ATOL: Art Therapy OnLine

The Light Within: A pilot study, or a 'Note from the Field', examining the spontaneous production of light-emitting astronomical objects in child art

Gordon Chinamasa, Thomas M. Christian, Ron Kimbell

Abstract

The authors conducted research into the automatic artistic representation of luminous astronomical objects, especially the sun, in children's art. 25 artworks were collected and analyzed from local-area school-aged children of varying ages (ages 5-17). It was found that 100% of the drawings produced by children displayed some type of luminous astronomical object. Of these, 92% exhibited the sun exclusively. Too, 92% of the qualitative descriptions by the child participants expressed daytime features *per se.* Furthermore, 88% of the drawings revealed, strictly speaking, preference for either left or right page-orientation. That is, children drew the sun on either the left or right side of the page; children very rarely drew light emitting objects in the center of the page. The authors speculate about the various and compelling meanings associated with the data by way of four theoretical models: 1) Biological; 2) Psychological; 3) Philosophical-Religious; and, 4) Anthropological.

Keywords
Psychology of art, Art interpretation, Child art, Philosophy of art, Psychology and Nature interface.

Introduction

"The light that you see by is the light that comes from inside."
(Vijnana Bhairava Tantra, Trans. Lorin Roche, 2014 p. 72)

The interconnections between art and psychology have captivated the interest of both academics and mental health clinicians for close to 150 years. For instance, Ambroise Tardieu's (1872) tome, *Etude Médico-Légale sur la Folie,* offers legally grounded rationale for mental health diagnosis by way of patients' drawings. Importantly, and even predating Tardieu, in the mid-19th Century, are examples of the first recorded pieces of art serving directly as psychotherapy *per se* (Park, 2003). In this vein, Hans Prinzhorn's (1972) classic, *Artistry of the Mentally Ill,* serves as a paragon for collections of "art and insanity" (p. 1).

Coupled with an interest for drawings produced by mental health patients, a deep fascination with child development and child psychology provided the impetus for the recording of children's artworks by researchers like Cooke (1885) and Ricci (1887). Indeed, the clinical and theoretical attraction to children's drawings grew out of the dual fascination with the art of the mentally ill alongside developmental psychology, especially those psychologies emanating from great thinkers like Freud, Jung, and Piaget (Malchiodi, 1998).

Essentially, and quite simply, Freud (1933, 1913) views art as representing repressed memories, wishes, and fantasies; and, likewise, these representations are motivated by deep human conflicts and neuroses. Art, then, acts as a thoroughfare for comprehending deep realities of the psyche in Freud's estimation. And the artist, according to Freud (1913), "consumed by desires performs something resembling the

accomplishment of those desires" in artistic endeavoring (p. 90). In effect, the artist produces "emotional effects" in the "play" of art-production which in fact betray the artist's own interior passions and wish-fulfilling drives (Freud, 1913, p. 90).

Jung, like Freud, views art as serving as a doorway to witnessing deep realities of the psyche as well (Jung, 1976); but, Jung's version of these deep psychic realities differs from Freud's in that art can represent universal longings for greater consciousness, both personally and collectively (Jung, 1989). These yearnings "grow up from the dark depths like a lotus" (Jung, 1976, p. 198), for Jung, and can carry with them the potentialities and the power of nature itself.

Piaget's (1951) notion of cognitive development in children follows a developmental progression and trajectory, and this developmental trajectory is witnessed in child imitation and child symbolic activity. As such, Piaget focuses on cognitive movement from concrete to pictorial thinking, and then on to abstract thinking, categories that denote cognitive maturation. These vital developmental milestones are thus evinced through childrens' symbolic creations while also revealing child concepts of their perceived world (Piaget, 1951). In Piaget the ability to enact symbolic and representational activity is thus rooted in the complex interconnections between cognitive development, cognitive schemas, and the physical environment.

