

Working Together: Neuroscience-Based Support for Art Therapists and Clients to Co-Create

Amy M Granger

Submitted to the faculty of the University Graduate School
in partial fulfillment of the requirements for the degree
Master of Art in Art Therapy
in the Herron School of Art and Design
Indiana University

May 2014

Working Together: Neuroscience-Based Support for Art Therapists and Clients to Co-Create

By
Amy M Granger
Master of Art

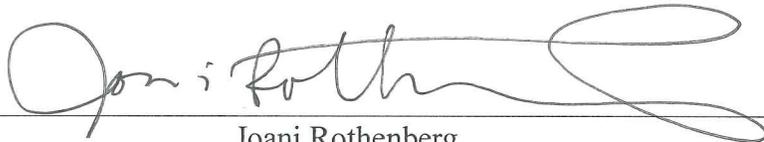
Herron School of Art and Design
IUPUI Indiana
University



Juliet King
Advisor



Eileen Misluk
Committee Member



Joani Rothenberg
Committee Member

Accepted: May 2014



Professor Valerie Eickmeier
Dean of Herron School of Art and Design

11 May 2014

ABSTRACT

How has recent research on mirror neurons and embodied simulation informed the way we understand the therapeutic relationship? Can this neuroscience research help art therapists gain more insight into the advantages and disadvantages of co-creating artwork with clients in session? Through a systematic review of literature, this paper explores the mirror neuron and embodied simulation research as well as three important elements of the therapeutic relationship in order to provide knowledge about how neuroscience can help art therapists understand what we do from a neurobiological perspective. The researcher provides an in-depth investigation of empathy, transference, and countertransference and their foundations in the related neuroscience. This investigation also offers information for art therapists in an effort to provide greater insight about the pros and cons of creating artwork with clients during art therapy sessions, and how these practices may be understood in a neuroscience context.

Keywords: art therapy, neuroscience, mirror neurons, embodied simulation, therapeutic relationship, empathy, transference, countertransference, co-create

DEDICATION

I dedicate this research to the first graduating class of the Herron School of Art and Design Art Therapy Program, Class of 2014. Linda Adeniyi, Uriah Graham, Katie Hearn, Amanda Krieger, Heidi Moffatt, Hillary Timmerman, Natalie Wallace, and Katy Wagner, you will all forever be my creative soul sisters.

And

To my husband Gabriel, you have been my whole-hearted support through this rigorous, academic journey. I am beyond grateful to have such a supportive life partner. You inspire me.

ACKNOWLEDGEMENTS

I would like to thank Joani Rothenberg for aiding me in my development as an art therapist in my internship site and helping me translate and integrate this information into my research; thank you for your probing questions and recommendations to help me develop my thoughts in the research process. I would also like to thank Michelle Itczak for her patience and helpful suggestions throughout the writing process. Many thanks to Eileen Misluk for all of her clinical wisdom and guidance in helping me to understand the role of the art therapist in the therapeutic environment. I offer my sincerest gratitude and appreciation to my mentor Juliet King for inspiring my interest in my thesis topic. Juliet pushed me to a level of scholastic achievement that I never saw for myself. For all of her guidance, support, wisdom, and patience throughout my research development, I am truly indebted.

TABLE OF CONTENTS

1.	INTRODUCTION	1
	Operational Definitions	4
2.	METHODOLOGY	6
3.	LITERATURE REVIEW	11
	Neuroscience	11
	Basic Brain Function	11
	Mirror Neuron System.....	12
	Embodied Simulation	14
	Client Therapist Relationship.....	16
	Transference and Countertransference	16
	Empathy.....	18
	Therapeutic Approaches.....	20
	Psychodynamic.....	20
	Interpersonal Relationships	21
	Humanistic.....	23
	Psycho-educational.....	23
	Art Therapy	24
	Art Therapy in a Neuroscience Context	25
	Neuroscience Supported Art Interventions	27
	Art Therapy and the Therapeutic Relationship	27
	Transference and Countertransference in Art Therapy	28
	Empathy in Art Therapy and Art Imagery	29
	Practices of Artistic Creation.....	32
	Actively Participate	32
	Strictly Observe	38
4.	RESULTS.....	41
	Co-creation Practices.....	42
	Simulative.....	43
	Collaborative	44
	Simultaneous	46
	Strict Observation.....	48
5.	DISCUSSION.....	50
	Limitations.....	50
	Clinical Implications	54
	Pedagogical Implications.....	57
	Implications for Future Research	58
6.	CONCLUSION AND RECOMMENDATIONS	60
	REFERENCES	61

CHAPTER I: INTRODUCTION

The purpose of this paper is to explore how recent research on mirror neurons and embodied simulation informs the way the therapeutic relationship is understood and to gain greater insight into whether or not it is beneficial for the art therapist to create art alongside clients during sessions. Through a review of the literature, mirror neuron and embodied simulation research will be discussed to provide art therapists with an increased knowledge of these neurobiological concepts and offer a better understanding of art therapists' role in a neuroscience context. In addition, several elements of the therapeutic relationship will be explored, as they relate to neuroscience. This thesis will also investigate the practice of creating artwork with clients, how this may activate neuronal responses, and whether or not co-creating art may be beneficial for clients on a neurobiological level.

In the mid 1990s, Rizzolatti, Fadiga, Gallese, and Fogassi (1996) discovered the existence of a unique set of neurons in the prefrontal cortex of monkeys' brains. They termed these neurons 'mirror neurons' because it was found that the neuronal pathways activated in primates when watching a goal-directed task being performed are the same pathways that are stimulated when the task is actually performed by the individual. According to Rochat et al. (2010), "Mirror neurons are a distinct class of neurons that discharge both during the execution of a motor act and during observation of the same or similar motor act performed by another individual" (p. 605). In other words, when a goal-oriented task is being executed, the same neurons are firing in the brain of the observer and the participant. Rizzolatti and colleagues described this as an "observation/execution matching system" (p. 132).

Closely related to the mirror neuron system is the concept of embodied simulation. As one of the original investigators of the mirror neuron system, Gallese (2009) helped define

embodied simulation and described it as an individual's internal processing associated in observation of others; embodied simulation facilitates our ability to identify and connect with others. When we are in the presence of another individual, we are unconsciously aware of idiosyncratic similarities because these parallels are literally embodied (Gallese, 2009).

Embodied simulation theorists hypothesized that “we make inferences about the mental states of another person by directly and automatically *perceiving* the other's state of mind through a subtle simulation of his or her actions, emotions, and goals in the ‘mirror neuron system’ in the brain” (Kerr, 2008, p. 205). While the mirror neuron system can be understood in terms of motor function, embodied simulation might be conceptualized in terms of thought processes, states of mind, and the emotional understanding of others. Embodied simulation and the mirror neuron system inform the ways that we understand, interact, and relate with other people. Having an increased knowledge of these neurobiological processes and their involvement within interpersonal relationships can have a meaningful impact on our understanding of the therapeutic relationship.

The therapeutic relationship refers to the interpersonal connection between therapist and client and can be conceptualized in several different ways depending on the therapeutic approach. Many theoretical therapy approaches (e.g., Adlerian, person-centered, Gestalt) view the client-therapist relationship as critical and at the core of the therapeutic healing process; other frameworks (e.g., cognitive-behavioral therapy) see the relationship as less emphasized but still important for the maximum therapeutic value (Corey, 2013). While there are multiple components that structure the therapeutic relationship, this thesis will focus on empathy, countertransference, and transference due to their observed neuroscience underpinnings. This paper will seek to show the connections between these elements of the therapeutic relationship,

mirror neurons, and embodied simulation as well as their observed presence within art therapy, specifically as it relates to the creation of art and the art therapist's role in this process.

