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**Identifying Children and Adolescents at Risk for  
Depression and/or Aggression**

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### **Abstract**

Violent incidents occur frequently in schools and suicide ranks second to accidents as the leading cause of death among adolescents. The purpose of this presentation is to summarize the findings of six studies that used a stimulus-drawing task for access to fantasies, thoughts, and feelings. The studies were based on the theory that the task can serve as a first step in identifying children and adolescents at risk. The studies also examined gender and cultural differences or similarities, and were conducted in schools or in facilities for delinquent adolescents in the U.S.A, Russia, and Thailand.

The task presents line drawings of people, animals, places and things, asks respondents to choose two, imagine something happen between them, draw what they imagine, and add titles or stories. Responses are scored on rating scales that range from strongly negative, such as suicidal or homicidal themes to strongly positive, such as loving relationship.

In the first study, the task was presented to 290 children, adolescents and adults; 50 were clinically depressed; the others were normal or had different disabilities. Results indicated that significantly more depressed subjects scored 1 point than any other group. Inter-scorer and retest studies found the scale reliable. The second study asked if self-images in the responses of 64 delinquent adolescents could be identified without talking to those who drew them.. The third study examined responses by 64 delinquent and 74 non-delinquent adolescents for attitudes toward self and other, finding no significant differences in gender or delinquency, but significant differences in assaultive and solitary content as well as differences in gender and delinquency. The fourth study used two scales in comparing responses by 30 students who had histories of aggressive behavior with 181 non-aggressive students. One scale assessed responses for emotional content; the other, assessed self-images. The study found significant differences between the groups of aggressive and non-aggressive students. Gender differences and two subgroups of aggression also emerged: reactive aggression and predatory aggression. In the fifth study, Russian investigators compared 27 delinquent and 25 non-delinquent adolescents, finding no significant cultural differences in subjects scoring 1 point on both scales but significant differences in self-image scores and between experimental and control groups. The sixth study, in Thailand, assessed effects of an art therapy program on delinquent adolescents, dividing the sample into experimental and control groups. Pre- and post-test scores of the experimental group and control group differed significantly.

The studies seem to support the theory, and suggest that respondents who score 1 point on both scales, or else 1 point in emotional content combined with 5 points in self-image be promptly referred to mental health professionals for further evaluation

## **Identifying Children and Adolescents at Risk for Depression and/or Aggression**

Incidents of aggression occur frequently in schools, and students who have emotional problems tend to mask depression. Among adolescents, suicide ranks second to accidents as the leading cause of death, and children as young as six may suffer from depression. Although some schools address these problems effectively, others are overwhelmed with responsibilities and may overlook patterns of anti-social behavior.

This presentation proposes that a stimulus-drawing assessment can be an effective first step in identifying students at risk. It reviews six studies that found responses to the drawing task could provide access to fantasies and concerns. Drawings tend to be less guarded than words, offering glimpses into the ways respondents tend to see themselves and their worlds. They also seem to activate mirror neurons in the brains of observers, as discussed later on.

The drawing task presents an array of stimulus drawings – line drawings of people, animals, places, and things – and asks respondents to choose two, imagine something happening between the subjects they choose, draw what they imagine, and then write titles or stories. Respondents are encouraged to change the stimulus drawings and add their own ideas. Discussions follow in order to clarify meanings, and responses are scored on 5-point rating scales that range from strongly negative to strongly positive.

### **Theoretical Background**

McKnew, Cytryn, and Yahres (1983) observed that some children mask depression with antisocial behavior, and expressing fantasies of violence, annihilation, and death. As a result, their depression is often undiagnosed or misdiagnosed. Beck, Rush, Shaw, and Emery (1979) suggested three major patterns of depression: negative views of self, a tendency to interpret one's experiences in a negative way, and a negative view of the future. Birmaher et al (1996) noted that depression in childhood and adolescence is characterized by increased risk for homicidal ideation.

Conner (2002) observes that young children with depression might have difficulty expressing subjective feelings in words, that the prevalence of depression increases from childhood to adolescence, and that it varies by gender, with higher rates reported among female adolescents. He also distinguishes between adaptive and maladaptive aggression. Adaptive aggression tends to be predatory, deliberate, and coercive. Its goal is to obtain a desired outcome or reward, such as social dominance, territory, or acquisition. Some degree of aggression is normal and healthy, such as competition in games. Maladaptive aggression is angry reaction to perceived frustration. Its goal is to defend against threat or inflict harm, and it produces intense feelings of anger and fear. These aggressors tend to overreact and expose themselves to harm, behaviors that call for clinical intervention.