In point of fact, and over the course of time, using children's drawings has proven to be an effective and powerful strategy for gaining insight into children's emotions, experiences, cognitions and mental processes (Borthwick, 2011; Piaget, 1951; Piaget & Inhelder, 1956). Various data collection methods can be utilized to glean information apropos of children's levels of cognition, mental processes and perceptions, including interviews and the collection of written responses to open-ended questions; but, in the last analysis it appears that art, *ipso facto,* can act as a more effective tool than any other method in articulating and comprehending the interior subjective experiences of children (Prokop & Fančovičovă, 2006).

Certain studies indicate the importance of using children's drawings as a lens into understanding their mental images, perceptions, and thinking processes. For instance, Weber and Mitchell (1996) point out that drawing provides children with a comfortable atmosphere that enables them to freely express their thoughts and emotions, and drawings convey various communicative and symbolic messages. Thus, the act of drawing can also be a convenient and non-threatening means of communicating for children, especially for children who may be afraid of expressing themselves verbally (Reiss & Tunnicliffe, 2001).

One important aspect of child artistic and symbolic expressioning is witnessed in children's nature drawings. Ulker (2012) examined how Turkish children in kindergarten through 8th Grade spontaneously drew nature pictures, analyzing what children included in such pictures, and how the nature symbols were arranged. Similarly, Yilmaz, Kubiakto and Topal (2012) conducted a study of children from Czechoslovakia investigating how Czech children drew nature scenes, again with an eye on what symbols were included and how they were arranged. Findings from these studies indicate that at certain times children appear to draw idiosyncratic spontaneous nature images, while at other times, children may draw universal nature symbols, including the sun, mountains, rivers, and the like.

The Research Question

In this current study, we examine the automatic solar representations in landscape drawings of children. It is noticed by the researchers that in clinical work, whenever children enact the drawing of a landscape scene, a solar symbol or some other light-emitting object curiously buttresses the drawings. Therefore the researchers, by way of this study, focus on further investigation of this automatic solar symbolization phenomenon. The research questions that drove this investigation were rooted in:

1. How often are suns automatically depicted in landscape scenes/outdoor scenes of children?
2. How are these automatic depictions of suns oriented to the page (e.g., left, middle, or right oriented)?

3. How do the children temporally interpret their own automatic input of solar symbols?

The researchers hypothesized the following: That the drawings would depict daytime scenes; and, that the solar depictions would exhibit a right-hand orientation (right side of the page).

Method

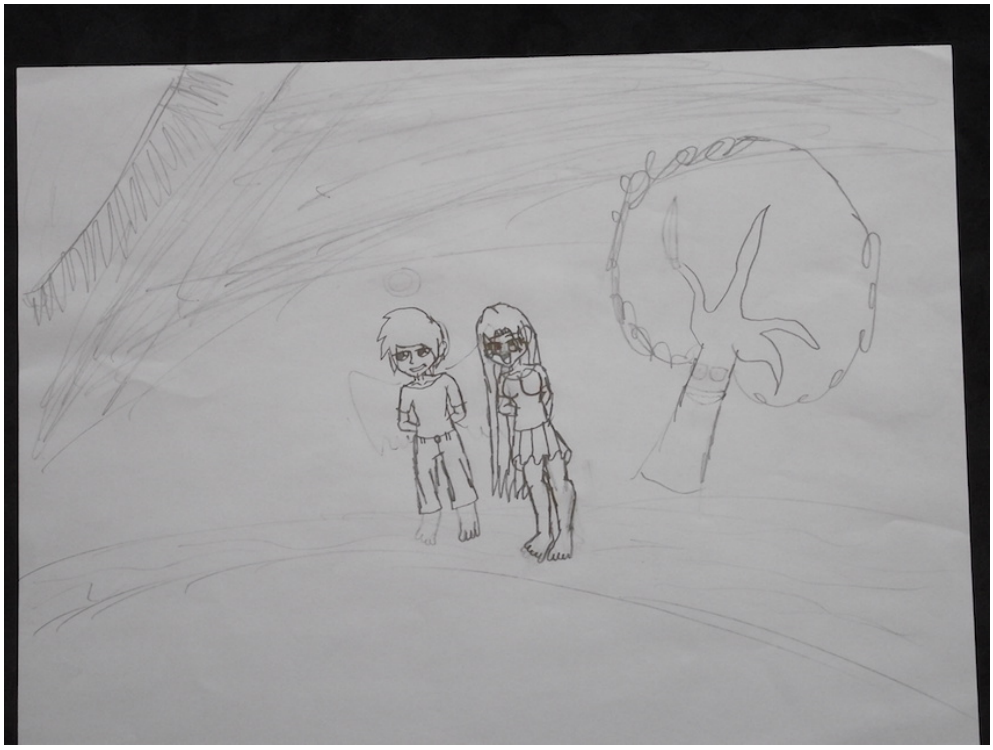
For this study, 25 children ages 5 to 17 volunteered from local-area schools. A random selection method was utilized to select the study participants. Anonymity was of the utmost concern, and therefore verbal consent was obtained from parents. The study was hosted at a school site in the United States, and was facilitated by the authors as well as an afterschool program staff-member who functioned under the purview and direction of the authors.