Within the art therapy setting, Moon (2006) suggested that a tripartite relationship exists between the client, artwork, and art therapist, all of which are equal partners. While the artistic expression is a central element of the art therapy, there appear to be differing perspectives within the art therapy profession as to whether or not it is appropriate or beneficial to create artwork alongside clients within the therapeutic context. It has been speculated by some art therapists that when a client witnesses the therapist creating artwork in session, it activates mirror neuron pathways; in activating these mirror neuron pathways, the therapist may promote healing through increased understanding, empathy, and attunement. (Franklin, 2010; Buk, 2009; Belkofer, 2012). Although not found within this extensive search for resources, a common discussion point in art therapy education and the philosophy of the profession is whether or not engaging in the creative process alongside clients in session might take away from the therapist's ability to be present. This thesis will investigate positive and negative aspects of creating art alongside clients as evidenced by art therapist testimony and supported by mirror neuron observations.

Operational Definitions

Mirror neurons: the neurons that fire in the frontal cortex of the brain during participation and observation of a goal-oriented task; when a goal-oriented task is being executed, the same neurons are firing in the brain of the observer and the participant (Rizzolatti, Fadiga, Gallese, and Fogassi, 1996).

Embodied simulation: the intuitive and unconscious feelings associated during observation and activation of the mirror neuron system (Gallese, 2009).

Client therapist relationship: the connection that exists between the mental health professional and client. Within the therapeutic relationship, main functions of the therapist are creating a safe holding environment, building an empathic and trusting relationship, and offering an emotional container for the client.

Transference: the client's unconscious projection of his/her feelings onto the therapist. Also conceptualized as "the symbolic ways in which the patient perceives and responds to the therapist" (Rubin, 2001b, p.17).

Countertransference: the therapist's unconscious, nonverbal responses to the client. Also conceptualized as "the symbolic ways in which the therapist perceives and responds to the patient" (Rubin, 2001b, p.17).

Empathy: the process by which the therapist "mirrors" and offers emotional responsiveness to the client (Robbins, 2001, p. 59).

Art therapy: "a mental health profession that uses the creative process of art making to improve and enhance the physical, mental and emotional well-being of individuals of all ages." (American Art Therapy Association, 2013)

Co-create: any practice in which the art therapist is actively engaged in the art making process along with the client in session, with the exception of instructional art making for educational purposes. Co-creating may emerge as a an art therapist creating art to stimulate the client's artistic process, a collaborative artwork between client and therapist, or an art therapist and client creating individual artwork simultaneously.

CHAPTER II: METHODOLOGY

Whittemore and Knafl (2005) identified integrative research reviews as presenting the science, contributing to development of theoretical material, and containing “direct applicability to practice” (p. 546). This research “presented the science” by providing a detailed overview of mirror neuron and embodied simulation research. The researcher integrated this neuroscience research with theoretical therapeutic approaches. The core elements of the therapeutic relationship, such as the therapist’s empathic response and instances of transference and countertransference, were explored in this theory. The “direct applicability to practice” was conceptualized through a thorough discussion of the practice of co-creation with art therapy clients, which included advantages as well as disadvantages. This study was conducted through critical analysis of the existing literature, and therefore, no human participants were studied in this research.

The search strategy for this literature review consisted of a search of several databases within EBSCO Host. Most articles were obtained through PsycInfo, however, Art Full Text (H.W. Wilson), ProQuest, MEDLINE, and PubMed also revealed some pertinent articles as well. A complete list of research databases can be viewed in Table 1. Initially, the search was largely limited to resources that met the status of ‘peer-reviewed’ and the results were refined with this phrase almost exclusively. However, when search results appeared too narrowly defined, this limiting phrase was removed in order to broaden the search. This yielded other relevant resources, such as book chapters. The university library search system, IUCAT, was also used to identify relevant books.

Table 1

*Databases Utilized in Research*Alphabetical Listing of Databases

Academic Search Premier	MEDLINE
Art Full Text (H.W. Wilson)	ProQuest
ERIC	ProQuest Dissertations & Theses A&I
Google Scholar	PsycINFO
IUCAT	PubMed

Many articles revealed additional useful sources within the references, which were then systematically reviewed and evaluated for relevance to the research question and purpose of the thesis. In addition to looking at specific references of the articles, common authors were then searched according to author name and applicable keywords. Because of the nature of this research—as being rooted within the increasingly expanding field of neuroscience—the original searches were conducted multiple times throughout the year in order to obtain the most up to date and relevant resources. In fact, nearly three quarters of the resources obtained were published since 2000.

Table 2

Publication Dates of Resources

Publication Date	Number	Percentage
2010-2014	23	30.3%
2000-2009	32	42.1%
1990-1999	7	9.2%
Prior to 1990	13	17.1%
Undated	1	1.3%
Total	76	100%

The research question was deconstructed into three overarching themes and several subtopics, and the reference search was conducted accordingly. The themes were neuroscience, the client therapist relationship, and art therapy. The themes also determined the organization of the thesis. Key words that were used within the search were art therapy, therapy, mirror neurons, neuroscience, cognitive, cortical, drawing, brain, empathy, client therapist relationship, therapeutic relationship, countertransference, transference, co-create, alongside, and create alongside. The word trauma was evaluated as a key term in several pertinent articles, and was therefore used on a limited basis in order to reduce and narrow the results. Table 3 provides an overview of the search terms used.

Table 3

Search Terms and Phrases

Neuroscience	Client Therapist Relationship	Art Therapy
Neuroscience	Therapy	Art therapy
Cortical	Therapeutic relationship	Drawing
Cognitive	Client therapist	Co-create
Mirror neurons	relationship	Alongside
Brain	Countertransference	Create alongside
Embodied simulation	Transference	Responsive art making
Trauma	Empathy	

Key search words were usually broken down into their core words and then substituted with an asterisk in order to provide all uses of the words. For example, empathy was used as empath* in order to find all derivatives of the root word, such as empathy, empathic, empathetic, empathize, and empathies. Quotation marks were also used in order to provide more narrow or broader search depending on the number of results. For example, quoted words such as “art* therap*” were used in order to eliminate irrelevant sources that may contain the words art or therapy, but may not pertain to therapeutic approaches that use artistic methods.

The method for selecting articles found within the searches was initially conducted through a primary survey of the article titles. Key search terms were evaluated in order to assess if the manner in which they were used was appropriate for these research purposes. If a title was thought to be relevant, the journal title and subjects found on the initial search results page were assessed. Pertinent articles were also evaluated further by category: journal articles, editorials,

and book reviews. Editorials were not used, nor were book reviews. However, the titles of relevant books were recorded and further evaluated for appropriateness of the research question in order to determine if the original book should be included in the literature review.

The data was assessed for common themes and keywords, which were evaluated in the research. The guiding paradigm was interpretivist. Gough, Thomas, and Oliver (2012) discussed the concept of the ‘critical interpretive analysis,’ in which meaning is interpreted and synthesized from the included referenced studies, and theory is then constructed from conceptual literature. The aim was to understand the relationship between mirror neurons, embodied simulation, and the components of the therapeutic relationship. This included understanding the therapist’s role through the neuroscience framework, as well as understanding additional elements of the therapeutic relationship within art therapy. How the therapeutic relationship is conceptualized within the context of neuroscience, and identifying the possible advantages and disadvantages of the art therapist’s role as a strict observer or an active participant in client’s artistic process were also examined. Since most of the resources were qualitative, they were assessed through an evaluation of credibility, transferability, dependability, confirmability, and authenticity (Mertens, 2010).

