Report

AN OBSERVATIONAL STUDY OF HUMAN ENERGY FIELDS IN INFANTS AND YOUNG CHILDREN

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ABSTRACT

The purpose of this investigation was to observe human energy fields (HEF) in infants and young children. The sample (N = 18) consisted of three age groups of approximately 6, 30, and 54 month old children. In this exploratory study, coding was devised to help extrapolate information that leads to a different understanding of development in children. Literature was reviewed from observations of the HEF of adults and ways of looking at children historically. This approach was combined with traditional observational methods of studying children to develop this research project, using qualitative analysis to identify any patterns within and between groups. The observations were made by three observers viewing the HEF, using a facilitator, coding forms, and video documentation. The findings from the study show patterns within and between groups indicating there is a developmental HEF change that occurs over the three age groups.

Keywords: Energy fields, infant and early childhood development, energy blocks, energy observation.

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hildren have long been viewed from a problem-focused perspective, both in the popular literature and in child development research. In many cases, this research has focused on socialization and how behavior might be controlled. Most of the early research has focused on problems and outcome factors viewed as problematic and negative, especially in terms of children's maladaptation and incompetence as adults.¹

In contrast, a more recent body of literature shows a pattern that has emerged around children who seemed to have protective aspects of themselves and their environments. These protective aspects have allowed for the unexpected outcomes of success instead of failure. This more recent scholarship embraces the concept of resiliency, a term adapted from medical research on coronary heart disease. Resiliency focuses on characteristics that insulate individuals from detrimental life experiences.² Much of the pioneering work on resiliency was developed by Garmezy, Rutter, and Werner and Smith.²⁻⁵ Since that time, research has continued to focus on the strengths of children, their families, and the larger environment rather than primarily focusing on problems and pathologies.⁵⁻⁹

According to Anthony,¹⁰ this work on resiliency developed because researchers began to expand the concepts and frameworks from which they had been working.

The limits of thought in any age are set not so much from the outside, by the fullness or poverty of experience that meets the mind, as from within, by the power of conception and the wealth of formulative notions with which the mind meets experience.

Most new discoveries, as Langer points out, are "suddenly seen things" that were always there. What the new idea does is to illuminate presences that simply had no form before the light fell on them and lit up the entire intellectual landscape.^{10(p,3)}

Anthony goes on to say that new ideas and perspectives develop when scholars change some of the assumptions, concepts, frameworks, and language used in their previous work. The concept of resiliency with children illustrates how such a change in perspective influences one's critical thinking and structural framework.

The current biomedical model that is used to address health problems in relationship to mind, body, emotions, and psyche is not based on health, but

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on problem-solving regarding disease. Addressing health problems and diseases, while providing some relief is, of course, what has given medicine its status and influence in Western societies. Yet, there are challenges to this model and examples of both healing and the development of health that cannot be explained using the traditional model.¹¹ For example, cancer patients who have had a terminal diagnosis and turned to a healer capable of changing the frequencies by which the disease manifests itself, have altered the course of the disease.¹¹ One young girl who had a brain tumor changed her healing strategy after two brain operations. After the tumor reappeared she sought an alternative method. Without current medical model explanation, she is now free from pain and free from any observable tumor (using traditional methods of detection such as MRI, x-ray, etc.).¹²

The area of research in the study of Human Energy Fields (HEF) has a similar history, particularly in the West, with an initial focus primarily on problems and disease. Moving from the traditional biochemical model to an electromagnetic model¹³ could be labeled a rediscovery of an ancient way of "knowing" through which people remained healthy by moving the "life energy" in their own bodies.¹³⁻¹⁶ While information about HEF has been available for centuries, especially in the East, very little work has been done to understand the development of a healthy HEF, especially with children. Little is known about the specific aspects of HEF in children or how they develop over time. Yet critical aspects of the HEF are important for healthy development. For example, examining children's development within an electromagnetic model may be important given recent information about energy fields as integrative and interactive, combining different energy frequencies rather than simply layers as they are most often described in older literature.^{13,16,17}

The purpose of this study was to begin investigation of variations in the HEF of infants and young children. The intent was to identify some initial ideas of how HEF vary with different ages in children. A small cross-sectional comparison was used to give some idea of similarities and differences in the development of HEF. Although there have been investigations of HEF with adults,^{13,16-19} there has been no systematic investigation of HEF in young children. Yet there is increasing evidence that such fields influence our health, well-being, and possibly even our development in such areas as psychological, mental, social, spiritual, and physical development.^{13,20,21} Hunt further

contends, based on her twenty-five years of research, that electromagnetic fields are more fundamental than biochemical influences in our physical being and behavior.¹³ Whether or not she is correct does not detract from increasing evidence pointing to the importance of such a field.²¹

particularly useful theory with which to study children over time has been a developmental framework in application to changes in behavior or patterns of growth. Research has focused on most aspects of children's lives, including physical, cognitive, social, and emotional development. In addition, electrodynamic field theory has been applied to the study of HEF in adults. After several decades of research by Ravitz,^{22,23} Burr and Northrop,²⁴⁻²⁵ and Burr,^{21,27-29} and others, electrodynamic field theory has been utilized to encapsulate creative work on HEF. In contrast to information about chakras and acupuncture from the East, this area of work was based on experiments taking place primarily in the United States and England using basic scientific methods. From this point of view, each living and non-living entity is organized by a comprehensive dynamic pattern which is both explicable and rational, based on relativity field physics.²² From this perspective, such fields act as directors for chemical, metabolic, or molecular transformations and even underwrite the development of structure prior to chemical reactions occurring,^{21,26-28} thus allowing health and disease to be measured in terms of changing intensities and directions of natural energy.^{22,23} While the direct line of research has not continued, the essential work has been followed and expanded by Hunt and others,^{15,18-20} including changes in the energy fields from musical intervention.³⁰

While both developmental and electrodynamic perspectives have been useful, they have not previously been combined to understand the development of HEF in infants and young children, and yet the combination is both powerful and critical. Observational studies also have a long tradition in child development research, yet they have never been applied to a fundamental aspect of development, the HEF. Such work may well have important implications in understanding other areas of child development, such as cognition. For example, Hunt suggests that:

... thought is an organized field of energy composed of complex patterns of vibrations which consolidate information. If the accompanying emotional energy is strong, the field is energetic and integrated. It persists and stimulates other fields to action, both

the dense world of matter and other human beings. If one uses auditory memory skills to decode an information field, one hears sounds or voices. If one translates thoughts through visual memory, one sees pictures or print. And if one processes vibratory information via olfactory or kinesthetic memory, one smells odors or has motion sensation. If one somehow integrates all of these, one knows.^{13(p.187)}

Thus, a developmental perspective, when applied to HEF, provides a framework for discovering patterns and changes over time. It will likely be important to understand HEF as they develop children and as they relate to the emergence of health and other desired outcomes in adults.