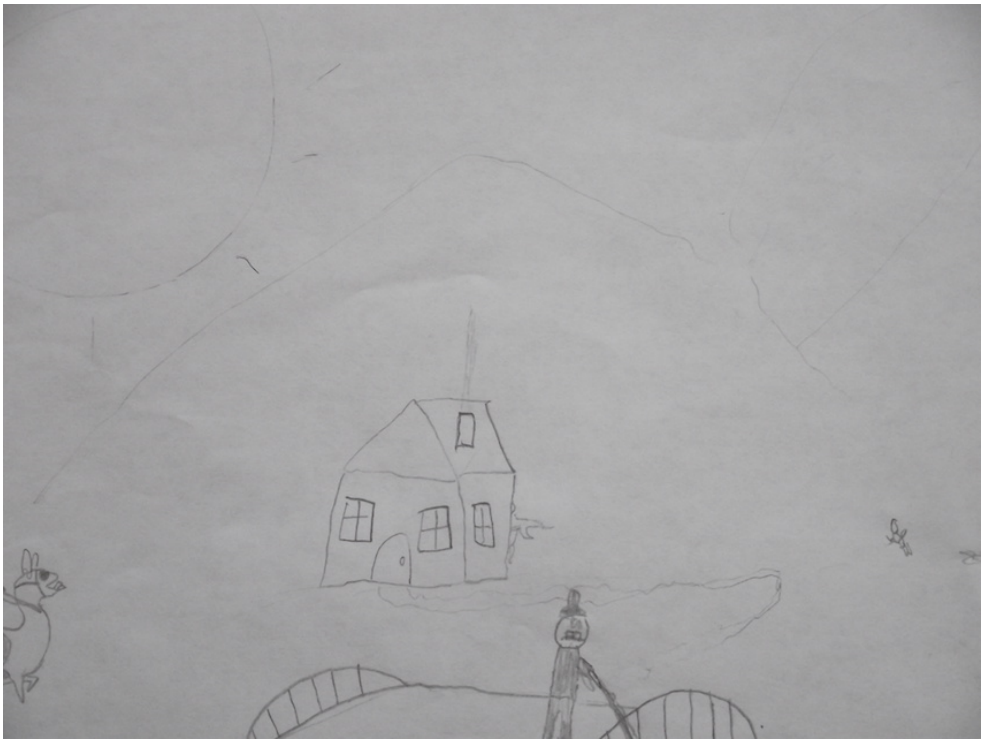
The study was performed in two stages. For the first stage participants were provided with the following simple instructions upon the initiation of drawing and at the completion of drawing, respectively:

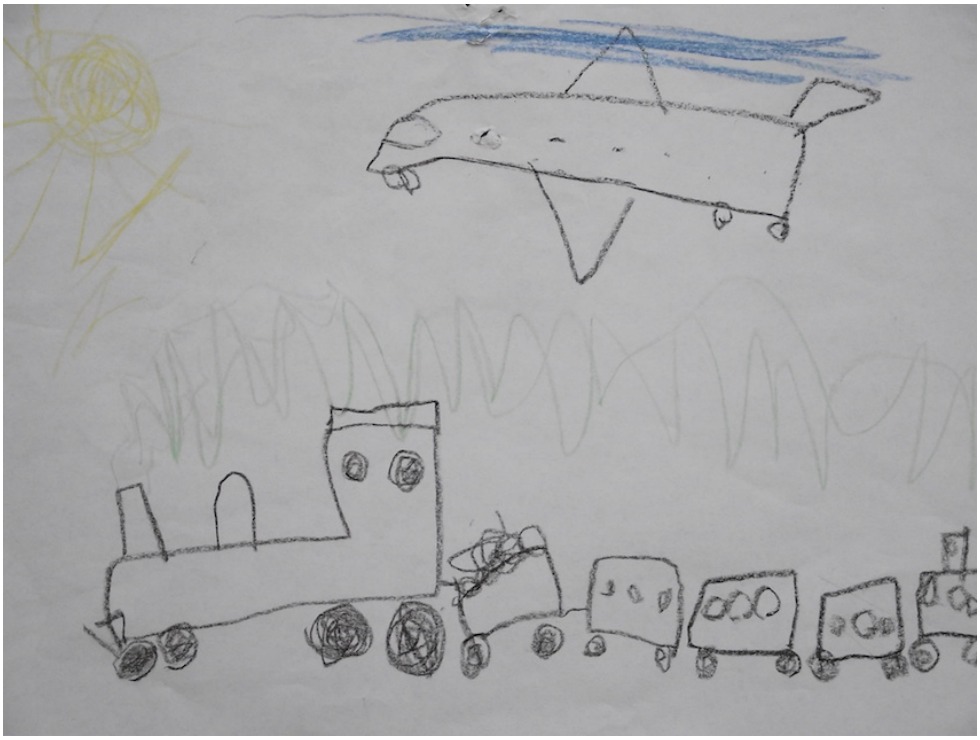
1. "Please draw a landscape scene, whatever comes to your mind." For the younger participants who did not know what the term "landscape" indicated the terms "outdoor" and "outside" were used as alternative descriptors.
2. Once the drawing was completed the researchers then asked: "What time of day is it in your picture?"

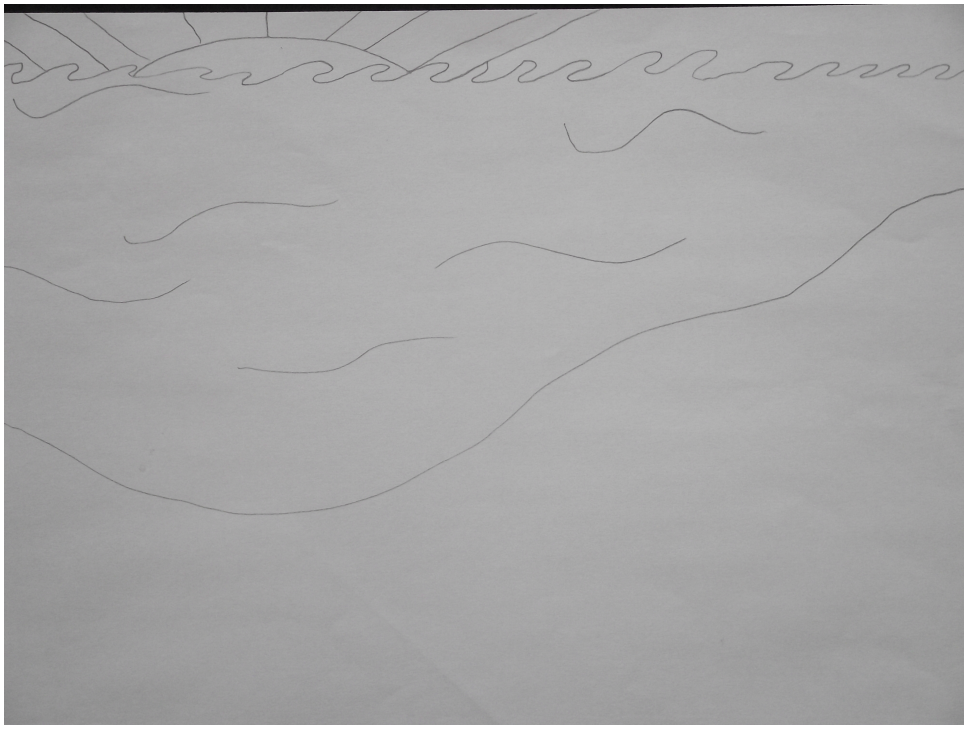
The materials for this project included paper, pens, pencils, markers, and crayons.