Neuroscientists have noted that visual artists have the ability to “abstract the essential features of an image and discard redundant information, essentially identical with what visual brain evolved to do” (Zeki, 1999, p 17). According to Ramachandran

and Hirstein (1999), Hindu artists capture and convey the “rasa” or essences of objects. These neuroscientists may be unaware that visual artists have made similar observations since 10<sup>th</sup> century in China when Ching Hao advised art students to “disregard the varying minor details, but grasp their essential features.” (Sakanishi, 1948, p.84).

Other neuroscientists using MRI scans have tracked mirror neurons, a fundamental brain mechanism (Gallese, Keysers, & Rizzolatti, 2004). They suggest that the function of mirror neurons may be to detect mental states and empathize with the behaviors of others, enabling one individual to understand the emotions, intentions, and actions of another, linking “what I do and feel” with what someone else does and feels.

Freedberg and Gallese (2007) note that implications of the discovery of mirroring mechanisms for empathetic responses to images in general and works of visual arts in particular, have not yet been assessed. They propose that these mechanisms involve the understanding of intentions that underlie action, and are universal. Empathetic feelings can be precisely located in areas of the brain that are activated both in the observed and in the observer. They also raise questions for future research; among them, what are the therapeutic possibilities of observing the movement and emotion in works of art?

These reports raise a question about the implications of mirror neurons: do stimulus drawings in the studies reviewed below activate mirror-neurons in the brains of children and adolescents who respond to the drawing task? Psychologists have used drawings to assess emotions and cognition since at least the 1960s (Goodenough, 1963); and art therapists have used drawings since at least the 1970’s (Kramer, 1971).

## **The First Study**

The first study was undertaken in search of answers to a question (Silver, 1988a). Previously, when the stimulus-drawing task in the *Silver Drawing Test* was presented to groups of students, a few responded with fantasies about suicide, and more than a few drew fantasies about death, dying, and hopeless situations, raising the question whether the task might also be used to screen for depression (Silver, 1983).

The stimulus drawing array was altered and the new array presented to 254 children and adolescents, ages 8 to 21, in various parts of the country. Of these, 111 were presumably normal, 27 were clinically depressed, 31 learning disabled, 61 emotionally disturbed with non-depressive psychopathology, and 24 were normal children who responded to the drawing task on more than one occasion.

Their responses were scored on a rating scale that ranged from strongly negative themes, such as suicide, to strongly positive themes, such as honeymoons. The score of 1 point was based on observations by suicidologists. Although they did not investigate drawings, their observations about the characteristics of depression, such as hopelessness, and fantasies of violence and death, served as a paradigm for evaluating responses to the new, *Draw A Story* task. Examples of responses scored 1 point are shown in Figure 1.

To determine the scale’s scorer reliability, 20 unidentified responses were scored blindly and independently by three art therapists. Results indicated that the correlations between judges were highly significant at the .001 level.

Retest reliability also was examined. When two adolescents with clinical depression responded to the drawing task on two occasions several weeks apart, both consistently scored 1 point. When 12 normal third-graders were retested after an interval

of approximately one month, 7 received the same scores, 3 had higher scores, and 2 had lower scores. When 12 other normal children were retested after an interval of approximately two years, 11 received the same scores.

**Results.** Approximately 56% of the depressed subjects responded with strongly negative fantasies scored 1 point, compared with 11% of the normal subjects, 21% of the emotionally disturbed, and 32% of the learning disabled.

To determine whether these differences were significant, a chi-square test found that the proportion of depressed subjects who scored 1 point was significantly greater than the proportion of normal subjects who scored 1 point (27.63,  $p < .001$ ), and the proportion of emotionally disturbed subjects but to a lesser degree (10.54,  $p < .01$ .)

Based on these findings, there appeared to be a link between depressive illness and strongly negative responses to the Draw A Story (DAS) task, suggesting that a child or adolescent who scores 1 point may be at risk for depression.

The findings of retest reliability suggested that negative responses tend to persist over time, reflecting characteristic attitudes rather than passing moods.