Over the decades children have been the object of observational studies. How children function in different environments³¹ has been the topic of on-going discussions, certainly around play,³² physical development,³³ cognitive development,³⁴ social development,^{35,36} and emotional development.³⁷ We observe sequences of behavior or patterns by which we can predict behavior. Thus, observations have been used extensively in the research on motor development, play, cognitive changes, language, social interaction, and emotional expression in infants and young children.

In addition, interest, investigation, and application of information about human energy fields began over 5,000 years ago, particularly in the East. Auras and halos are mentioned as "fields of light," and coronas are the obvious way to refer to those of a higher consciousness.¹⁸ Spiritual traditions from India, for example, speak of a universal energy called Prana, while the Chinese have a long tradition regarding the vital energy of Chi, thought to be present in all matter.³⁸ The Greek healer, Pythagoras, identified "vital energy" as a "luminous body that could produce cures,"³⁹ while other European and Middle Eastern countries, as well as Native American cultures, had their own concepts of energy and named energy according to their own traditions.⁴⁰

More systematic investigation of HEF began during the nineteenth century with Mesmer, von Leibnitz, and von Reichenback,¹⁷ and have continued to increase with Kilner, Reich, Burr and Northrop, Hunt, Pierrakos, Karagulla and Kunz, and Becker.^{13,15-17,22-29,41-44}

Despite all the work on HEF of adults, there has been no systematic research of HEF in infants and young children. White⁴⁵ outlines some developmental issues corresponding to the seven chakras, but there are no empirical studies

to support her conclusions. Kunz⁴⁶ also discusses aspects of children's development in terms of energy fields, but again has no accompanying data to support her descriptive ideas. A categorical coding method, similar to the one in the current study, however, was used in the Karagulla and Kunz¹⁶ study. The observations were simply written according to eight categories. Separate from their categories, we chose six of the eight for our coding, but continued with a much more detailed qualitative approach to our study.

Dr. Hunt¹³ used a system similar to Karagulla and Kunz,¹⁶ with a clairvoyant and frequency data collection instrumentation that gave her information concerning disease, emotional state of being, colors, and energy frequencies data. The correlation between visual observations of the HEF was consistent with the frequency data of sound and color, which she measured using hard-wired equipment designed for use in the laboratory at UCLA to measure human energy fields. These methods were considered for the present study, but such invasive procedures and devices were not appropriate for use with very young children. Thus, observational methodology alone was employed in the current work.

HYPOTHESES

This was a descriptive, exploratory observational study in which the HEF in infants and young children were observed and reported. The purpose of this study was to begin investigation of variations in HEF among infants and young children, for very little work has been done previously. Therefore, no specific hypotheses were developed, for there is insufficient literature to outline expected outcomes. From pilot work, however, it was expected that some differences would emerge which begin to provide some initial indications of changes in HEF over time. For example, it was expected that energy fields would become smaller or more contained in older children compared to younger children and infants.^{45,46} It was further expected that young children would have more open chakras or greater movement in the energy fields than older children.¹⁸ In addition, it was anticipated that 30 month old children would exhibit some of the characteristics of the infants as well as some seen in older children, as they could be viewed in transition from one type of energy field to another.^{45,46}

The observations in this research are through a medium of communication similar to the idea of "body language."^{47,48} The tilt of someone's head can give you a sense of something far different than the manner or angle at which the head is held.⁴⁹ Something similar also happens when one feels the intensity of an energy field and becomes tuned to its vibrations, then able to "see" it and determine its dynamics visually. Because of the lack of such research with young children, however, an exploratory study is the most appropriate way to begin this area of investigation.

Historically, people have balked at ways of seeing things differently. For example, use of the microscope in its early years was not received with great understanding. Before its more standard use, those bacterial entities that existed in the blood, on surfaces of inanimate objects, on hands, and elsewhere had not been visible to the naked (physical) eye. Since the microscope came into general usage, this way of seeing those microscopic beings has become an accepted way of knowing and of accumulating information. The same can be said of the human energy field. There are ways of seeing the field other than with the naked eye. When the subtle energy methods of seeing the energy field become commonplace, they will enjoy greater acceptance as ways of knowing and of accumulating information. The current investigation extends previous work using this methodology to observations of HEF in infants and young children.

METHODOLOGY

SAMPLE

The convenience sample for this study were 18 infants and young children in a western university childcare center. This center includes children of faculty, staff, and students, with children often starting as infants and remaining through age five or six. Because of the stability of the child population and the availability of observation booths, this center was a good location to conduct longitudinal research. Three different age groups were used for this study. The first group, Group A, was comprised of six infants as close to the mid-point of six months as possible, with a range from 2-11 months. The second group, Group B, consisted of six young children approximately two years older and as close to the midpoint of 30 months as possible, with a range from 24-35 months. The oldest group, Group C, included six children closest to the mid-point of 54 months, with an age range of 48-59 months. Two years difference between groups was chosen in order to identify possible changes in HEF that may occur by age while also providing some time to elapse in order for such differences to be identified. This time span also provides the opportunity to identify consistent patterns in relation to time.

The children for this study were chosen strictly by age. There was no exclusion pertaining to ethnicity, socio-economic status, or to physically or mentally challenged children. The one factor that was taken into account is gender. Attempts were made to balance the sample by gender within the three age groupings.

PROCEDURES

The parents of six children closest to the mid-point in each group were given a flier asking them to allow researchers to observe their child, along with a consent form for them to sign after the nature and possible consequences of the study had been fully explained. If the parent(s) of a child signed and returned the consent form, that child was included in the sample. If the parent(s) did not agree to the observation, the parent(s) of the next child closest in age were requested to participate in the study until there were six children in each of the three age groups. The assistant director of the center identified the appropriate children and forwarded the consent forms to the parents, so identification of children did not occur until after the consent forms were signed. Only two parents out of 20 contacted refused to have their child observed, both of whom had children in the youngest age group.