The second stage of the study included collecting all of the drawings, determining and implementing the coding schema, and finally, undertaking the statistical analysis of the drawings. Below are samples of participants' drawings that were coded under the differing categories determined in the coding schema.









Analysis of the Data

The study content analysis method (Finson, Beaver, & Cramond, 1995) was employed by the researchers to analyze each drawing; and, upon examination of each drawing the researchers determined the appropriate coding schema appropriate to each example. Table 1 represents the coding schema that was employed, along with their descriptions. To ensure the reliability of the study, the researchers both collectively and independently sorted each drawing under the three categories determined by the coding schema. During the sorting process, the researchers discussed and agreed upon each drawing's respective category. Each feature under investigation was coded and recorded.

Table 1.

Coding Schema of the Study and Description of the Categories

Categories	Description
1. Presence of the sun or some other light emitting object	The children automatically depicted a solar symbol, or some other light-emitting object, on the drawing (moon and stars respectively). The typical representation was that of the sun.
2. Location/orientation of the solar symbols on the page (left-right-middle)	The children located the solar symbols as follows: 1. The sun was oriented to the right or left-hand corner of the page, and was depicted in a circular shape or a non-circular shape. 2. The moon and one sun were located in the middle of the drawing.
3. Interpretation of the time of day	The children typically interpreted the time of day as "daytime" and there was equal representation of sunrise, afternoon and sunset scenes.

Findings

Table 2 presents the results of the schematic analysis of the drawings. Overall, and significantly, all of the 25 drawings display luminous astronomical objects, depicted as either sun, moon, or stars. Strictly speaking, out of the total 25 drawings, 23 exhibit the sun, 1 depicts the moon, and 1 exhibits stars.

Table 2.

Simple count of representations

Luminous astronomical object	Frequency	Percent
Sun	23	92.0
Moon	1	4.0
Stars	1	4.0
Total	25	100.0

Table 3 presents a tally of the time of day for each drawing, as indicated by the participants. As the table demonstrates, 92% of the time participants drew daytime scenes exclusively, and therefore, in their personal descriptions they highlight daytime hours (segments of the day that include the sun). Notwithstanding, there is a large descriptive range respecting notions of "daytime" as such. For instance, children indicate certain and idiosyncratic times of day like "Sunrise", "Noon", "Afternoon", and the like. Indeed, there were 10 such descriptors used by children.

Table 3.

Participants' descriptions of the time of day

Description	**Frequency**	**Percent**
Night time to day	1	4.0
Sunrise	3	12.0
Morning time	2	8.0
Day	2	8.0
Noon	3	12.0

Sunny	3	12.0
Afternoon	4	16.0
Sunset	3	12.0
Night	1	4.0
Midnight	1	4.0
No description	2	8.0
Total	25	100.0

Table 4 displays the orientational aspects of the various drawings. Importantly, 88% of the drawings were either left or right page-oriented; and, all of these were reflective of solar symbolization, indicating some sort of preference amongst participants for left or right page-oriented solar depiction.