CHAPTER III: LITERATURE REVIEW

Neuroscience

Neuroscience is defined in medical terms as “a branch (as neurophysiology) of science that deals with the anatomy, physiology, biochemistry, or molecular biology of nerves and nervous tissue and especially their relation to behavior and learning” (Merriam-Webster, n.d.). Neuroscientists are specialists that explore the nervous system and brain with the aim to interpret the brain’s intricate and varied function (Society for Neuroscience, 2013). Neuroscience is concerned with the brain’s impact on cognitive and behavioral function as well as normal and abnormal neuropathology (Nordqvist, 2012).

Basic Brain Function

The brain is an incredibly diverse and complex organ. In fact, this spongy mass, which weighs only three pounds, is the most multifaceted living substructure in the known universe (Society for Neuroscience, 2013). The Society for Neuroscience (2013) stated:

Scientists still have not uncovered the full extent of what the brain can do. This single organ controls every aspect of the body, ranging from heart rate and appetite to emotion and memory. The brain controls the immune system’s response to disease and determines, in part, how well people respond to medical treatments. It shapes our thoughts, beliefs, hopes, dreams, and imaginations. It is the brain’s ability to perform all these functions that makes us human. (para. 2)

Because of the human brain’s vast complexity and multiple functional areas, only certain portions of brain function will be discussed here in order to stay within the limitations of this research study.

The brain is divided into two hemispheres, the right and left, and four lobes: the frontal lobe, temporal lobe, parietal lobe, and occipital lobe. Generally speaking, visual spatial skills are more closely related to right hemisphere brain function, while logical and verbal processes are associated with left-brain activity. “The right hemisphere is better than the left in the expression of emotions and in the recognition of emotions in facial expressions. Emotions are predominantly processed in the right hemisphere, especially negative emotions such as sadness and fear” (Lusebrink, 2004, p. 128). Information is processed in a more organized, sequential, and linear manner in the left hemisphere (Hinz, 2009). At birth, only the right hemisphere of the brain is fully functional, and is the dominant hemisphere until around age two; “infants develop patterns of emotional communication prior to developing left-hemisphere-based verbal skills when that hemisphere becomes fully functional around the 3rd year” (Divino & Moore, 2010, p. 339).

Mirror Neuron System

In the mid 1990s, Rizzolatti, Fadiga, Gallese, and Fogassi discovered the existence of the unique set of neurons in the prefrontal cortex of macaque monkeys. Through an experimental surgical procedure, Rizzolatti et al. (1996) were able to record and analyze the neuronal activity of two unanesthetized monkeys during goal-oriented tasks. In the experiment, the monkeys observed humans as well as other monkeys engaging in purposeful hand movements, such as grasping, holding, or working with objects. The recordings indicated that the firing neurons of the examined monkeys activated both during execution and observation of the task. Because of the attributed ‘mirroring’ function, these neurons were termed mirror neurons.

While there are fewer direct studies of the mirror neurons’ existence in the human brain, there is an abundant amount of indirect data, such as neurophysiologic and brain-imaging

studies, that substantiate the existence of mirror neurons within humans (Rizzolatti & Craighero, 2004). During neurophysiological experiments, in which individuals observed action executed by another individual, the observing person's motor cortex becomes activated (Rizzolatti & Craighero, 2004). Rizzolatti and Craighero (2004) cited several studies in which neurophysiological findings were retained through a variety of different methods, including electroencephalograph (EEG) data (Cochin et al., 1998, 1999; Altschuler et al., 1997, 2000), magnetoencephalographic (MEG) technique (Hari et al., 1998), and transcranial magnetic stimulation (TMS) studies (Fadiga, Fogassi, Pavesi, & Rizzolatti, 1995; Gangitano, Mottaghy, & Pascual-Leone, 2001). Iacoboni (2007) noted that premotor mirror neuron areas of the brain were actively stimulated in the human observer and participant when measured through functional magnetic resonance imaging (fMRI).

Rizzolatti et al. (1996) suggested that the area of the monkey brain in which mirror neurons were discovered may parallel the human brain region known as Broca's area. Broca's area is associated with speech production. It appears that even a part of the human brain, such as Broca's area, which was previously thought to be unique to our species has been found to share a similar functional mechanism with another species; "Broca's region appears to be not only involved in speech control, but also, similarly to monkey's [prefrontal cortex], in a prelinguistic analysis of others' behavior" (Gallese, 2003, p. 174). McNeilage (n.d.) theorized that speech did not evolve from primate vocal calls, but through the use of communicative gestures, which suggests a visual origin for this communicative modality (as cited by Rizzolatti et al., 1996). In combination with their data and McNeilage's theory, Rizzolatti and colleagues (1996) suggested that the "functional specialization of human Broca's area derives from an ancient mechanism related to production and understanding of motor acts" (p. 139). It can be concluded that the

human species learned how to relate through image and gesture before we learned how to understand through words and verbal language. “Mirror neurons support the notion of an innate pre-linguistic responsiveness to others that also may prefigure social interaction in dyadic and group situations” (Schermer, 2010, p. 492). More importantly, the area of our brain responsible for this primitive action understanding is the same area that allows for the more complex functioning of linguistic comprehension.

The mirror neuron system (MNS) not only mediates behavioral imitation, but it is theorized that the MNS also plays a role in action understanding (Rizzolatti et al., 1996; Rizzolatti & Craighero, 2004). “Neurons activated in personal understanding are also activated in seeking to understand the experience of others” (Gibbons, 2001, p. 247). Gallese, Eagle, and Migone (2007) identified the mirror neuron system as responsible for “reading” other’s intentions, emotions, sensorial output, and verbal and nonverbal prompts. Iacoboni (2007) also cited studies in which mirror neurons areas were discharged at the sound associated with an action (e.g., breaking a peanut). The term mirror neuron does not imply “mirroring” in a conventional sense, but rather, indicates a congruent, complementary, or attuned emotional expression that is seen in the observer’s behavior (Gallese, Eagle, and Migone, 2007). “If we want to survive, we must understand the actions of others,” because “without action understanding, social organization is impossible” (Rizzolatti & Craighero, 2004, p. 169).

Embodied Simulation

While the science of the mirror neuron system can help us to understand our behavior and motor function, the closely-related concept of embodied simulation (ES) can inform our comprehension of our perceptions, feelings, and emotions. Just as the root word describes, the term embodied describes the body, as well as its uses, parts, actions, and representations (Gallese

& Sinigaglia, 2011). The notion of embodiment falls into a special category due to the fact that the body is the only “object” that can be felt from the inside as well as the outside (Koch & Fuchs, 2011).

Gallese (2009) conceptualized embodied simulation as our internal states associated in observation, specifically while observing other people. He stated that embodied simulation aids us in the ability to connect to others through our hard-wired sensory-motor system, in which we sense the meaning of actions, emotions, feelings, and even the intentions of others. When other individual’s behaviors are observed, the mirror neuron system becomes engaged in processing the observations; how we understand and perceive these actions—their meanings, intentions, and outcomes—and how we feel internally is part of embodied simulation.

What is distinctive about ... ES is that people reuse their own mental states or processes in functionally attributing them to others, where the extent and reliability of such reuse and functional attribution depend on the simulator’s bodily resources and their being shared with the target’s bodily resources. (Gallese & Sinigaglia, 2011, p. 518)

How we perceive others is based on how we perceive ourselves. We comprehend the actions and emotions of others based on our own experiences with similar stimuli. However, the accuracy in understanding of others depends on the shared resources between the individual and simulator.