Once consent forms were returned and children were identified, the observations were conducted. Two sources of information were used: first, live observation of the HEF from behind a one-way mirror in the three rooms for infants, two-year-olds, and four-year-olds. Second, videotapes were made at the same time as the live observations. Videotapes were used to conduct a third, independent observation, as well as make a record in case of reviews of the children were needed to resolve discrepancies between observations. Live observations focused on the identified child for a period of approximately 30 minutes during a morning indoor activity. For comparison and consistency, observations were conducted between 9:00 and 11:00 a.m. to allow for variations in the scheduling of activities while increasing standardization of times and activities. One infant was an "afternoon only" attendee, but because there were no other available infants the parent made accommodations for observations to be made in the late morning. The choice of time allowed for the probability that in the morning children tend to be a little more fresh and active (although that, obviously, is not always true, especially for infants), and are participating in similar activities across age groups.

To avoid changes and adjustments, which sometimes occur just before or just after a weekend, these observations were conducted only on Tuesdays, Wednesdays, and Thursdays. Two trained observers watched the target child at the same time from roughly the same angle while in the observation booths. Each observer made independent notes and responses on the observation coding form. To maintain consistency, attempts were made to adjust for light angle interference in observing the child. A third person made a videotape of the child at the same time and roughly the same angle, and a third observation was completed from the video tape. (An initial comparison between live and videotaped observations found no difference between these two approaches). A fourth person also was present to read the coding statements and answers, allowing the observers to concentrate on the HEF, and also to ensure observations were done silently and independently of each other, as well as to keep track of time on the form in order to maintain consistency in timing of live and video observations.

In order to have two independent people code the HEF, two professionals from the community were recruited to assist with the study, both of whom had previous training and experience reading HEF. Once the coding form was developed and pilot-tested, both people were trained by the primary investigators in observations and coding procedures. A high correlation was found between the three observers (the two doing live observations and one coding the observation from the tape), despite the complexity of HEF with regard to many different energy frequencies and aspects of this dynamic phenomenon.^{13,21,29} In addition, the observers were blind to the expected findings, and each observation was independent of the others. Because both coders

observed and recorded information about the HEF, traditional problems about inter-rater reliability (one coder coding one set of tapes and the other coder coding a different set of tapes) are less of a concern, although difficulty remains when there is lack of agreement in what is observed.⁵⁰ Given complexities of the HEF, lack of agreement when it occurs may have to do with the focus of a particular observation within a complex and dynamic system, as is true of biological or family systems.^{23,29,51} In this study, only those observable factors that were rated reliably across observations were used and included in the analysis within and between groups. Because this was an initial study in a new area of inquiry, the tapes were important to review the observations for additional information if certain characteristics of the field were found in the analysis which were not anticipated and needed further verification, a common practice in qualitative analysis.⁵² Still, a high reliability was found. When comparing the total number of possible agreements on items used in the analysis across all three observers, with the number of items where there was agreement, a 79.6% agreement or interrater reliability was found. This is a common reliability procedure with observation methods, along with an acceptable level of agreement.50

INSTRUMENTS

In order to obtain systematic information, a coding form was developed for gathering data about the HEF. The form was developed for this project and has been reviewed by professionals in the field as well as pilot-tested several times. This form was developed from available literature about HEF, and included as much observable information as possible, that was relevant to children's fields. The information was then laid out in a form with some anticipated response categories, as well as space for further elaboration or descriptions. The parameters for this analysis included how dense (compact and thick or thin and filmy) the light in the field appeared, the amount of light and whether or not it was transparent (easily "seen through" or not), an estimate of how wide the field appeared to be; any shapes or configurations that appeared in the field, the existence of observable blocks (obstructions) of the energy flow in the field, the speed or velocity of the energy movement (little movement to fast movement), any problems with the hara line through the chakra centers (for an illustration of the hara line and possible distortions, see Brennan), 17(pp.292-294)

whether energy was being pulled from someone else, and the overall quality of the energy field. While this information was coded in quantitative form, analysis remained a qualitative assessment of that information.

ANALYSIS

These data were analyzed using standard qualitative procedures, which assist in searching for regularities, both in terms of categorizing elements and establishing connections, as well as identification of patterns.⁵³ Categorizing elements and establishing connections are basic components of grounded theory, that is, the patterns and connections emerge inductively from the data themselves. Data used to reach discovery of an hypothesis using induction,⁵⁴ and basic theory development proceeds by developing new categories. These categories often seem to emerge early in data analysis.

Investigators next began searching for relationships between categories, which were then verified with later data. In this approach, the analysis was used to identify relationships between or among the elements under study. A complimentary approach was identification of regularities of patterns (similar to relationships or linkages), where the focus of analysis was of the whole rather then the elements, seeing general patterns in the phenomenon under study.⁵⁴ Glaser and Strauss⁵⁵ referred to this method of discovering patterns as "constant comparison."

hile such qualitative analyses are not as common as traditional quantitative procedures, they still follow strict methods that allow for assessing validity and reliability.⁵⁶ Such analyses are especially appropriate for research where discovery of regularities among elements and the establishing patterns is of interest.⁵³

Across the eighteen observations, data were analyzed for categories, especially in terms of similarities and differences by age. Initial analysis was of the HEF within age groups, followed by assessment for patterns across groups. The qualitative coding for categories and the contextual analysis produced both initial conclusions as well as ideas for further investigation. The data collected by the three coders were put onto large sheets of paper to review the results and begin to search for findings and patterns. From the grid organizing system, similarities, differences, and patterns began to emerge from a constant circular decontextualization/recontextualization process.

RESULTS

The sample included infants and young children in three different age groups. The youngest group was comprised of infants with mean age of 8.0 months, with a range of six to ten months. The second group consisted of young children with a mean age 31.3 months, with a range from 28-33 months. The oldest group included children with a mean age of 52.2 months, with a range of 50-55 months. The intent was to find children closest to the mid-point of 6 months, 30 months and 54 months, respectively. The first two groups were slightly older than intended (with target ages of 6 and 30 months), while the third group was slightly younger than the target age (54 months), but all three groups were fairly close to the targeted means.

The choice of three females and three males in each group would have been preferable, but the choices in each group, especially the youngest group were limited. The infant group consisted of eight choices of which a few intermittently attended the center, The six infants chosen for the study were the only ones available at the times chosen and whose parents were willing to have them participate, in addition to one "afternoon only" child whose parents accommodated this study by bringing the infant to the center in the late morning. Inadvertently, there were four males and two females in each of the three groups. The decision was made to stick close to the intended age rather than force gender balance. There was no reason to believe at this point that gender made a significant difference, and it was felt that the similarity in ages was the most critical factor for this research.