Table 4.

Orientation of solar and other luminous astronomical objects

Orientation	Frequency	Percent
Left	11	44.0
Middle	2	8.0
Right	11	44.0
No orientation	1	4.0
Total	25	100.0

Discussion

The authors interpret the data along four conceptual modes, or lines of thought. These modes of interpretation are as follows: 1) Biological; 2) Psychological; 3) Philosophical-Religious; and, 4) Anthropological.

A biological explanation of the data is witnessed in the fact that humans exhibit a primary diurnal preference, a preference which is intrinsic to both central nervous system operations and evolutionary/genetic ordinances (Scheer, van Doornen & Buijs, 1999). The authors speculate that perhaps the child participants, via their repetitive exhibition of solar drawings, are symbolically articulating or representing their innate and genetic diurnal preference. In point of fact, it may be that the children are unconsciously expressing their automatic and evolutionarily determined predilection for daytime scenes. In a sense, then, the children are projecting onto the page artworks that represent genetically predetermined factors.

Psychologically speaking, there is an argument to be made for the notion that the overrepresentation of solar symbols, as well as other light emitting objects, is constitutive of an innate object-relatedness with general environmental facets of human experience. Put simply, the sun in the earth's sky is incorporated into the psyches of the child participants—suggesting an internal relationship with the sun, and other natural objects—thus becoming an internal psychological symbol of the sun (Akhtar, 2005); this internal representation is then projected onto the child participants' artworks. The psychological value of the sun, with other light emitting objects, may be indicative of a psychological preference for light, as "most children have early experiences which lead them to prefer light rather than darkness" (McDougall, 1990, p. 298).

Apropos of Philosophical-Religious interpretations the authors speculate that the light depicted in the child participants' drawings is suggestive of the ultimate Philosophical-Religious value of 'consciousness' per se; that, indeed, the overrepresentation of sun symbols and light emitting objects correlates with a symbolization of the Ultimate Self; or, as Jung describes it, the Self as the "principle and archetype of orientation and

meaning" (1989, p. 199). Though conceptive, speculative, and unable to be proved it may be that the child participants are visually and artistically enacting an inner philosophical sense of their interior self, their own consciousness, by way of their artworks.

Finally, from an anthropological perspective, it is entirely possible that the abundance of solar representations exhibited in this study indicates a primary connection between humans at large and their tendency to replicate symbols and culture by way of the activity of symbolic diffusion, an anthropological function that transfers culture and symbols from one person to another or from one society to another (Hann, 2013). Thus, the child participants, through the function of symbolic diffusion, may be automatically reproducing symbols and images that were in fact already 'learned', or were 'transferred', to them from elsewhere/from others.

Until more extensive research is performed any and all of these explanations may be valid. The authors suggest using a larger experimental group with more in-depth subjective measures to further examine and assess the probable psychological and/or anthropological provenance of the 'abundance of solar representation' phenomena in child art.

Biographies

Gordon Chinamasa, LMSW, MA is a Social Worker established in the educational environment. He works closely with children in assessment and psychotherapy as well as family advocacy. Gordon is an analytically-enriched professional who sees art as reflecting vital interior and subjective experience, especially for children.

Thomas M. Christian, Ph.D., LCSW is a scholar of Humanities and an Active Duty Naval Clinical Social Worker. Thomas has compelling interests in Psychoanalysis, its history, and its clinical applicability. He is currently an Academic/Psychoanalytic Scholar Candidate at both the Dallas Psychoanalytic Center, University of Texas Southwestern Medical Center and San Diago Psychoanalytic Center.

