tasks, Waskom turned again to the Fibonacci sequence to match natural tasks with natural stages.

Proposition: Perceptual growth through stages

Waskom developed an outline for a progression of natural sense and character development through the pre-adult years. This author has refined it somewhat to maintain consistency of logic and presentation through the entire life cycle. (See Figure 1.) Under this scheme, Waskom divided the life cycle into eight stages, each with unique tasks in sense and character development.

While there may be theoretical precedents or derivatives for his stages and their components, Waskom based much of the work on his own observations and interactions with persons of all ages, including his own five children. It should also be noted that Waskom knew there would be individual differences within natural limits; the occurrence of behaviors and transitions could vary among individuals.<sup>11</sup> (Anything outside natural limits always raised suspicions of emotional or intellectual tampering by parents or teachers.) What follows, then, is a "natural framework" for stage development as he conceived it.

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### NATURAL CYCLES OF MATURATION

<u>Stage</u>	Foundation/Gestation	Early Child	Mid-Child	Adolescent	Young Adult	Mid-Adult	Elder	
<b>Theme</b>								
<b>Fibonacci #:</b>	0	1 1 2 3 5	8	13	21	34	55	
<b>Human age:</b>			Birth	8	12-14	21	32-35?	55-60?
<b>Physical attributes</b>	Pre-parent health in body/mind/ relation	Conception; life; awareness	Walk; talk; think (rudiments)	Eyes/teeth full-formed; thymus atrophies	Puberty, sex drive; muscles develop	Full grown; peak of strength & power burst	Stamina; changes from aging (make adjustments)	Decrease in agility/tone de-emphasize physicality
<b>Meta-sense urges and development of perception</b>	<u>Choice</u> Sense of fitness, timing & patience; mutual & mature decision	<u>Imprinting</u> Sound, light emotions: initial "matrix of the possible"	<u>Will</u> Gross sense control: eyes, touch, movement, "aliveness" leading to autonomy	<u>Feeling</u> Refine to metaphoric transformations of character, as courage, compassion, clarity, etc.	<u>Thinking</u> Make sense thru meta-cognition, conversing, & "feeling" flow of own thought ==> discernment	<u>Action</u> Sharpen/use perception skills to learn about intimacy in relations, work, adult life skills	<u>Refining</u> Facility with adult world & creative processes; sense of finesse & service	<u>Fulfillment</u> Less concern with busy world; sense essences & rhythms of life; sense of value & integration
<b>Character development and education</b>	Pre-parents' character & home climate: stability, patience, assurance, calm (major components of "matrix of the possible")		Imitation of parents in speech & attitudes	Observation, memory used to develop responsible decisions & sense of honor & authority	Thinking & processing skills; use with stress of emotions; shift focus to peers & mentors	Learn to initiate & follow creative processes; evaluate own values & behavior	Poise in all dealings; sense fitness & integrity; settle/fill past voids	Integrate previous development, leading to wisdom, humor, acceptance, vision
<b>Curricular themes to encourage meta-sense</b>	<u>Pre-parenting education:</u> Stages, responsibilities, nutrition, atmosphere	Birthing, care, child developmt.	Imitation & repetitive activities ==> healthy habits; use of rhythm, movement, music, touch	Nature, math, science: patterns of design & speaking, drama, then read/write	Academics plus arts & vocational, industrial, life skills; follow out interest to expertise	Personal & social skills for use in job, groups, relations	Learn to administer & nurture beyond self (family, profession, society)	Learning for enjoyment & perspective; learn to release world attachments, sense own fulfillment

**APPROPRIATE RITUAL/CEREMONY AT EACH TRANSITION; USE OF TRIAL & SYMBOLISM; REPRESENTATION OF FAMILY, COMMUNITY, SPIRIT**

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Foundation (planning to conception) -- Pre-parents make choices, consciously or not, regarding the conditions of pregnancy and the quality of the home atmosphere. These choices create a setting in which the future child will develop senses and character. Thus this stage establishes the "matrix of the possible" (author's term), since the conditions that are created set parameters for what the child can and will perceive and act on. This matrix can be likened to a perceptual skeleton, around which the child will "flesh out" senses and character. Waskom felt that the ideal or natural matrix would be formed of conscious, mature decisions for having a child and conscientious, loving bonds of relatedness in the home atmosphere.