The study was expanded to include 18 deaf children, 15 depressed adults, and 27 elderly adults (Silver 1988b), and again more depressed children and adolescents scored 1-point significantly more often than any other group, as shown in Figure 2 and Tables I and II.

## The Second Study

This study asked whether self-images in responses to the task by incarcerated adolescents, could be identified without discussing their drawings with them (Silver and Ellison, 1995). Previous studies had found that respondents tend to draw pictures about subjects the same gender as themselves to degrees significant at the .001 level of probability (Silver, 1992, 1993),

Ellison presented the drawing task to 53 boys and 11 girls, ages 13 to 17, attending four English classes in a juvenile detention facility in California, evaluated their responses, asked them to identify characters in their drawings that might be themselves, and recorded their responses and her own ratings. Retaining the data in a sealed envelope, she sent the 53 drawings (identified only by number) to Silver who rated them blindly, and sent the findings to a psychologist who analyzed the data.

**Results.** Of the 53 adolescents, 39 identified characters in their drawings as self-images. Ellison who knew their histories and conducted the interviews, accurately matched 76.9% of the adolescents. Silver, judging blindly, matched 71.8%. The average interscorer validity index was 74.4%. The inter-scorer agreement found between Ellison and Silver, was 94.3%.

Five respondents disagreed with both Ellison and Silver who agreed with each other in identifying self-images. Because the inter-scorer agreement suggested strong reliability, the five drawings that prompted disagreement were reexamined.

Figure 3, for example, is the response by "Roy", age 14, who had selected three stimulus drawings - an angry person, a sword, and a couple with arms entwined. Asked how he imagined his characters would feel, he said the man was very angry, the girl and boy were happy, and if he were in the picture, he would be the boy with the girl: Both art therapists identified the angry man as Roy's self-image.

These findings suggested that discussion is not essential for identifying self-images. Although discussion is preferable, and the more discussion the more accurate perceptions are likely to be, it may also be bypassed when circumstances or time limitations make interviews impossible.

### **Third Study**

This study examined responses for gender and delinquency differences in attitudes toward self and others, using a rating scale and comparing experimental and control groups (Silver1996). The scale ranged from 1 point for strongly negative content, such as assaultive relationships or sad solitary subjects, to 5 points for strongly positive content, such as loving relationships or solitary subjects represented as successful or powerful. The participants included 138 adolescents, ages 13-17; the 64 in detention in California, together with 74 non-delinquent adolescents, 82 boys and 56 girls attending public school students in Ohio, New York, and Florida.

**Results.** As measured by the self-image scale, a 2 x 2 ANOVA found no significant differences in gender or delinquency, but gender differences emerged in assaultive as well as solitary content at the  $p < .01$  and  $p < .05$  levels respectively. About twice as many boys as girls drew fantasies about assaultive relationships (31.5% boys, 15.9% girls); and about twice as many girls drew fantasies about solitary subjects (37.5% girls, 15.9% boys).

Almost half of the drawings about assaultive relationships (47%) depicted heroes responding to violence, such as protecting innocent victims. More non-delinquent than delinquent boys drew fantasies about assaultive relationships, and almost half (45%) drew humorous fantasies about unhappy victims.

For example, "Godzilla Vs Mighty Mouse" (Figure 4 ) was the response of a youth age 18 who seems to identify with Godzilla who bites off the mouse's tail while it cries for help. No humor appeared in the assaultive fantasies of delinquent boys or non-delinquent girls, and none of the delinquent girls drew assaultive fantasies. These findings suggest that it is important to distinguish between humorous fantasies about bullying victims, and non-humorous fantasies about victims responding to bullies.

Although most respondents drew fantasies about relationships, some depicted solitary subjects; more delinquent than non-delinquent, and more girls than boys. In addition, more girls than boys expressed negative feelings about their solitary subjects; and regardless of delinquency, more than twice as many girls as boys drew sad, isolated, or endangered subjects, scoring 1 point, as shown in Table 3.

No delinquent girls drew successful solitary subjects or expressed positive feelings toward the subjects they chose, even though more girls than boys drew successful solitary subjects, scoring 4 or 5 points. It may be that the sample of 11 delinquent girls was too small to warrant comparison, or that delinquent girls may to more at risk.