Gallese (2009) asserted that “personal identity is—at least partly—the outcome of how our embodied simulation of others develops and takes shape” (p. 531). Csibra (2007) noted that the intersubjective knowledge of another is not cognitive, but rather is perceptual (as cited by Kerr, 2008). Another way to conceptualize this may be to conclude that individuals do not process the intersubjective information of others on an intellectual level, but rather, it is

processed unconsciously and intuitively—we feel how we feel. Kerr detailed how embodied simulation theorists assert that we perceive the internal state of others by internally experiencing it through our own sensory systems' simulation of the other person's actions and perceived emotions. Gallese and Sinigaglia (2011) suggested that embodied simulation theory “provides us with a primary way of making sense of others that is particularly reliable at a basic level” (p. 516). Gallese (2009) suggested that embodied simulation is employed in psychoanalysis within the client-therapist relationship.

Client Therapist Relationship

The client therapist relationship is the connection that exists between the mental health therapist and client. The most important element that therapists can bring to any therapeutic relationship is their own personhood (Ellingson, 1991). Main functions of the therapist include creating a safe holding environment, building an empathic and trusting relationship, and offering an emotional container for the client. “It is within the therapeutic relationship that the therapy begins, develops, matures, and ends. To speak of therapy without taking into account the relationship between therapist and client is to ignore one of its most basic ingredients” (Wadeson, 2010, p. 33). There are several components that contribute to the stability of the therapeutic relationship, such as genuineness, empathy, active listening, consistency, reliability, and instances of transference and countertransference, to name a few. However, only empathy, transference, and countertransference will be emphasized and further explored in this research due to the found neuroscience underpinnings.

Transference and Countertransference

In psychotherapy, the client-therapist relationship needs to be carefully considered in regards to instances of transference as well as countertransference. Transference is the client's

unconscious projection of his/her feelings onto the therapist; countertransference is the therapist's unconscious, nonverbal responses to the client. From a psychoanalytic perspective, transference involves feelings of past encounters repeated in present day. Corey (2013) defined transference as "the client's unconscious shifting to the analyst of feelings and fantasies that are reactions to significant others in the client's past" (p. 75). Countertransference is understood as the therapist's reaction to the client's transference as well as the client's personality. It is extremely important that therapists recognize their own countertransference so as to not interfere with objectivity (Corey, 2013). Gallese (2009) stated that projective identification and instances of transference and countertransference are evidence of "implicit and pre-linguistic mechanisms of the embodied simulation-driven mirroring mechanisms" (p. 531). Vivona (2009) helps to articulate the concepts explored by Gallese, Eagle, and Migone (2007) in stating that the therapist's "countertransference contains a version of the patient's internal experience, which is the product of the mirror neuron system's automatic simulation of the other's brain" (p. 530).

Since therapists are engaging in trying to understand the intersubjective state of another person, it is critical that self-regulation processes are in place in order to maintain personal objectivity while trying to relate to the client in an empathic manner (Arizmendi, 2011). Robbins and Jolkovski (1987) conceptualized countertransference from multiple definitions and discussed the difference between countertransference behaviors and countertransference feelings. They stated that while countertransference feelings might help with gaining an understanding of the client, countertransference behaviors might have undesirable results. Countertransference feelings are intuitive and unconscious, so they can be understood as relating to the concept of embodied simulation. Countertransference behaviors are more closely related to the motor function properties of the mirror neuron system. Mirror neurons work in a reciprocal fashion;

through the nonverbal actions of the therapist, the client's mirror neuron system is activated, however, the client also activates the therapist's mirror neuron system (Gallese, Eagle, & Migone, 2007). Because therapists are trained to recognize transference and countertransference, it is theorized that therapists' awareness provides them with some defense and control over this neurobiological response.

Empathy

An important component of the therapeutic relationship is the therapist's ability to empathize with the client. Empathy is the therapist's attempt to gain a sense of the client's personal, subjective experience; it is the effort of the therapist to put him/herself into the client's shoes and appreciate the client's perspective. Robbins (2001) conceptualized empathy as the process by which the therapist "mirrors" and offers emotional responsiveness to the client.

"Empathy is an active ingredient of change that facilitates clients' cognitive processes and emotional self-regulation" (Corey, 2013, p. 184). When Robbins and Jolkovski (1987) discussed how countertransference feelings might help the therapist to gain an understanding of the client, they were likely talking about empathy.

Psychologist Edward Titchner (1909) originally coined the English term empathy from the German psychologist Lipps' concept of *Einfühlung*, which means feeling into. Lipps originally conceived of the concept of *Einfühlung* as a way to understand our internal processes in experiencing aesthetic encounters (Stueber, 2013). The central highlight of Lipps' theory is "not merely on our understanding the other's movements and emotion through imitation, but on actually experiencing that emotion as if it were our own and directly evoked in us" (Krietler & Krietler, 1972, p. 268). Empathy was a model to conceptualize how we view art, how art then becomes a part of us, and how we can better understand each other.

The precursors to empathy include emotional synchrony, physiological synchrony, and an automatic mimicry response (Arizmendi, 2011). Arizmendi also explored the concept of emotional contagion, which is “catching” another’s emotional output, as well as mimicry, which is understood as the feedback from the emotional contagion. He asserted that social variables, such as the degree of psychological closeness between two people, have high correlations with the likelihood and degree of the mimicry. The capacity for mimicry is inherent at birth, and is implicated through many nonverbal cues such as posture, facial expressions, voice quality, and movements. Gallese (2009) described how embodied simulation *is* our ability to understand others and is therefore a critical “functional mechanism for empathy” (p. 524).

In conducting a review of literature about empathy, Gibbons (2011) noted that the current ‘embodied empathy’ research, which is informed by developmental and neuroscience studies, revealed that the “empathic process is largely visceral, or embodied” (p. 249). She discussed that the universal capacity for subjectively understanding and communicating with other people is linked to the mirror neurons located within the experience-processing parts of the brain. Empathy can be conceptualized as existing on a continuum which holds conscious intersubjective experiences on one end, and unconscious intersubjective states at the other (Ginot, 2009).

Understanding empathy can be likened to how we understand the arts. Gibbons (2011) stated, “Understanding empathy as a complex construct is perhaps more like how a musician understands music—as a whole-bodied process to be increasingly mastered, through dedicated training and practice” (p. 250). This metaphor can easily be translated to the world of the visual arts, and likewise to the therapeutic context of art therapy.

Therapeutic Approaches

Different therapeutic models conceptualize the therapeutic relationship in different ways. Many theoretical therapy approaches view the client therapist relationship as critical and at the core of the therapeutic healing process; other frameworks see the relationship as less emphasized but still important for the maximum therapeutic value (Corey, 2013). For example, Corey suggested that Adlerian, existential, person-centered, Gestalt, and post-modern therapy approaches hold the therapeutic relationship as “*the crucial determinant of treatment outcomes*” (p. 480). In contrast, he identified that modalities such as rational emotive behavior therapy, behavioral therapy, and cognitive behavioral therapy place more emphasis on technique over development of the therapeutic relationship. Psychodynamic approaches also focus heavily on the relationship between therapist and client (Rubin, 2001a).

Psychodynamic approaches. In the late 19th century, Freud (1910) developed psychoanalysis. Psychoanalysis is the basis on which most therapeutic frameworks have their origins. In psychoanalysis, the therapist will practice a blank-screen approach, in which clients are able to fully project their unconscious feelings onto the therapist. Freud (1938/1995) described this occurrence of clients projecting feelings onto the therapist as transference; he stated that it is neither provoked nor wanted by the therapist, but simply a part of the psychoanalytic process. The therapist will reveal very little about him/herself in order to let the client fully engage in this transference relationship. Freud also conceptualized the idea of countertransference, in which the therapist reacts and possibly projects onto the client.