Gestation (conception to birth) -- Pre-parents begin imprinting patterns of emotion, speech, attitudes, and preferences on the fetus. This further defines the matrix of the possible, as the forming child literally swims in the chemical atmosphere of the mother's emotions and reacts to adult stimuli from outside the womb. Ideally, pre-parents would consciously create a matrix of pleasant yet realistic stimuli for the child. (Although there are well-established animal studies on imprinting, Waskom often referred to Verny's more controversial work on human imprinting.<sup>12</sup>)

[Note: From here, Waskom focused on the child's sensory tasks. He spoke of these in two contexts: isolated senses (receptive, motor, etc.) and pervasive, stage-defining senses, which the author has termed "meta-senses." Waskom's affinity with Steiner is apparent in his borrowing of the terms Will, Feeling, and Thinking for the initial meta-senses. However, to Steiner these were metaphors for body, soul, and spirit.<sup>13</sup> To Waskom, these terms had broader and perhaps more practical meanings, as outlined below.]

Early Childhood (birth through age seven) -- Waskom maintained that the young child is, in the natural state, a physical creature. (He considered intellectual stimulation before the age of eight criminal.) He saw the child using physical and intuitive senses to develop the meta-sense of Will (cf. Erikson's tasks of autonomy and initiative, but note different goals). As Will is allied to a sense of Self, various self-defining senses are involved:

\* gross receptive senses, such as sight, touch, and taste, for which the goal is understanding and mastery of stimuli;

\* gross motor senses, such as balance and movement, for which the goal is mastery of the environment; and

\* sentience, or the understanding of being alive, for which the goal is understanding of feelings, purpose, etc. (and which the child "practices" by attributing life force to inanimate objects, such as rocks and dolls).

As these senses are developed through imitation of parents' behaviors, speech, and attitudes, a sense of Will or Self emerges. Waskom admonished parents to monitor the quality of what the child imitates and the quality and quantity of access the child has to sensory stimuli and motor apparatus.

Middle Childhood (ages eight through twelve) -- Waskom saw the child now being innately urged to develop the meta-sense of Feeling. This emerges as the physical or receptive senses refine to a point at which the child comes into natural understandings of motives, emotions, and abilities (cf. Erikson's task of industry). Waskom saw this as the natural way to produce children's moral character. The author has coined the term "metaphoric transformation" to describe this process. Examples of such transformations include:

\* sight transforming into vision and courage, i.e. "seeing" moving from passive observation to a desire to act on perception;

\* taste transforming into wise choices and clarity, i.e. movement from rather passive preferences to active choices based on formulated ideas; and

\* warmth transforms into compassion, in which a passive desire for physical warmth and security moves to active giving of emotional warmth and friendship to other living things (including pets and "best friends").

[Note: These examples are not meant to imply that there is a one-to-one correspondence between primary and transformed senses. Obviously there would be much overlapping, with various senses contributing to each transformation.]

Waskom noted that at this time, cognitive abilities have expanded to include skill in observation and memory. Ideally, these would be trained to aide the child in developing the senses mentioned above, which would in turn aide in the transformations that define emerging character traits such as personal authority and a sense of personal and relational honor.

Adolescence (ages thirteen through twenty)-- The young person is now urged to develop the meta-sense of Thinking, which includes:

\* hearing and speaking, in which the child can come to know the impact of listening that is open and empathetic and the speaking of words which are emotionally appropriate and grounded in actual experience; and

\* metacognition, in which the child comes to know how a thought process "feels" as it develops and refines.

Ideally, these senses would lead to a sense of discernment or well-grounded discrimination. This in turn would lead to character traits of thoroughness and open-mindedness, which could be useful as the individual moves away from the conventions of family norms.

Young Adulthood -- Action or Application is the meta-sense of this stage. Here, the young person is urged to gain a sense of usefulness, proficiency, and intimacy in the adult world (cf. Erikson's more constricted conception of intimacy). This would involve sensing proper relationship with people and things, for it is now up to the individual to set priorities and values. To Waskom, this meant gaining an ability to understand, monitor, and use the emotions, rather than being controlled by them as in previous stages. Such management of self and environment (or "creative processes") would lead to character traits of circumspection and introspection in a world that seems to offer unlimited possibilities and no guidelines for ethics or behavior.

Middle Adulthood --The meta-sense of Refinement emerges. Here, the individual is urged to "work smarter, not harder" (cf. Erikson's task of generativity). This means that expertise is leading to ease, and the vicissitudes of life become more anticipated and better managed. With this sense of finesse comes a natural sense of service, as the individual feels impelled to help others (at home, work, or in the community) find their own ease with life processes. These sense acquisitions of the middle adult would ideally lead to the character trait of integrity: consistent follow-through on what is perceived to be appropriate, regardless of personal preferences. This is often called "strong character," for it exemplifies a quality that is associated with leadership and high ethical standards.