### **Fourth Study**

This study began with finding that the DAS scores of children and adolescents with histories of aggression differed significantly from the scores of students with no histories of aggression (Earwood, Fedorko, Holzman, Montanari, and Silver, 2004), and

continued by reexamining these responses by 30 aggressive and 181 non-aggressive students more closely (Silver, 2005). The aggressive group, 25 boys and 5 girls, ages 8 to 19, attending four public schools in New Jersey and Florida, were selected by four art therapists, based on teacher reports, school records, and their own observations. The non-aggressive control group included students in English or art classes who had received parental permission to participate in the study.

The four art therapists used two scales in assessing these responses. The Self-image scale ranges from strongly negative, such as drawings about suicide (1 point) to strongly positive, such as drawings about successful self-images (5 points). The Emotional Content scale ranges from strongly negative, such as life-threatening relationships (1 point) to strongly positive, such as drawings about caring relationships (5 points). These scales were found reliable with inter-scorer agreements of 80% and 82.5% respectively. (Silver, 2007).

**Results.** Five of the 30 aggressive students and eight of the 181 presumably typical students scored 1 point in both Self Image and Emotional Content, suggesting that they were depressed, choosing stimulus-drawing subjects that seem to symbolize themselves, and portraying themselves in mortal danger, as shown in Figure 5.

More than twice as many aggressive than control students scored 1 point on the Emotional Content scale (63% compared with 30%), and almost three times as many scored 5 points on the Self-image scale (43% compared with 15%). In addition, the aggressive students had significantly lower scores in Emotional Content, combined with significantly higher scores in Self-image than the controls. ANOVAs found that aggression was significantly related to self-image scores at the .05 level, and to emotional content scores at the .01 level.

Significant gender differences emerged, but not age differences. In both groups, girls had significantly higher scores in Emotional Content, whereas boys had significantly higher scores in Self-Image, and were more likely to be identified as aggressive.

As for self-images, girls in the aggressive group had lower, more negative scores than girls in the control group (mean scores 2.6 and 3.2 respectively). Boys in the aggressive group had higher, more positive scores (3.8 and 3.2 respectively).

Two subgroups of aggression also emerged: predatory and reactive. Too small for statistical analysis, they seem to differ in motivation and intensity.

**Predatory Aggression.** In the aggressive group, 17% drew predatory and homicidal fantasies, seemed to identify with their assailants and amused by their victims, scoring 5 in Self-Image and 1 in Emotional Content. They also tended to conceal the identities of assailants and victims, making knife-wielders invisible, and representing victims as chicks or mice, as in Figures 6a and b.

In the control group, only 3% drew predatory fantasies. Since their humor seemed to serve various functions, 849 responses to the drawing task were reexamined and 16% found humorous; of these, 68% were negative, 24% positive, and the remaining 8%, ambiguous (Silver, 2002). Consequently, a new, 5-point, Use of Humor scale was devised, ranging from lethal, scored 1 point (joking about assailants murdering victims); to playful, scored 5 points, and age and gender groups compared.

**The Use of Humor.** Six of the 30 aggressive students (20%) used humor, and their humor was strongly negative, both homicidal and morbid; none used positive or ambivalent humor.

For example, one boy, age 12, chose two stimulus drawings: the dinosaur and The man with a pipe, and then drew, “The man is going to die o no.” (Figure 7a).

Another youth, age 17, drew “Shooting Spree.” (Figure 7b). Although he did not chose any stimulus drawings, he dictated this story: “The guy shoots the man in the throat, then in the head. He takes a knife and decapitates him. Then he goes after the next guy. These are the only kinds of pictures I like to draw. It’s not because I’m crazy or anything. I just find them funny.”

Subsequent studies made the humor scale more precise, such as distinguishing between humor that was both lethal and morbid (1 point), and lethal but not morbid (1.5 points). Assessed for inter-scorer reliability, the scale was found reliable at the 0.861 level (Silver, 2007).

All of the students in both groups who drew predatory fantasies used lethal humor; 20% of the aggressive students compared with 1.6 % of the control group. The students with histories of aggressive behavior used humor that was both morbid and lethal.

In the control group only three students drew humorous responses, and their humor was positive, one was playful (5 points), two were resilient (4 points).

These findings suggest that there is an association between aggressive behavior and strongly negative humor, and since no humor appeared in responses that suggested reactive aggression, the score of 1 point on the humor scale may also distinguish between predatory and reactive aggression.