Given the small sample in this study, the test for interrater reliability was best done by simple calculations.⁵⁰ This was generated by the addition of both marks and blanks the coders had in common divided by the total of all possible responses on the coding form. For this study, the percentage of agreement or interrater reliability was equal to .796. We chose to use percentage of coder agreement calculations for data by including the responses by all three observers.

SUMMARY OF FINDINGS WITHIN GROUPS

Within the youngest group, there were a number of important findings and a variety of patterns that emerged from the data. The density of the HEF was consistently low to moderate in the youngest group. These children tended to have fields that were not very dense. They also had a moderate amount of light transparency, consistent with the amount of observable light density just described. The width of the energy fields tended to be short to medium all the way around, including above the head. These very young children typically had contained energy fields of less than 12 inches. In terms of shapes, the rings were identified or occurred in half of this group, rays with all six of the children, and squares in five within this group. Consistent with the density and transparency, the movement of the fields also tended to be slow to moderate, but all six of these children were observed pulling energy in from someone or somewhere else outside the field. Finally, the fields tended to be fairly dynamic overall for all six children.

In addition to the general characteristics of the fields, there were pictures (a type of illustrated thoughtform or event)¹⁸ and blocks in the field at the second, third and fourth chakras with the infant group, with the strongest amount appearing in the third chakra. Pictures were more common than blocks. The hara line also was distorted, more often at the third chakra than any other place. Thus, the distortion of the hara line was consistent with the pictures and blocks, occurring most frequently at the third chakra.

With the second group, the density tended to be moderate to high, somewhat more compact and thick than the infants. The amount of observable light tended to be moderate to somewhat less transparent, again not as transparent as with the infants. The width of the field typically was medium, approximately 6-12 inches in width, on average a bit wider than the first group. With regard to shapes, four were identified as having a ring, six with a ray, and six with a square, slightly higher in general than the infants. The speed of movement tended to be medium, a bit faster than the infants and consistent with the density and amount of light. About half were observed pulling energy in from other places or people, considerably less than with the first group. Overall, their fields all were described as dynamic, similar to the first group. In general, the energy fields of the two-year-old children were more dense, less transparent, and had greater movement at the moderate level than the infants' field which was slow to moderate. These children also were more active and less dependent on caregivers, which may explain some of the differences found in their fields.

There were pictures and blocks in the field at the second and third chakras. There was no indication that either pictures or blocks were mentioned more frequently than the other. The hara line also was distorted most frequently at the third chakra, but the distortions were fewer than with the infants.

Where the oldest group, density was moderate to high and still greater than either the infants or the second group. The fields of these children were even more compact and thick compared to the other two groups. The amount of light also was less transparent relative to both of the other groups. The width of the field did not differ much from the other two groups, tending to be short to medium, generally 12 inches or less. In terms of shapes, only one child was observed with a ring, all had a ray, and five of the six had a square. In this case, the ray and square were similar to the other two groups, but these children generally were not seen with rings in the field. The speed of movement was moderate to fast, greater than either of the other two groups observed. Similar to the second group, about half of the children were pulling in energy from other people or places. In addition, four of the six were observed to have dynamic fields, somewhat less than either of the other two groups.

There were pictures and blocks at the third and fifth chakra areas. With this group, as with the middle group, pictures and blocks both occurred in about equal number, but there were approximately one-third greater distortions in this group compared to the other two groups of children. Similar to the pictures and blocks, the hara line also was distorted most at the third and fifth chakra areas. The distortions were about the same as with the infants and greater than the second group. The quality of pictures, blocks, and distortions also tended to be different than either of the other groups. The differences mentioned above are discussed in more detail below.

HEF RESULTS BETWEEN GROUPS

Information about the HEF of children has not been systematically collected previously. While the data were collected using a cross-sectional design, there were a number of patterns and trends in development worth noting. First, it appears that the energy fields remain fairly constant in several areas. For example, the width of the fields did not vary much across the three groups. There was some variation among the children, but the differences appeared to be individual rather than developmental. In addition, all of the children were observed to have a ray, and most of them also were observed with a square, with no differences across groups. Thus, the energy fields seemed to have some individual variation, but the width of the fields and the ray and square appear to be fairly systematic during the first four and a half years of a child's life.

t the same time, energy fields in these young children appeared to vary in some important ways with age. For example, the density of the field seemed to become somewhat greater and the corresponding amount of light became less transparent. There also appeared to be greater movement with age along with greater number of pictures and blocks. The distortions of the hara line seemed to be greater among the youngest and oldest groups, but the quality of the distortions seemed to be different between these two groups. The distortions in the youngest group appeared to be more transitory and translucent, while the distortions in the older group seemed to be more solid, attached, and denser compared to the other two groups. There was less pulling in of energy and somewhat less dynamic fields with the oldest group. What appeared to happen was that children took on more pictures and blocks, distorting the hara line most often at the third chakra. These changes were related to corresponding changes in density, transparency, and movement of the field, creating a somewhat less dynamic or balanced field as children grew older. While they made physical, cognitive, social, and verbal advances during these developmental years, they also lost some important qualities of the energy fields, which could have lasting impacts into adulthood.

Across the three groups what was most consistent was change in their energy fields. These changes were consistent with physical and social development, as indicated by development in play behavior. More importantly, these changes become even more significant when viewed in a context of information about adult energy fields, such as the relationship between stagnancy or static fields in adults as they are related to issues of disease.¹⁶

In each of the three groups, there was a relationship between density and overall quality of the field. Density during infancy was low to moderate, which corresponded to fewer reported blocks within their field than the four year olds, who were moderate to high, and slightly less than the two-year-olds, who tended to be moderate. Less dense seems to indicate a less compacted field. In this case, less is more. Light transparency or the amount of light shining through the field decreased with age, an apparent negative correlation. The overall quality of the field was dynamic, which indicated a moving open field. The overall quality of the field tended to evolve from dynamic with the infants, less dynamic with the two-year-olds, and still less with the four-year-olds.

As indicated earlier, there also appeared to be a relationship between shapes and width of the field. Infants, for example, had fewer blocks in a moderate width field compared to the older groups. In this sample field width of the infant was not associated with more blockage from pictures, especially in comparison with the four-year-old group.