Heinz Kohut, former president of the American Psychoanalytic Association, suggested introspection and empathy as key observational tools in psychoanalysis (Lachman-Chapin, 2001). Empathy can be conceptualized as vicarious introspection; a person can understand

another person by acknowledging his/her own repeated or reflected feelings (Lachman-Chapin, 2001).

Transference is understood as an unconscious repetition of past feelings in the present; the process of psychodynamic psychotherapy focuses largely on the resolution of this “unfinished business” of past relationships (Corey, 2013). Divino and Moore (2010) offered a neurobiological definition of transference; they suggested that because a majority of interpersonal interactions follow previously encoded patterns, “transference is, in part, a manifestation of procedural memory” (p. 344). In other words, once a person knows how to do something (e.g., relate to other people), he/she will continue in the same pattern if never challenged to change. Understanding the origins of an individual’s ability to empathize can also help to clarify its importance within the therapeutic relationship. To better comprehend these complex dynamics of the transference relationship and empathic development, it is helpful to have a general understanding of the development of interpersonal relationships, including object relations and attachment theory.

Understanding the development of interpersonal relationships. Object relations theory was developed by several psychoanalytic theorists in order to conceptualize how interpersonal relationships affect the ways in which we internalize our experiences (Corey, 2013). The word *object* actually refers to anything that is *other*: person or thing. Winnicott (1953) developed the concept of the good-enough mother and the transitional object, which provided explanation of how interpersonal relationships develop from being one with the mother during infancy to gaining independence and autonomy. The therapeutic environment offers a transitional space for these relationships patterns to manifest.

Bowlby and Ainsworth studied the early relational experiences of infants, which laid the groundwork for the development of attachment theory (Bretherton, 1992). Bowlby and Ainsworth's work explained that infants' first experiences with an attachment figure will guide their understanding of how to relate to other individuals throughout their lifetime. Siegel (2001) later expanded on this model to conceptualize how adult interpersonal interactions are mimicked from early experiences and infant attachment relationships into adult attachment relationships. Insecure attachment relationships can cause difficulty with interpersonal relationships throughout lifetime. Attachment theory has obvious implications for understanding the dynamics of transference and countertransference within the therapeutic relationship (Divino & Moore, 2010).

Early relational experiences, as understood through object relations theory and attachment theory, can also help the therapist understand a client's development and capacity for empathy. Mirror neuron research provides evidence that supports the notion that humans are hard-wired to be inherently relational (Schermer, 2010). Research has shown that infants are capable of mimicking facial movements and expressions of their caregivers, which suggests that from birth, we have the capacity for "imitation and affective attunement," or empathy (Gallese, 2009, p. 528). "Implicit memories, particularly those that have been created by poor attachment or trauma and remain dissociated, change our perceptual frame of reference so that we may not be clearly able to resonate with another person" (Badenoch & Cox, 2010). In other words, difficulty with attachment relationships can cause difficulty with a person's ability to empathize with others. Because empathy is such an important part of genuine interpersonal relationships, it is not only beneficial for the therapist to understand the development of empathy from his/her own perspective, but also how the client can empathize with others outside the therapy session.

The ability to empathize is developed not only through witnessing behaviors, but also perceiving attitudes and nonverbal cues.

Humanistic approaches. Humanistic approaches focus on a more egalitarian client therapist relationship, in which the therapist will practice appropriate self-disclosure. Humanistic approaches do not all derive from a common theoretical framework as do many of the psychodynamic approaches, but they do have a shared “optimistic view of human nature and of the human condition, seeing people in a process of growth and development, with the capacity to take responsibility for their fate” (Rubin, 2001a, p. 119).

Adlerian, existential, person-centered, Gestalt, phenomenological, and post-modern therapy are all considered humanistic therapy models (Corey, 2013; Rubin, 2001a). While instances of transference and countertransference are still recognized within the humanistic approaches, these models focus more on other therapeutic components, such as creating an empathic environment for the client.

Psycho-educational approaches. Rubin (2001a) identified several therapy approaches that “share an emphasis of learning, and actively design the therapeutic situation to facilitate the client’s acquisition of a new skill or behavior” (p. 193). She classified these frameworks into the category of psycho-educational. These models focus more heavily on therapeutic techniques with less emphasis on the therapeutic relationship, though it is still recognized that the quality of the relationship is still beneficial for optimal therapeutic benefit. Rational emotive behavior therapy, behavioral therapy, and cognitive behavioral therapy (CBT) are a few modalities that can be considered psycho-educational.

Vygotsky (1934/1987), who emphasized social learning, guided participation, and scaffolding, had the belief that every facet of an individual’s cognitive development was

embedded in a social context (as cited by Berger, 2010). Children learn how to navigate their environment, especially their social interactions, by observing others. This process occurs both consciously and unconsciously. Many of the cognitive, psycho-educational therapies are based on Bandura's (1977) social learning theory. Rosal (2001) indicated that the technique of modeling used in CBT is borrowed from social learning theory. Having the knowledge of the mirror neuron system provides definitive reasoning as to why this process is so effective. According to mirror neuron research, we neurobiologically learn how to perform a task simply by witnessing the task. Before we actually attempt it for the first time, the neurons have already fired, creating an already laid path for the neurons to re-fire during the actual execution. "Once a pathway has been forged, it increases the likelihood that other interactions will follow the same pattern" (Divino & Moore, 2010, p. 343).

Art Therapy

"Art therapy focuses predominantly on visual and somatosensory information; that is, how images and their expression reflect emotional experiences and how the emotional experiences affect thoughts and behavior" (Lusebrink, 2004, p. 129). Applicable to the scope of this study are the origins of how the field of art therapy evolved into being. Art therapy has its roots in the psychiatric movement led by Freud and Jung, both of whom noted particular importance on our capacity for symbolic thought process (Wadeson, 2010).

Margaret Naumburg (1987) developed art psychotherapy in the 1940's; art psychotherapy has its origins in psychoanalysis, in which Freudian processes are utilized, and its main concern is the spontaneous process of the art-making and the symbolic communication inherent therein. Art Psychotherapy employs the Freudian techniques of uncovering the unconscious through symbolism, free association, and nonverbal communication (Naumburg, 1987). This method

employs not only the release of the unconscious thought processes but also the analysis and interpretation thereof.

Also in the 1940s, Edith Kramer developed Art as Therapy, which focuses on Freudian principles rather than processes (Ulman, 2001). This framework employs the use of symbolic representations within artworks, but the meaning of such symbols may or may not be discussed verbally between the therapist and client. Art as Therapy largely focuses on the process of art-making in order to achieve sublimation for the client; sublimation is the process by which negative energy is transformed into something positive (Kramer, 2001). The creativity, or the artistic process and product, is the expression of this transformative process. The adage coined was “good product = good person,” meaning the individual was able to successfully release negative energy in a positive form—the art. This transformative process of negative into positive is known as sublimation and is a critical component of art therapy practice. The therapist may also take part in the art-making process alongside the client to encourage the development of the therapeutic relationship and help the client create a product that is useful and valuable to him/her (Kramer, 1986).

Regardless of the theoretical approach of the art therapist, a main goal for an art therapy client is to increase or reestablish a higher level of functioning and personal well-being through the “life-affirming pleasures of art making” (American Art Therapy Association, 2013). “Art therapy can help balance functioning of an individual who tends to over- or underuses one type of information in processing and decision making” (Hinz, 2009, p. 36).