Under less-than-ideal conditions, middle adults also seem to be urged to resolve personal hurts or voids of their past. During this time, imprinting or programming by parents and other authority figures may creep toward the surface for examination. The resulting discomfort may trigger "mid-life crises" based in a sense of blame and hopelessness, or a "growth spurt" based in a sense of responsibility and determination to make the most of the second half of life. Waskom addressed this issue with many individuals and groups.

Elder Years -- Elders are urged toward the meta-sense of Fulfillment (cf. Erikson's task of integration). With physical decline, the individual is compelled to use those senses that can increase rather than decrease with age. These are more subtle senses, pertaining to the perception and appreciation of deep rhythms of the life process. Less involved with achievement and more sensitive to essences, elders can cultivate a sense of value in the mundane and a sense of integration regarding their own life histories. This would engender character that expressed wisdom and humor, so it would not crack open to reveal a frustrated child (senility) underneath. It could stand up to physical decrease and find acceptance, not horror, in life's culmination.

#### 4. Parenting, Teaching, and Community Support

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Waskom saw parenting, teaching, and community action as three critical domains in an individual's development. Through them, adults can present appropriate experiences at each stage. Then the child can stay "in sync" with natural design, and the design does not become distorted from premature or delayed exposure. (For example, Waskom knew three-year olds can be taught to read felt such instruction would short-circuit delicate developmental rhythms and processes, either physiologically, cognitively, or socially.)

The problem here is that there may not be sufficient clarity among individual adults to correctly ascertain what is needed to help others develop. That may sound harsh, but we must acknowledge that adults have an enormous amount of past programming, full of cultural and psychic "shoulds" that may not be in step with natural life rhythms. Does this throw the proverbial cold water on the whole discussion and make it merely academic but impractical, or is there still a way to determine parenting, teaching, and community action forms that can support natural development?

### Proposition:

The premise used here to break this dilemma is one that Waskom noted as a theme in middle adulthood. There are those individuals who have taken great strides toward eliminating past programming that created personal distortions. These individuals have then moved on to develop parenting, teaching, and community forms which attempt to prevent future programming distortions and encourage more natural development. Accepted as well as speculative forms that Waskom investigated are discussed below:

Foundation and Gestation -- Birthing classes are popular everywhere, but where are there classes on family life? Where do couples learn to communicate feelings and needs; to maintain a quality relationship and home environment; or to plan financially, nutritionally, and emotionally for pregnancy and beyond? Waskom proposed that such training be available for every couple.

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Early Childhood -- Experts in this field readily acknowledge the immense physicality of the early years. With this in mind, natural development would be served best through rhythm and motion, not through intellect. (Waskom even warned against answering every question a young child can imagine.) Imitation and repetitive activities using music, movement, and touch would most benefit the development of Will by aiding in gross sensorimotor mastery. Montessori's repetitive activities and Steiner's eurythmy (combining phonetics, movement, and form) are prototype activities of such a curriculum.<sup>14,15</sup>

Middle Childhood -- As the meta-sense of Feeling comes into play, the curriculum would naturally shift. Waskom urged parents and teachers to use the child's growing powers of memory and observation to help build a feeling reservoir of natural behaviors and consequences. This would lead to the making of wise choices and a sense of authority. Natural science and math would instill appreciation of patterns of design and relationship. Language emphasis would be on speaking and drama, with reading later (allowing time for vision to reach acuity around age 8). Within a context of rich interaction, this curriculum would help the child gain senses of mastery, courage, clarity, and compassion.

Adolescence -- With puberty comes a host of new sensations and urges, and a natural curriculum would foster these. Academics would emphasize thinking skills. Further relevance would be offered through industrial, vocational, and practical life skills. Individual interests would be given space to develop, so that thought could be honed to a point of real mastery in a chosen area. Also, thinking skills would be applied to emotional turmoil, a skill that would find lifelong application. In these ways, the urge toward Thinking could be fulfilled while allowing for increased independence.

Young Adulthood -- As the individual enters the adult world, curriculum would match current needs by emphasizing practical skills. Generally, this would mean learning to initiate and follow creative processes to completion. This would involve experiential learning of skills in group interaction, communication, emotional processing, and self-evaluation. Such a curriculum

would help the individual move gracefully through professional and personal relationships, thus serving the meta-sense of Action/Application.

Middle Adulthood -- The mature individual may benefit from a curriculum that emphasizes handling increasing responsibility. This person may be called on to manage large family or work-related processes, community projects, or even informal counseling, and this would mean learning the skills of management. However, this kind of management would focus on people and how they functioned in creative processes. For the person who has learned to handle personal issues with integrity, this larger responsibility would be a natural next step, thus fulfilling the meta-sense of Refinement.