Shapes in the field showed some consistency across groups, with the ray and the square quite consistently observed and the ring seen less consistently. The ray was observed as an incoming streak or beam of energy and was viewed in each of the 18 children. In contrast, the square was observed as an interactive energy opening between the 4th (heart area) and 5th (the throat) chakras, and it was observed about the same amount of times in each group, all quite high. The ring was not a familiar shape for two observers, so although it was thoroughly explained, it tended not to be reported consistently by either of the trained observers. Still, when it was observed, it tended to be viewed in the younger children. In this case, the ring was seen as a pattern of energy, often associated with interaction between the infant and some other person, usually the caregiver.

The seven major chakras are located near the major nerve plexuses of the body. The children's hara distortion was most frequently at the second, third, fourth, and fifth chakra areas. What appeared to occur were increasing pictures, blocks, and distortions with age, especially at the third chakra. In summary, the pattern that emerged with the above information unfolded as follows: the field was more dense in the four-year-olds than either of the other two groups, with infants being the least dense; movement and blocks increased with age; light transparency decreased as age increased; and the overall quality of the field changed from dynamic to somewhat more static over the three groups.

Gender

Because the sample was small and the choice of subjects so limited, gender within the sample was not equal. However, the samples were equal in ratio of male to female. Each group had four males and two females. There were no discernible differences relating to gender and the HEF.

PHYSICAL CHARACTERISTICS

B ased on systematic assessment of play, age-appropriate behavior, and interactions for each child, it was clear that the children in the sample were described by early childhood development experts in the center as developing normally or within a developmental norm. There were no developmental alerts noted on any of the subjects in the sample. Similar to the work done on adult energy fields, there also were no observable problems in the children's energy fields which would suggest any developmental problems with the children.¹⁶

DISCUSSION

MAJOR FINDINGS

The findings are consistent with some previous literature while also identifying some results contrary to expectations. For example, a negative relationship was found between density and light transparency indicating a developmental pattern across age groups. This was consistent with some previous work on energy fields and the idea that such fields become denser as children age. Further, variables of density, light, width of the field, shapes (ring, ray, and square), pictures/blocks, movement, hara line, pulling in of energy, and the overall quality of the field all show progression with age. This progression has not been clear in earlier work, especially with the less systematic study of HEF development in children. Such progressive observations provide a tentative picture of how HEF change from infancy to four-year-old children.

Density and light transparency seemed to be related in definition and function. If the HEF was dense, then less light shown through the field. All the observations consistently supported a connection between these two variables. As the density increased, light transparency decreased, indicating an inverse relationship between density and light. Children in the youngest group were observed to have less dense fields with more light transparency than the middle group, and children in both groups were observed to have a less dense field with more light transparency than those in the oldest group. This progression of density is thought to be a compacting of the energy and a possible blocking of energy information^{13,16,17,57} into the conscious state of the child.⁵⁸ As the child becomes more socialized, the former way of gathering information, such as that used by an infant, no longer is within easy access for or at least utilized by the four-year-old.

While the width of the field remained approximately the same for the age groups involved in this study, the density appeared to have increased in relation to energy compaction. The field is a carrier and an indicator of information, and any aberrations in the field provide information as to where future problems may arise and as to where caregivers can look to find the source of blocks and condensing of the field.^{13,15,17,21} Pulling energy into a more condensed field structure forms an alignment between density and light transparency. Where the field is dense and little light is shining through, it is probable that the field is contracted or at least contracting, which accounts for the increased density of the field.^{13,18} Therefore, pulling energy which is more transparent in from other sources may have some degree of importance in maintaining a stable field or stabilizing a field, which is growing dense.

Pictures held or attached in the field condense the field by their intrusion. There are, however, two different types of relationships to pictures and even a somewhat different quality of the pictures themselves. Some pictures, for example, may be information only, in which case there is little or no attachment to the picture by the infant. The picture itself tends to be more translucent and fluid, as well as to be more transitory within the field, even moving through it. While a significant number of pictures of this sort were observed in infants' fields, they did not appear to block the flow of energy within the field. In contrast, older children's fields become more attached to the pictures, holding them more securely in place, while the pictures themselves tended to be more dense and less translucent, thereby also making them less transitory. Such pictures, in this case, act more like or become blocks, creating more density in the field.

Pictures in the form of blocks appear in infants less frequently than they do in older children, seemingly because they are more fleeting rather than density producing intrusions. In these instances, pictures may be information only, while other pictures may be blocks. Although the number of pictures and blocks observed in the fields are similar with infants and older children, the function and impact of the pictures seems to be quite different in the two groups.

ntrusions are not necessarily something permanent. They may be fleeting pictures. Just as one may intrude into some are ' for only a brief moment and not really stop the flow of communication, the same is true of pictures. They may enter the field but not stop the flow of energy. The infants' fields, with more pictures that are not blocks, would not necessarily be convoluted by intrusions. They would simply have pictures in their fields that do not inhibit flow. The four-year-old's, however, would have inhibited flow, with their greater density and less light transparency in field. These intrusions may be more permanent or at least currently stuck. The middle group had greater similarity to infancy, perhaps because they are hardly out of that period of development themselves. They had fewer blocks than the four-year-olds and more pictures than the infants. Their density was greater than the infants and less than the four-year-olds. In addition, their light transparency was less than the infants but greater than the four-year-old group. The probability is that the two-year-old group is in transition between one state of learning and development into another, both in human energy field and in physical matters.

This view of differences in pictures and the role they play begins to demonstrate complexities of the energy fields. When pictures are held in the field and the field itself increases in density, the movement, that is, rapidity of motion within the field, also seems to increase, while maintaining a dynamic and transparent quality, even with the intrusions. Increased movement (velocity) of the field seems to be a compensatory action for the increased pictures or blocks, becoming an equalizer for the field in relation to the blocks. As light transparency decreases, the density and velocity increase to maintain a dynamic balance for the loss of light. In addition to change in relationship and quality of pictures for the older children, they also have more stimulation and information entering their fields, which can influence density, movement, and translucency of their fields in contrast to infants and two-year-olds. There is less "openness for light" to filter through the energy field structure.⁵⁹

related aspect in this complex field is the hara line, which was seen in all groups across ages and may provide more immediate information about concerns than do blocks and/or pictures. While pictures provide information about what is of concern and blocks indicate where the concern lies in the field, distortions in the hara line seem to provide the first indication of the area of concern in general. For example, the greatest distortions in the hara line for all three groups were in the third chakra, which is related to the solar plexus where it is located. Brennan says that this chakra is connected with intuition and to who we are in this world, how we connect to others, and how we take care of ourselves.¹⁷ Infants may have a sense that there is a discrepancy between their reality and adult reality. Two-year-olds, with their greater external focus, may have an intuitive sense of greater connection between their view of themselves and the reality around them as they learn and explore their environment. These children also are beginning to learn language and can begin to interact in the adult reality. Older children, as they increase in communication and cognitive skills, begin once again to sense a greater discrepancy with their world and the reality around them. This may help explain the greater number of distortions found in the infants and four-year-olds compared to the two-year-old groups. In addition, it may help to clarify information gained from the hara line in the energy field.