Art Therapy From a Neuroscience Perspective

Art therapy is a brain-based treatment. Neurobiologist Zeki (1999) stated, “The brain...is...an active participant in generating the visual image, according to its own rules and

programs” (as cited by Lusebrink, 2004, p.125). Belkofer & Knopka, (2008) suggested that art making may stimulate the temporal lobes and therefore may extract latent memories, emotions, and sensations. In examining EEG patterns between artists and non-artists, Bhattacharya and Petsche (2005), found strong evidence that supports greater bilateral stimulation for artists. The study also suggested the perceptual value of visual art (i.e., viewing art and creating art); “this suggests a considerable although not complete correspondence between the underlying neural mechanisms associated with creative imagery and with the perception of related stimuli” (Bhattacharya & Petsche, 2005, p.12). Much of the available art therapy research that examines its connections to neuroscience is based in understanding trauma. Tinnin (1990) noted that a restoration to normal functioning of the left brain/right brain connection is necessary for a full recovery from emotional distress associated with experiencing traumatic events (as cited by Gantt & Tinnin, 2009). Early relational difficulties, particularly traumatic events and traumatic relationships, cause a disruption in the integration of left- and right-brain connections (Divino & Moore, 2010), and this can predispose an individual who experiences future life challenges and trauma to a disruption of left-and right-brain communication as well. Schore (2003) also noted that certain traumatic events, at any stage of life, could cause disruptions with integration of implicit and explicit memory. The creative process bilaterally stimulates the brain, which improves cognitive function, activates neural responsiveness, and taps into the unconscious, or implicit memory. Because art therapy stimulates the right side of the brain and is a nonverbal treatment, it is often particularly effective in treating individuals who have experienced emotional distress. Emotional responsiveness is also more closely aligned with right hemispheric functioning and is often difficult to articulate verbally. Gantt and Tinnin (2009) argued that when treating a nonverbal problem (i.e., bodily-held trauma), “a nonverbal resolution

is in order” (p. 151). Understanding the mirror neuron system offers a greater understanding as to why the nonverbal context of art therapy is effective.

Neuroscience-supported art interventions. McNamee (2006) suggested and implemented a bilateral art intervention, in which both the right and left hemispheres of the brain are purposefully stimulated in addition to several sensory systems. Högberg, Nardo, Hälström, and Pagani (2011) proposed working in the psychotherapy setting to stimulate both hemispheres of the brain in order to “activate both negative and positive affects associated with lateralization” (p. 92). Lateralization can be understood as the localization of a particular function to one side of the brain. Similar to the proposal of Högberg and colleagues, McNamee described her intervention in which both “positive and negative thoughts associated with the element of experience are associated with left and right hands for responsive drawings and tactile explorations by opposing hands”(p. 7). She stated that the goal of the bilateral art intervention is to strengthen the client’s positive thought process through integration of both positive and negative thoughts. In seven of eight observed individual cases in McNamee’s study in which the bilateral art intervention was used, “behaviors following the intervention were more congruent with the positive elements than with the distorted negative beliefs holding their behaviors hostage prior to the intervention” (p.13). She suggested that bilateral art may serve to integrate a client’s cognitive and emotional thought processes.

Art Therapy and the Therapeutic Relationship

The creative process and art products in art therapy create additional dynamics within the client therapist relationship. Within the art therapy setting, Moon (2006) suggested that a tripartite relationship exists between the client, artwork, and art therapist, all of which are equal partners. Art therapy has the ability to provide clients and therapists with a unique opportunity

to share intimate moments, which helps clients to experience a sense of consistent attachment, promotes emotional resonance, and offers a safe opportunity for the expression of their life story (Hass-Cohen, 2008). “Art therapists need to concurrently learn to attend to art, listen sensitively, and respond empathetically while knowing how to engage fully with materials. The therapeutic skills need to be grounded in an immersion in the art environment” (Allen, 1992, p. 24)

Transference and Countertransference in Art Therapy. In the art therapy setting, transference is not only expressed through verbalizations and body language, but also visually, in the artistic creations (Naumburg, 1987). Creating artwork gives form to feelings. The art encapsulates essences of past relationships and also provides shape and meaning to the relationships through the nonverbal, visual imagery (Robbins, 2001). Knowing this, it can also be asserted that the therapist’s countertransference to the client may also become apparent within the therapist’s artwork during co-creation. In relation to transference and countertransference issues while co-creating artwork with clients, Franklin (2010) warned:

The therapist must check transference and countertransference reactions and sort out related and unrelated personal identifications with the art and other expressions presented. Given the likelihood that the therapist's mirror neuron system has been activated, somatic cues can be used as sources of information to monitor. (p. 164)

Art therapists must be self-aware and highly attuned to their personal motivations when it comes to working alongside clients; this practice must be in service of the client, and the art therapist’s imagery must not be motivated by countertransference feelings (Haeseler, 1989).

Lachman-Chapin (1983) suggested that because spontaneous art products come from the unconscious process, there are obvious dangers in creating alongside clients during art therapy sessions. However, she also described a case study in which she was able to use the

transferential and countertransferential material that surfaced in the artwork to help the client work through some of the underlying issues he had with his mother, which was affecting his relationships with women and his wife. Lachman-Chapin noted that she paid particular attention to when she was needed to co-create with her client, as a supportive factor, and when it was not necessary. In an article explaining transference and countertransference as manifested in graphic productions, Levick (1975) describes how she treated a young adult client. She described several months of treatment, detailing several pertinent sessions, some of which she elected to draw with him. Through investigating not only his transference to her, but also her countertransference to her client, Levick attested that she was able to deal with her client's fear of closeness and separation. Through her own spontaneous drawings during session, she was able to communicate "therapeutic distance and support more quickly than any verbal expressions" (Levick, 1975, p. 215).

Empathy in Art Therapy and Art Imagery. Because the original German concept of *Einfühlung*—the precursor to what we now call empathy—was described as a way to process the aesthetic experience, it is easy to relate empathy to viewing and creating works of art. Freedberg and Gallese (2012) examined the neural mechanisms involved in empathy while processing an aesthetic experience. They suggested that in viewing visual art, the spectator becomes engaged in empathic understanding. An "inward imitation of the observed actions of other in pictures and sculptures" (p. 197) was proposed. The standard dictionary definition of empathy still references art and even a mirroring mechanism: "by means of empathy, a great painting becomes a mirror of the self" (Random House, 1987, p. 638). Freedberg and Gallese also offered the concept that mirror neurons enable an individual to understand the action of another through embodied simulation, even when there is only an implication of a completed action.

When the MNS is activated, the observation of an action – in particular, a goal-oriented action – leads to the activation of the same neural networks that are active during its execution. This in itself suggests a possible account for the frequent feelings of empathetic involvement with movements in works of art. (Freedberg and Gallese, 2012, p. 200)

Studies by Fogasi, Iacobani, and colleagues discussed that not only do mirror neurons facilitate understanding, but also they are “involved in understanding the intentions that underlie action” (as cited by Freedberg and Gallese, p. 200). Freedberg and Gallese suggested that this helps us to comprehend that by simply observing visual artwork, our brains can reconstruct past action of the creator. “We propose that even the artist’s [unseen] gestures in producing the artwork induce the empathetic engagement of the observer, by activating simulation of the motor program that corresponds to the gesture implied by the trace” (p. 202). Freedberg and Gallese suggested that we could gain a better empathic understanding of the artist, artist’s intentions, and artistic content by evaluating the formal elements. While the formal elements of artwork offer an important evaluative tool for art therapists, there are certainly other factors that help art therapists to assess client’s artwork.