Ron Kimbell, LCSW serves as the Division Director of Klaras Center for Families, a State of Texas MHMR community mental health clinic in Waco, Texas. Ron has prevailing clinical interest in Psychoanalytic theory and history, and is a Psychoanalytically-informed mental health clinician.

References

Akhtar, S. (2005). Early relationships and their internalization. In E. S. Person, A. M. Cooper, & G. O. Gabbard (Eds.) Textbook of Psychoanalysis (pp. 39-56). Washington DC: The American Psychiatric Publishing.

Borthwick, A. (2011). Children's perceptions of, and attitudes towards, their mathematics lessons. In C. Smith (Ed.), *British Society for Research into Learning Mathematics*, *31*, 37-42.

Cooke, E. (1885). Art, teaching, and child nature. *Journal of Education, 22,* 35-40.

Finson, K. D., Beaver, J. B., & Cramond, B. L. (1995). Development and field tests of a checklist for draw: A scientist test. *School Science and Mathematic, 95* (4), 195-205.

Freud, S. (1913). *Totem and Taboo.* In J. Strachey (Ed. and Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 12, pp. vii - 162). London: Hogarth Press.

Freud, S. (1933). *New Introductory Lectures On Psycho-Analysis.* In J. Strachey (Ed. and Trans.), *The Standard Edition of the Complete Psychological Works of Sigmund Freud,* (Vol. 22, pp. 1-182). London: Hogarth Press.

Hann, M. (2013). Symbol, pattern and symmetry: the cultural significance of structure. London: A&C Black.

Jung, C. G. (1976). *The symbolic life.* Collected works, Vol. 18. Princeton: Princeton UP.

Jung, C. G. (1989). *Memories, dreams, reflections*. New York, N.Y.: Vintage Books.

Malchiodi, C. (1998). Understanding children's drawings. Guilford P.

McDougall, D. (1990). Psychological and educational perspectives on the development and reductionof prejudice among children and adolescents. In E. Orteza y Miranda & R. F. Magsino (Eds.), *Teaching schools and society* (pp. 285-310). Bristol, PA: Falmer Press

Park, M. (2003). Early examples of art in Scottish hospitals, 2: Crichton Royal Hospital, Dumfries. *Journal of Visual Communication in Medicine,* 26(4), 142-146.

Piaget, J. (1951). *Play, dreams, and imitation*. London: Routledge and Kegan Paul.

Piaget, J., & Inhelder, B. (1956). *The child's conception of space*. London: Routledge and Kegan Paul.

Prinzhorn, H. (1972). *Artistry of the mentally ill*. New York: Springer.

Prokop, P., & Fančovičová, J. (2006). Students' ideas about the human body: Do they really draw what they know? *Journal of Baltic Science Education, 2* (10), 86-95.

Reiss, M. J., & Tunnicliffe, S. D. (2001). 'Students' understandings of human organs and organ systems. *Research in Science Education, 31,* 383-399.

Ricci, C. (1887). *The art of children.* Bologna, Italy.

Roche, L. (2014). *The Radiance Sutras.* Boulder: Sounds True.

Scheer, F. A., van Doornen, L. J., & Buijs, R. M. (1999). Light and diurnal cycle affect human heart rate: possible role for the circadian pacemaker. *Journal of biological rhythms*, *14*(3), 202-212.

Tardieu, A. (1872). Etude Medico-Legale sur la folie. Bailliere, Tindall and Cox: Paris.

Yilmaz, Z., Kubiatko, M., & Topal, H. (2012). Czech children's drawing of nature. *Educational Sciences: Theory & Practice*, *12*3, 111-3119.

Ulker, R. (2012). Turkish children's drawing of nature in a certain way: Range of mountains in the back, the sun, couple of clouds, a river Rising from the mountains. *Educational Sciences: Theory & Practice*, *12*3, 173-3180.

Weber, S., & Mitchell, C. (1996). Drawing ourselves into teaching: Studying the images that shape and distort teacher education. *Teaching & Teacher Education, 12* (3), 303-313.