For lack of finding a better word to describe what happens in the hara line, the word "distortion" is used.¹⁷ No matter what term is used, hara distortions

are breaks, squiggles, or bends in the line which provide information as to where to look for intrusions into the field in the form of discrepancies, issues, or blocks. These "intrusions" come from external stimuli or internal thought patterns.^{17,18} They often are fleeting, but they also may be more permanent if they are held in the field and develop as blocks.

Learning comes in very different ways when children have more of a command of the language.⁶⁰ Often their focus is on their peer group and exchanging information through energy field interaction with that peer group rather than with their caregivers. By this time, with the resultant increase in density and the decrease in light transparency in the four-year-old group, the children have devised a method by which they have become very specific in pulling energy into their fields. They send narrow, light "fencing implements" with which they pull in energy from their peers, and can do this maneuver simultaneously with each other depending on their own desire for interaction. At different ages, young children have different intentions, needs, and capabilities by which to determine how and for what reason to pull in energy from someone else. With four-year-olds, it is most often reciprocal and focused on social interaction and/or learning skills.^{46,60}

It appears that increasing movement in the field is a function of developmental compaction of the field and is more frequent in the oldest group. It is important to remember that all of these terms and comparisons are relative. If the same coding were used on adolescents or adults, dynamic and static would be relative to their field quality. Four-year-olds are more static than the two-year-olds or infants, and yet probably less static than adults. The underlying reason for this follows the trend of decreasing transparency and increasing density while taking in socially constructed limitations and holding them as blocks. Compaction of energy and increasing of blocks is consistent with the initial speculation of this study, that as children increase in age, they become more protective, condensing their fields by the holding of pictures, which then block their natural information sources.

IMPLICATIONS FOR RESEARCHERS

Electro-dynamic field theory and developmental frameworks provide an abundance of ideas for further research in children's energy fields and physical

developmental sequences. These frameworks would be useful in investigating parenting styles, sequences and/or patterns in physical development of children, parent-child relationships and interaction patterns, as well as the use of power within the parent-child relationship. Such information would increase understanding of the abilities possessed by children, but previously ignored. The possibility exists that understanding the structured unified pattern that surrounds matter would dramatically alter the way parents and children relate to each other.

uestions arise as to how other relationships could be altered as well. For example, where do most distortions lie in the energy fields of physically abused children, substance abusing adolescents, or gang members? Do children who have committed crimes against others have a particular HEF, or do distortions lie in common areas? What kind of information does this give us in diagnosing children and/or parents? How do practitioners see children if they have a belief system that gives respect and acknowledgment to a child's reality? Children are empowered when adults listen with respect and value a child's way of knowing which adults may have forgotten. Perhaps as adults, we do not need to disempower children to empower ourselves.

Ethnicity may play a role related to energy field differences. Are there any differences between the HEF of children in different cultures or subcultures or in those with diverse expectations and roles? Parenting differences in various cultural settings may influence energy field transparency, kinds of pictures in the field, or movement. Differences may be age, role, dominance, hierarchy, and/or resiliency related. The more information accumulated from HEF research, the more understanding will be available to reframe ideas surrounding ethnicity as well as the fields themselves.

Different parenting styles may influence HEF distortion in particular ways. Where and when do the lines, rips, or tears of distortion begin, for example, in authoritarian as compared to a more collaborative parenting methods? Will children "act out" in a uniform way while their field distortion is at a particular place? What exactly does this mean? Is it a general pattern or is there a specific behavior that arises? With parents who often are not present in a myriad of ways, for example, emotionally, mentally, and certainly physically, do children have energy fields that have a common distortion, something missing in the field, or some other variation? There are many critical questions about the relationship between parenting styles and human energy fields that need to be addressed.

Further implications will become apparent with observations of healthy youngsters with clear fields, followed through a longitudinal design. Critical questions can then be addressed, such as when and where the distortions begin in the field, and if that place of distortion coincides with the type of personality defense mechanisms that those children are building. The current study is the first wave of a longitudinal project, allowing the investigators to obtain information regarding changes in energy fields over time, especially with this youngest cohort. In particular, longitudinal data will be useful in addressing questions about when changes tend to occur within energy fields and how soon changes are related to other changes or specific impacts on the field.

IMPLICATIONS FOR PARENTS AND CHILDREN

Information from the HEF of children adds not only to what a parent knows about a child, but it also begins to change the relationships and interactions between parents and children. For example, when inappropriate age-related behavior, or rips, or tears in the field exist along with pictures, there is greater probability of a picture being a block.¹⁷ If adults were paying conscious attention to feelings and behaviors, or to the energy fields of children, there could be greater understanding of developmental processes at both levels, not just problems. Adults would come to the relationship knowing that they were also learners and that they were going to relearn from the child his/her way of knowing. The information, first indicated within the field, would give parents and caregivers a way of knowing what was occurring in order to communicate with children before it becomes yet another layer (blocks) to be unraveled later in life.^{13,17}

Parents and children have a way of knowing each other that can give their relationships depth and clarity. When a parent sees information clearly presented in the HEF, the response may be different than if it were not observed. There is an alternative communication exchange via the energy field of the child. In this way, the power structure balance also may be modified. With the use of information from the HEF, parents can respond to a child directly. In addition, when the field dynamic is in the process of changing, parents can see modifications in a particular area and can alter their interaction to ameliorate field distortion as it begins. Children may well see themselves, each other, and interactions differently from adults perceptions. From an energy-as-information perspective, parents and children can learn to know and communicate energetically and more directly. When this occurs, parents can really "know" a child's concerns from his/her perspective and better facilitate both response to concerns or needs as well as a child's general development. In order for this to happen, many parents will end up interacting and learning from the child who becomes the "knower" while the adult becomes the seeker, thereby creating both greater equilibrium and harmony between parents and children.

IMPLICATIONS FOR PRACTITIONERS

In addition to the implications for researchers and parents, there also are several important implications for professionals working with children and families. First, use of the HEF would allow professionals to gather information about children without the barrier of lack of shared verbal language. While interpretation of information is still somewhat risky without feedback from the individual involved, HEF information at least would allow some sense of understanding to occur before children are able to express themselves clearly in a verbal manner.