Due to the supporting evidence that Broca’s area, which is involved in speech production, may parallel the region of the monkey brain where mirror neurons were discovered (Rizzolatti et al., 1996), it can be concluded that humans learned how to relate through image and gesture before we learned how to understand through words. The area of our brain responsible for primitive action understanding is the same area that allows for the more complex functioning of linguistic comprehension. This information offers more compelling evidence as to why the action of creating art with clients may improve empathic understanding; the act of creating, the

imagery created, and the social interaction during the process may provide neuropsychological stimulation and comprehension that may not be achievable through verbal dialogue alone.

According to Arizmendi (2011), empathy can be better understood through our use of personal imagery. He also stated that imagery is a critical necessity for empathy to emerge over simple emotional attunement. Decety and Jackson (2006) explored common definitions of empathy and surmised an all-inclusive definition as the common ability to “take the perspective of the other person” through our imagination (as cited by Arizemndi, p. 409). Arizmendi discussed the concept of empathy as including both a cognitive component as well as emotional resonance. He also stated, “The use of imagery represents a cognitive linking mechanism to help us transition from emotional sharing to empathy” (p. 409). According to Stern (2004), images are both by-products and informants of our intersubjective experience. In describing how empathy can be conceptualized within art therapy, Lachman-Chapin (2001) stated:

As artists we are drawn to an empathic way of relating to the world. We project our subjective state onto our artwork, which objectifies and expresses our introspection in a form outside ourselves that others can grasp through empathy. We empathically grasp artwork made by others. Thus, we are already attuned to an empathic response; as we help clients to produce expressive works of art, and as we respond to their creations.

(p. 69)

The principle focus of art therapy is on visual and somatosensory information and how graphic images are able to reflect our emotional experiences; these emotional internalizations affect our thoughts and behaviors (Lusebrink, 2004). The increasing research and theory that relates to mirror neurons and neuroscience has a noteworthy impact on art therapy; there is a need for more empirical support for the “empathic, emotional, bodily-based responses afforded

by the activation of circuitry and systems within the brain associated with simply viewing an image” (Belkofer, 2012, p. 29). Belkofer theorized that the act of watching another person make art has a cognitive impact that activates mirror neuron pathways.

Practices of Artistic Creation

While the artistic expression is a central element of art therapy, there are differing perspectives within the art therapy profession as to whether or not it is appropriate or beneficial to create artwork alongside clients within the therapeutic context. This section will examine some of the advantages and disadvantages of working alongside clients as evidenced by art therapists’ testimony. Some of the positive aspects of co-creation will be supported by suspected mirror neuron observations.

Actively Participate. In working with a traumatized client, Buk (2009) asserted how her client’s mirror neuron system was activated within the art therapy process. Buk described her work with a 27-year-old West African immigrant who experienced extreme post-traumatic stress disorder (PTSD) after being violently and wrongfully arrested, subsequently interrogated, and imprisoned for several days. The client’s vivid memories of the events were causing severe challenges in her normal functioning. Lusebrink (2004) stated that declarative memory, a form of long-term memory, involves processes in the right hippocampus and the right prefrontal cortex. Armed with this knowledge, we can understand that if emotional awareness and long-term memory are stored within the right hemisphere of the brain, then this qualifies the use of a visual therapeutic means that also engages the right hemisphere. According to Wolf and colleagues (2000, 2001), the mirror neuron system and embodied simulation creates the capability for imitation, internalization, and identification; this capacity exists on a continuum that “connects the deepest forms of empathy on one end to the most brutal expressions of

identification with the aggressor on the other” (as cited by Buk, 2009, p. 64). In other words, while our mirror neuron system acts to help us engage in the process of empathic understanding, its observation/execution matching function may also provide us with an internal grasp of the more malevolent side of human nature. Having a basic understanding about memory storage and formation as well as basic brain function can help art therapists to engage in more neuroscience-supported art interventions.

During a session with her client with PTSD, Buk (2009) listened to her client’s verbalizations of the traumatic event, and drew for her, which helped the client to work through her dissociative state. Buk alleged that the client’s verbal description of the event partnered with the creative expression, verbalizations, and art product of the therapist activated multiple mirror neuron pathways within the client. Buk was not only able to offer a safe place and therapeutic holding environment for creative expression but was also able to model an effective kinesthetic release of emotional energy. Partially through the artistic process, the client was able to take over the drawing material to engage in the completion of the artwork; she was able to explore and process her intense feelings associated with her distress.

Franklin (2010) discussed how the discovery of the mirror neuron system relates to the artistic process, attachment theory, and understanding empathic responses. Franklin focused on how “empathically attuned art” aided clients with affect regulation and developing “interpersonal relatedness”(p. 160). While employed on a locked inpatient unit, Franklin worked with seven male adolescents with clinical depression. He began creating artwork for the teens as a way to communicate his empathic understanding for their daily struggles. Franklin explained his process by stating, “Several of the group members commented on how well they thought I understood their situations and how much these visual responses helped them reflect and

experience their own feelings” (p.166). Franklin suggested that by formulating effective strategies for creating artwork in session, the art therapist puts himself in a “unique position to build on intersubjective understanding by mindfully utilizing empathic art to receive, consolidate, and offer back expressions of deflected affect to their clients” (p.166). He concluded by noting that the physiologically-based theory of empathy is evidenced through the discovery of the mirror neuron system.

Buk (2009) and Franklin (2010) both provided accounts in which they worked alongside clients in order to promote empathic understanding between therapist and client and encourage their clients to actively engage in the creative process. Buk and Franklin offered neuroscience support for these decisions and cited mirror neuron and embodied simulation observations. However, many art therapists have published their own co-creation and collaboration approaches with the goal of demonstrating advantages of this practice without including any neuroscience references, but citing their own testimony and positive therapy outcomes.

Haeseler (1989) cited several art therapists’ co-creation practices and provided her own reasoning for creating art alongside her clients. She discussed how the key element of the art therapy profession is to help clients find their own way to express their inner thoughts and feelings within the creative process. Haeseler suggested that while the client’s artwork is the foundation for the art therapy profession, there were times in which her collaborative artwork stimulated her client’s creative process. She provided several case studies in which she offered insight into how each client benefited from her participation in their creative outlet. Some of the themes included: mirroring the client’s visually-displayed thoughts and feelings, which lead to increase of empathic understanding, encouragement of safety without intrusion, and promotion of the therapeutic alliance; reinforcing physical boundaries, which emulated the dynamics of

interpersonal relationships, specifically that of mother and child; and modeling hard work, which promoted other group members to equally invest in the artistic process and meaningful self expression.

Mazloomian and Moon (2007) discussed working alongside adolescent clients as a way of modeling positive self-expression. In questioning Mazloomian's decision to not engage in artist creation with clients, Moon suggested, "Isn't it possible that your art making would be inspiring to your clients?" (p. 20). Moon advocated for co-creating with clients as a way to build the therapeutic alliance, create constructive transference feelings, and increase understanding. Moon was able to demonstrate the safety of creative expression, and because of this, his client exchanged his negative internalizations for "more positive images of self" (p. 20). Moon discussed how co-creating within the art therapy space helped a particular client self-disclose voluntary and unprompted information while working.

To describe how modeling the artistic process for a female adolescent psychiatric patient encouraged her to engage in her own creative process, Moon (1999) discussed how painting a portrait of his uncooperative client over the course of several sessions displayed his understanding of her depressive state. Moon recounted, "I decided I would try and capture those feelings [of depression] in the painting, in effort to empathize and commiserate with her" (p. 79). While viewing and discussing the painting with Moon, the client implied that she felt understood; she reported that she saw herself in the same manner that Moon depicted her. She was then able to come to the art studio and engage in painting without resistance.