### **Subgroup of Reactive Aggression**

Respondents in this group seem to express an angry reaction to danger. Five of the 30 aggressive students drew fantasies about reacting violently to attacks initiated by others, scoring 1 point in emotional content combined with 5 points in self-image.

For example, a boy, age 12, chose and drew the parachutist, knife in hand, two faceless men holding guns, and a house without windows or doors, as shown in Figure 8a, titled, “Guy saving his girl friend. Evil guys are trying to kill him.” He identified the parachutist as himself. According to his history, he is overweight, often bullied by his peers, and receiving therapy elsewhere. His school did not provide clinical or preventative programs.

A youth, age 17, in a Special Education class for emotionally handicapped students, chose the snake and the mouse, drew the mouse disappearing in the snake’s mouth, and wrote, “The rat was walking in the snake territory and the snake seen him and eat him.” Both his parents are deceased, and his history includes attacking others as well as experiencing abuse. Subsequently, he was arrested, jailed for dealing drugs, and did not return to school.

The response of a student in the control group, suggests an angry reaction to aggression by a youth who repressed the desire to harm, drawing Figure 8b , titled, “ A snake came up to scare me but I turned Super Saiyen Ryan and ignored him, but I said Hi,” (Saiyen is hero in a popular television program). His scowling, muscular subject



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with fists clenched, but arms at his sides, head, arms, and legs in flames, seems to express intense, conflicting, but repressed reaction to aggression.

## Two Cross Cultural Studies

Russian investigators used the SDT to assess cognitive skills, and DAS to assess gender differences among Russian children and adults. They found strongly negative emotional content (1 point) three times more frequently among males, and strongly positive content (5 points) three times more frequently among females (Kopytin, Svistovskaya, and Svetskaya, 2005). They also compared delinquent and non-delinquent children and adolescents. All in the delinquent group, 21 boys and 6 girls ages 10 to 14, had demonstrated aggressiveness, and several had attempted suicide. The control group included 25 children and adolescents without social conduct disorder who also lived in an institution

**Results.** No significant cultural difference were detected in emotional content scores or in the proportions of children and adolescents who scored 1 point in both emotional content and self-image, suggesting that they were depressed. Surprisingly, however, *both* Russian groups had lower self-image scores, and the Russian delinquent group tended to be strongly negative, unlike their American counterparts. As might be expected, the control groups in both countries received higher, more positive scores in both emotional content and self-image. The Russian investigators illustrated their findings with several response drawings, and for each, there was an American counterpart, such as depicting the stimulus drawing snake catching the mouse..

In Thailand, Dhanachitsiriphong used the SDT to assess the effects of an art program on male adolescents in a detention facility, and divided the sample she selected into experimental and control groups (1999). The experimental group participated in art therapy and rational emotive therapy for 12 sessions during a period of three months while the control group continued regular activities.

**Results.** Following the program, the cognitive and emotional content scores of the experimental group were higher than the control group scores to a degree significant at the .01 level of probability in the eight categories under consideration. The categories included cognitive and emotional content scores before, during, and after the experiment.

The strongly negative responses of delinquent adolescents in Thailand seem no different from those of delinquent adolescents in the United States and Russia. To generalize, however, would require larger numbers, matched samples, and statistical analyses.

## Observations and Conclusions

The studies reviewed here seem to support the proposal that a stimulus-drawing assessment can be an effective first step in identifying students at risk for harming others and/or themselves. The findings suggest that responses scoring 1 point on both scales, or 1 point on the Emotional Content scale combined with 5 points on the Self-image scale, warrant prompt attention.

It may be that a second step, presenting the drawing task again another day to students who receive these scores, can clarify the need for follow-up, using the Form B

set of stimulus drawings if Form A was presented originally, reserving Form A for pre- and post-testing at the beginning and end of a program., and discussing responses with the students who drew them, in order to clarify intended and unintended meanings. A second response that scores 1 point on both scales is more likely to confirm the need for referral to a mental health professional for further evaluation. Responses that score 1 in emotional content combined with 5 in self-image, may reflect reactive aggression, and also confirm the need for further evaluation.