Using the idea of a healthy, dynamic, functioning field as a guide, parents, teachers, and other professionals would be able to incorporate feedback from the field to verify how their work with children was going and where they may need to focus some of their attention and assistance in order for healthy development to occur with children. In this way, the focus of people working with children would be on healthy development and frequent feedback rather than hoping problems do not occur and only guessing about the impact they were having on children.

Information gathered from the HEF also would allow practitioners to focus clearly on issues or concerns based on distortions within the field. For example,, distortions at the third chakra could help address issues of the relationship a child has with his/her world. Pictures or blocks in areas of the field would be indicators of other issues to be addressed.

Using such direct information from the energy fields may be a more intense way of working with people and may even be more threatening because of the directness and greater honesty involved in the process. Some people may not want or be ready to deal with such concerns or issues, especially with parents or other adult family members. With children, however, such directness may save them later difficulties by addressing concerns and issues closer to the time of occurrence rather than later in life. Beyond children and family members, accessing direct information from the energy field also may be threatening to professionals who have not addressed their own issues which now may be more obvious to clients as well.

When practitioners do have access to direct information from the energy fields of children and other members of a family, they also may be better facilitators of communication, change, and development with clients. Such facilitation may not only be useful in counseling or therapeutic settings, but also in teaching and prevention work.

Finally, when practitioners and clients both have access to greater and more direct amounts of information, hierarchies may be eliminated where they previously were entrenched. For example, practitioners may play the role of facilitator more than the expert who ranks higher on a hierarchy. Children who have their own way of knowing which is valued in a family also are less likely to be viewed in a lower status compared to adults. In this way, all participants become valued members of a group, whether in a family or in relationship to professional roles.

There clearly are other implications which could be addressed for researchers, parents, and practitioners based on the inclusion of HEF. Obviously, much more needs to be learned about the development of HEF in children and adolescents before more specific implications can be outlined. This project, however, begins to address questions which have been ignored, and lays the foundation for longitudinal as well as other projects to answer the questions that emerge from the current investigation. As with any exploratory study, there are many more questions posed than questions answered.

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ACKNOWLEDGEMENT: Thanks is expressed to Dr. Valerie Hunt for her support and feedback with the coding form.

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REFERENCES & NOTES

- 1. N. Garmezy, Stressors of Childhood, In *Stress, Coping, and Development in Children* (N. Garmezy & M. Rutter, Eds., McGraw-Hill, New York, NY, 1983), pp. 43-84.
- M. Rutter, Protective Factors in Children's Responses to Stress and Disadvantage, In Primary Prevention of Psychopatholgy: Social Competence in Children Vol. 3 (M. W. Kent & J. E. Rolf, Eds, University Press of New England, Hanover, NH, 1979).
- 3. N. Garmezy, Resiliency and Vulnerability to Adverse Developmental Outcomes Associated with Poverty, *American Behavioral Scientist* 34,4 (1991), pp. 416-430.
- N. Garmezy, Children in Poverty: Resilience Despite Risk, In *Children in Violence* (D. Reiss, J. E. Richters, M. Radke-Yarrow, and D. Scharff, Eds., Guilford, New York, NY, 1993).
- E. E. Werner, & R. S. Smith, Overcoming the Odds: High Risk Children from Birth to Adulthood (Cornell University Press, New York, NY, 1992).6. C. P. Barnard, Resiliency: A Shift in our Perception? The American Journal of Family Therapy 22 (1994), pp. 135-144
- 6. C. P. Barnard, Resiliency: A Shift in Our Perception? The American Journal of Family Therapy 22 (1994), pp. 135-144.
- 7. R. Jessor, Successful Adolescent Development Among Youth in High Risk Settings, *American Psychologist* **48**, 2 (1993), pp. 117-126.
- H. I. McCubbin, Families Under Stress: What Makes Them Resilient? Paper presented at the Annual Meeting of the American Association of Family and Consumer Science, Washington, DC (June, 1997).
- M. Rutter, Psychological Resilience and Protective Mechanisms, In *Risk and Protective Factors in the Development of Psychopathology* (J. Rolf, A. Masten, D. Ciccheti, D. Neuterlei, & S. Weintraub, Eds., Cambridge University Press, New York, NY (1990), pp. 181-214.
- E. J. Anthony, Risk, Vulnerability, and Resilience: An Overview, In *The Invulnerable Child* (E. J. Anthony & B. J. Cohler, Eds., Guilford, New York, NY, 1987).
- 11. Christiane Northrup, Women's Bodies, Women's Wisdom (Bantam Books, New York, NY, 1994).
- 12. Jackie Assal, Personal Interview (1997).
- 13. Valerie Hunt, Infinite Mind: Science of the Human Vibrations of Consciousness (Malibu Press Malibu CA, 1996).
- 14. Alexander Lowen, Bioenergetics (Penquin Books, New York, NY, 1975).
- 15. E. Pierrakos, The Pathwork of Self-Transformation (Bantam, New York, NY, 1990).