Elder Years -- Elders have two basic reasons to pursue learning: for enjoyment and for perspective. In the urge toward Fulfillment, curriculum can address both these needs. Some learning could be for fun and to satisfy curiosity, perfect for those who can "take time to smell the roses." Other learning could be for helping individuals integrate experience, compile wisdom, sense their own deep yearnings, and let go of earthly attachments and obligations with grace, dignity, and conscious rationality.

Community Action -- Waskom saw many avenues for community support of natural development, such as adolescents' finding mentors and confidants outside the family. He considered one of the most powerful community actions to be in ceremonies marking the passage of individuals from one stage to another. Here, family, community, and spiritual leadership join to make the transition vivid and meaningful. This might involve "trials" and appropriate symbols. (Many traditional ceremonies include these, but Waskom felt there was a need for more potent trials, symbols, and ceremonies in our society.) Community inclusion conveys a message that the transition is both personally and socially significant, for a new level of commitment is being formed. Waskom felt this was a natural urge like all the personal urges he addressed.

## 5. Distortions and Remediations

Most of the previous discussion has dealt with what "right" progression would be through the life stages: developmental tasks and urges accommodated through stage-appropriate atmosphere, exposure, and pedagogy. Most of those who approached Waskom did not have the benefit of such an upbringing. Thus he found himself counseling many, in both personal and parenting contexts, to alleviate various distortions or pathologies.

Waskom saw pathology as attitudes and behaviors reflecting developmental restrictions or programmed distortions. For example, a child who often lies or denies misdeeds might be seen as distorted due to premature stimulation of the intellect (at the expense of character-building repetitive or rhythmic activity) or due to poor parental models. The solution would lie in providing compensatory experiences to allow natural and healthy character to emerge.

Likewise, a young adult who cannot keep a job or a relationship might have developed distorted perceptions of responsibility or thinking processes. Again, the solution would lie in bringing forth naturally responsible attitudes and behaviors through controlled interactive experiences.

Waskom was not a trained psychologist (although he was the son of one). It is not within the scope of this paper to critique his rationale or his methods, but his emphasis on perceptual and experiential remediation does seem to have sound logic within the framework of his overall paradigm. Still, further research and comparisons with contemporary models are warranted.

### Part Three: Conclusions

The paradigm of Natural Design offers a perspective on human development that is holistic, integrating microcosm with macrocosm, "static" design with dynamic progression, geometry with physiology, sensing with character, and pedagogy with natural rhythms. It

attempts to explain what and how things go right in development, and it gives valuable clues toward identifying and rectifying distortions to that development.

Yet for all its scope, the paradigm may be more practical than many, for it seems to lend itself less to hidden motives and more to obvious natural rhythms. Indeed, its pedagogical implications are enormous; for example:

Lifelong learning -- How can it incorporate the character development needs (not just academic/professional needs) of every stage? Who will organize and manage it?

Experiential learning -- What is its role? How can experience be designed and controlled to offer the learner the best chance of developing both a knowledge base and a strong character? How much person-to-person interaction should be incorporated? How much person-to-nature interaction?

Parenting education -- What do pre-parents need to know about establishing a material and psychological foundation? What on-going education would benefit parents as their child moves from stage to stage? Also, what is the impact of parents who maintain their personal integrity and mutual agreement? Can this be taught?

Curriculum -- What would a Natural Design curriculum look like? Waskom maintained that up to about eight years the emphasis would need to be on physical skills, and even after that reading and writing would not begin until there was proficiency in memory and verbal language. Is this too radical an approach, or would this ultimately help relieve frustration and dropout? And what about the curriculum for other stages?

Teaching methods -- What kinds of pedagogy and classroom management help young people develop strong character? For instance, how soon should students work with academic or social democracy if they are going to stay in tune with natural rhythms? Each stage may require very different approaches to prevent premature exposure to forms or ideas which could mar delicate internal mechanisms. In this light, educators may need to recognize that the best preparation for a skill may not necessarily be components of the skill itself (introduced as early

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as possible), but a seemingly unrelated set of skills that will lay a foundation for natural acquisition in the future.

If design and development are one, we owe it to ourselves, our children, indeed the entire cosmos, to find the path that ensures a life progression of ever-increasing wisdom, enjoyment, and maturity. The paradigm of Natural Design is not the path itself, but it is a new light that reveals the path more clearly. And after all, isn't it light that we ultimately need to find our way?

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