In the fourth and sixth studies, students who received these scores participated in art therapy programs provided in their schools, and positive changes emerged in their behaviors and scores (Silver, 2007). Although association is not causation, higher scores on the post-test suggest that the gains were consequences of the program rather than coincidental.

The findings also suggest an affirmative answer to the question raised at the beginning of this paper; do stimulus-drawings activate mirror neurons in the brains of respondents? The stimulus drawings seem to activate the empathy of children and adolescents who observe them, triggering emotions, associations with past experiences, and fantasies expressed in response drawings, which, in turn, provide clues to intentions, and activate the empathy of those who observe their drawings.

The finding that 8 of the 181 students in the control group of presumably non-depressed students drew suicidal fantasies, scoring 1 point on both scales, suggests that presenting the drawing task to all students in a class may identify those at risk for masked depression,

The findings also raise questions about the students who consistently drew predatory fantasies. What distinguishes aggressive fantasies from aggressive behavior? Why do some students who fantasize about harming others, behave aggressively while others do not? Are they bullies? Inhibited by inner controls, social mores, or fear of being caught? Normal? These questions suggest that follow-up and further investigation would be worthwhile.

The studies reviewed here were qualitative as well as quantitative, and I believe we need both. The crucial differences between reactive and predatory aggression that appeared in the responses of individuals and subgroups disappeared in groups large enough for statistical analysis. On the other hand, without empirical evidence, studies may be limited to subjective observations and conjecture.

## References

Dhanachitsiriphong, P. (1994). *The effects of art therapy and rational emotive therapy on cognition and emotional development of male adolescents in Barn Karuna Training School of the Central Observation and Protective Center*. Unpublished master's thesis, Burapha University, Chonburi, Thailand.

Earwood, Fedorko, Holzman, Montanari, & Silver, 2004. *Art Therapy, Journal of the American Art Therapy Association*, 21 (3), 115-161.

Freedberg, D. and Gallese, V., 2007. Motion, emotion, and empathy in esthetic experience. *Trends in Cognitive Sciences*, 11 (5), 197-203.

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Goodenough, F. & Harris, 1963. *Children's Drawings as measures of mental maturity*. NY.: Harcourt Brace and World.

Gallese, V., Keysers, C., and Rizzolatti, G., 2004. *TRENDS in Cognitive Science*, 8 (9). 396-403.

Kopytin, A., Svistovskaya, H., and Svetskaya, V., 2005. Cultural differences and similarities. In R. Silver, (Ed.), *Aggression and depression assessed through art*, (141-158). New York: Brunner-Routledge.

Kramer, E., 1971. *Art s Therapy with children*. N.Y.: Schocken Books

Ramchandran, V.S, & Hirstein, W., 1999. The science of art: A neurological theory of aesthetic experience. *Journal of Consciousness Studies*, 6 (6-7), 15-51.

Silver, 1983. *The Silver Drawing Test of Cognition ad Emotion*, Ablin Press, Sarasota, Florida.

Silver, R., 1988a. Screening children and adolescents for depression through Draw A Story, *America Journal of Art Therapy*, 26(4), 119-124.

Silver, R. 1988b. *Draw A Story, screening for Depression and Emotional Needs*. Mamaroneck, N.Y.: Ablin Press.

Silver, R., 1992. Gender differences in drawings,: A study of self-images, autonomous subjects, and relationships, *ARTherapy: Journal of the American Art Therapy Association*, 9(2) 85-92.

Silver, R. 1993. Age and gender differences expressed through drawings: a study of attitudes toward self and others. *ARTherapy: Journal of the American Art Therapy Association*, 10(3), 159-168.

Silver, R. and Ellison J, 1995. Identifying and assessing self-images in drawings by delinquent adolescents, *The Arts in Psychotherapy*, 22 (4), 339-332.

Silver, R. , 1996. Sex differences in the solitary and asaultive fantasies of delinquent and non-delinquent adolescents, *Adolescence*, 31 (123) 543-552.

Silver, R. (Ed.) 2005. *Aggression and Depression Assessed Through Art*, New York: Brunner-Routledge, N.Y. and U.K.

Silver, R. 2007. *The Silver Drawing Test and Draw A Story, Assessing Depression, Aggression, and Cognitive Skills*. New York Routledge/ Taylor & Francis, UK

Zeki, S. 1999. *Inner vision: An exploration of art and the brain*. Oxford: Oxford University Press.