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- Shafica Karagulla & Dora van Gelder Kunz, The Chakras and the Human Energy Fields (Theosophical Publishing House, Wheaton, IL, 1989).
- 17. B. A. Brennan, Light Emerging (Bantam Books, New York, NY, 1993).
- 18. B. A. Brennan, Hands of Light (Bantam Books, New York, NY, 1987).
- 19. J. Schwarz, Human Energy Systems: A Way of Good Health Using Our Electromagnetic Fields (Arkana, New York, NY, 1979).
- R. O. Becker, & G. Selden, The Body Electric: Electromagnetism and the Foundation of Life William Morrow & Co., New York, NY, 1985).
- 21. H. S. Burr, *Blueprint for Immortality: The Electric Patterns of Life* (The C. W. Daniel Company, Ltd., Essex, England, 1972a.
- 22. L J. Ravirz, Electro-Magnetic Field Monitoring of Changing State-Function Including Hypnotic States, Condensed from a paper presented at 5th International Congress for Hypnosis and Psychosomatic Medicine, Johannes Gutenberg University, D6500 Mainz, Germany, May 22, 1970.
- L. J. Ravitz, Application of the Electrodynamic Field Theory in Bilogy, Psychiary, Medicine, and Hypnosis, 1: General Survey, *American Journal of Clinical Hypnosis* 1 (1959, pp. 135-150.
- H. S. Burr, & F. S. C. Northrop, The Electrodynamic Theory of Life, *Quarterly Review* of Biology 10 (1935,) pp. 322-333.
- H. S. Burr & F. S. C. Northrop, Evidence for the Existence of an Electrodynamic Field in Living Organisms, *Proceedings of the National Academy of Science of the United States* of America 24 (1939), pp. 284-288.
- H. S. Burr & C. T. Lane, Electrical Characteristics of Living Systems, Yale Journal of Biology and Medicine 8 (1935), pp. 31-35.
- 27. H. S. Burr, Electrometrics of Atypical Growth, Yale Journal of Biology and Medicine 25 (1952), pp. 67-75.
- H. S. Burr, The Meaning of Bioelectrical Potentials, Yale Journal of Biology and Medicine 16 (1944), pp. 353-360.
- 29. H. S. Burr, *The Fields of Life: Our Links to the Universe* (Ballantine Books, New York, NY, 1972b).
- 30. Dorothy Gundling, *Musical Massage Sound Therapy* (Morris Publishing, Kearney, NE, 1996).
- C. Howes, & C. E. Hamilton, Child Care for Young Children, In *Handbook of Research* on the Education of Young Children B. Spodek, Ed., Macmillan, New York, NY, 1993), pp. 322-336.
- 32. A.D. Pelligrini & B. Boyd, The Role of Play in Early Childhood Development and Education: Issues in Definition and Function, In *Handbook of Research on the Education of Young Children* (B. Spodek, Ed., Macmillan, New York, NY, 1993), pp. 105-121.
- D.L. Gallahue, Motor Development and Movement Skill Acquisition in Early Childhood Education, In *Handbook of Research on the Education of Young Children* (B. Spodek, Ed., Macmillan, New York, NY, 1993), pp. 24-41.
- K. L. Seifert, Cognitive Development in Early Childhood Education, In Handbook of Research on the Education of Young Children (B. Spodek, Ed., Macmillan, New York, NY, 1993), pp. 9-23.

- 35. C.A. Bruzzelli, Young Children's Moral Understanding: Learning about Right and Wrong, Young Children 47,6 (1992), pp. 47-53.
- G. W. Ladd, & C. C. Coleman, Young Children's Peer Relationships: Forms, Features, and Functions, In *Handbook of Research on the Education of Young Children* (B. Spodek, Ed., Macmillan, New York, NY, 1993), pp. 57-76.
- 37. J. Kuebli, Young Children's Understanding of Everyday Emotions, Young Children 49,3 (1994), pp. 36-47.
- 38. J. V. Alphen, & A. Aris, Eds., Oriental Medicine: An Illustrated Guide to the Asian Arts of Healing Shambala, Boston, MA, 1996).
- 39. David Eisenberg, Encounters With Qi: Exploring Chinese Medicine (Viking Penquin, New York, NY, 1987).
- 40. Genevieve Lewis Paulson, Kundalini and the Chakras: A Practical Manual Evolution in this Lifetime (Llewellyn, St. Paul, MN, 1994).
- 41. W. J. Kilner, The Human Atmosphere (University Books, New Hyde Park, NY, 1965).
- 42. W. Reich, The Discovery of Orgone, Vol. 1: The Function of the Orgasm (Farrar, Strauss, and Giroux, New York, NY, 1961). Translated by Theodore P. Wolfe
- 43. H. Motoyama, *Measurements of Ki Energy Diagnosis and Treatment* (Human Science Press, Tokyo, Japan, 1997).
- 44. R. O. Becker, Cross Currents: The Promise of Electro-Medicine (J.P. Tarcher, Los Angeles, CA, 1990).
- 45. R. White, Working with Your Chakras: A Physical, Emotional, and Spiritual Approach (Samuel Weiser, York Beach, ME, 1993).
- 46. D. Van Gelder Kunz, The Personal Aura (Quest Books, Wheaton, IL, 1991).
- 47. R. Adler, L. Rosenfeld, & N. Towne, Interplay: The Process of Interpersonal Communication (Holt, Rinehart, and Winston, Inc., New York, NY, 1989).
- 48. J. Wittmer, Valuing Diversity and Similarity: Bridging the Gap Through Interpersonal Skills (Educational Media Corporation, Minneapolis, MN, 1992).
- 49. A. Mehrabian, Nonverbal Communication (Aldine-Atherton, Chicago, IL, 1972).
- 50. R. Bakeman, & J. Gottman, Observing Interaction: An Introduction to Sequential Analysis (Cambridge University Press, New York, NY, 1986).
- G. K. Leigh, & J. A. Metzker, Reconceptualizing Our View of Children and the Role of Parents: A Theoretical Model for Change, Paper Presented at the Annual Meeting of the National Council on Family Relations, Crystal City, November 1997.
- J. A. Maxwell, Designing a Qualitative Study, In *Handbook of Applied Social Research Methods* (L., Bickman & D. J. Rog, Eds., Sage, Thousand Oaks, CA, 1998), pp. 69-100.
- 53. R. Tesch, Qualitative Research: Analysis Types and Software Tools (Falmer, New York, NY, 1990).
- 54. A. L. Strauss, *Qualitative Analysis for Social Scientists* (Cambridge University Press, New York, NY, 1987).
- 55. B. G. Glaser & A. Strauss, *The Discovery of Grounded Theory: Strategies for Qualitative Research* (Aldine Publishing Company, Chicago, IL, 1967).
- M. A. Eisenhart & K. R. Howe, Validity in Educational Research, In *The Handbook of Qualitative Research in Education* (M. D. LeCompte, W. L. Millroy & J. Preissle, Eds., Academic, New York, NY, 1992), pp. 643-680.

- 57. Valerie Hunt, Mind, Mastery, & Meditation: A Workbook (Malibu Press, Malibu, CA, 1997).
- C. E. Izard, & C. A. Malatesta, Perspectives on Emotional Development I: Differential Emotions Theory of Early Emotional Development, In *Handbook of Infant Development* 2nd Ed. (J. D. Osofsky, Ed., Wiley, New York, NY, 1987), pp. 494-554.
- F. A. Popp, Electromagnetism and Living Systems, In *Bioelectrodynamics and Biocommunciation* (M. W. Ho. F. A. Popp & U. Warnke, Eds., World Scientific Publishing, River Edge, NJ, 1993), pp. 33-80.
- 60. K. E. Allen, & L. R. Morotz, *Developmental Profiles: Pre-Birth Through Eight* 2nd Ed. (Delmar Publishers., New York, NY, 1994).

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