Martin (2008) described an art therapy assessment that she developed, in which the client and art therapist drew portraits of one another. Martin created the Portrait Drawing Assessment (PDA) in order to assess trends and gain a greater comprehensive view of the artwork made by

children and teens on the autism spectrum. In asserting that the facilitator's artistic creation in the PDA was critical to the assessment process, Martin went on to say that the art therapist's creation functioned as "visual feedback" as to how the facilitator viewed the participant as well as providing "evidence of the cognition (mind) of the facilitator" (p. 17). Martin concluded that co-creating with clients provided the art therapist not only with useful information and data collection, but also offered structured rapport building. She attested that some of the information learned in the art assessment process would not have been apparent had she not engaged in creating alongside her clients.

Another application of creating artwork alongside clients was discussed by means of an 'Interactive Square' model (Bragge & Fenner, 2009). The Interactive Square model was developed for use with autistic clients and utilized the approach of art therapy to shift the art therapist from a role as a "spectator or observer to an active participant in the intersubjective dialogue" (Bragge & Fenner, 2009, p. 18). The authors detailed the interactive nature between client, art therapist, client's artwork, and art therapist's artwork. The art therapist made concentrated efforts to reflect the clients' artistic processes, products, and/or behaviors in her own artwork in an attempt to establish better communication with her clients. In reviewing video of sessions, it was noted that one client more willingly explored the art materials when less attention was placed on her. While some clients may be intimidated by the art therapist's abilities, others may feel less self-conscious if less attention is focused solely on them. "Involvement of the art therapist in the creative process contributed to a less intimidating therapy interaction providing alternative communicative means within the shared and independent space of art activity" (Bragge & Fenner, 2009, p. 26).

Gallese (2003, 2009) suggested that the lack of empathic interaction exhibited by individuals with autism might be a result of faulty mirror neuron systems, which would explain difficulties with recognition, understanding, and mimicry of facial emotions, thus affecting the capacity and development for embodied simulation and empathy. Individuals with autism do not show a normal capacity to automatically mimic facial expressions of basic emotions as shown through electromyogram recordings, and when asked to imitate facial expressions of these basic emotions, they do not show activation of the mirror neuron system (Gallese, 2009). So while Gallese explained potential neurobiological sources for interpersonal difficulties experienced in an autistic individual's brain, Martin's (2008) and Bragge and Fenner's (2009) testimonies indicate potential improvement of mirroring function, while promoting interactive dialogue, through the use of art therapy interventions. Bragge and Fenner (2009) attested:

Intersubjectivity and therapist involvement in the creative process contributed to broadening client engagement and the development of specific forms of interaction suited to each client. The approach encouraged interaction and alternative forms of communication against autistic withdrawal in the case of two non-verbal participants. (p. 26)

Faulty mirror neuron systems may not be exclusive to individuals with autism. "Deficits in mirror neuron functioning may help explain some of the social-interpersonal aspects of psychiatric disorders" (Schermer, 2010, p. 508). This method of working to encourage an interactive dialogue and combat withdrawal and isolation could easily be applied to non-autistic populations as well.

Kaplan (1983) described creating alongside clients while operating in a psychodynamic manner; she explained her method of creating on the same large paper with her client as a drawing dialogue or a sort of drawing game, in which each participant took turns. Through her

case illustration, she suggested that her patient-therapist drawings were able to help her client, who suffered early object loss (specifically, an absent mother), by recreating the damaged attachment relationship. The drawings became a reparative process through which the client was later able to individuate from the art therapist and create on her own. Lachman-Chapin (2001) suggested that by creating art along with the client, she promoted a kind of “mirroring empathic response” (p. 69). Lachman-Chapin (1983, 2001) remained true to her psychodynamic approach by working alongside her client without the client nor the therapist viewing the other’s work until finishing; thus the art therapist’s art process or product had less bearing on the client’s artwork. It is interesting to note the differing clinical reasoning behind the choices to actively participate in the creative process alongside the client; while both art therapists worked in a psychodynamic framework, Kaplan openly collaborated, and Lachman-Chapin worked more privately from her client’s view. In a commentary to Lachman-Chapin’s method, Schaverien (2001) indicated that this approach complicated the transference information, and she cautioned that while this controversial way of working may be useful for some clients, it needs careful consideration.

Strictly Observe. In an article describing the positive aspects of creating a drawing dialogue between client and therapist, Kaplan (1983) also described times when drawing should not be used with certain clients, particularly psychiatric patients. Co-creating with the client may complicate the transference relationship. According to Kaplan’s article, she explained her drawing process as a therapeutic merging, which established a beneficial transference relationship. It was suggested that “schizophrenics with a minimal sense of separate self do not benefit from an invitation to merge further, i.e., to give up more of themselves” (Kaplan, 1983, p. 83). It was also suggested that clients who are struggling to individuate in order to establish a

solid sense of self might be poor candidates for co-creation processes. Robbins commented, “By the very nature of their profession, art therapists, more than other members of the therapeutic team, are especially vulnerable to the primitive, nonverbal messages that constitute so large a part of communication on the part of psychotic and borderline patients and those suffering from character disorders” (Agell et al., 1981, p. 7).

Margaret Naumburg developed dynamically oriented art therapy, which is largely rooted within Freudian psychoanalysis. Naumburg (1987) stated, “The unconscious meaning of the spontaneous art productions created during art therapy are frequently obtained by encouraging the patient’s free associations to the images he creates. Such pictures are often a direct form of communication that functions as symbolic speech” (p.18). In other words, the act of co-creating with a client may disrupt the free association of images and visual communication of the client’s artistic process. This unaltered, unaffected artistic process may be necessary in determining certain elements of the client’s functioning, such as developmental level, interpersonal relationship patterns, risk factors, and ability to tolerate anxiety. For example, during art therapy assessments, a therapist would not engage in co-creation practices, unless necessary for the assessment (e.g., Martin’s Portrait Drawing Assessment). Certain elements of the symbolic speech of art therapy may get lost in artistic creation if the therapist’s artistic process potentially influences the client’s creative process.

Wadson (2010) reported that she usually does not work alongside clients and cited several reasons for this decision. She stated that the creative process is a reflection of the client’s personal exploration, and “it’s a matter of role” (p. 46). This perspective is supported by psychodynamic theory, which emphasizes that art therapy clients should free associate unconscious visual imagery in the art therapy setting (Naumburg, 1987). Wadson described

how some clients might feel inadequate in comparison to a trained artist. However, she then stated several occurrences in which doing artwork alongside clients is useful. She explained how working within the group art therapy context may be helpful and also provided an example of how using art to create a nonverbal interchange with a severely depressed man was the only way of effectively communicating. Wadeson warned that art therapists may become immersed in their own artistic process and end up neglecting the client. Wadeson commented, “Because observing the manner in which a piece of art develops is often revealing and because clients may want to comment as they are working, it is important to be available to them rather than lost in one’s own world” (p. 47).

CHAPTER IV: RESULTS

How has recent research on mirror neurons and embodied simulation informed the way we understand the therapeutic relationship? Can this neuroscience research help art therapists gain more insight into the advantages and disadvantages of co-creating artwork with clients in session? It appears that by achieving a greater understanding of mirror neuron and embodied simulation research, art therapists may gain better insight into the process of therapy and the therapeutic relationship from a neurobiological perspective. Because mirror neuron studies focus on mimicking motor function and an “observation/execution matching system,” mirror neuron research may help support the art therapist in a decision to co-create with clients in session. Because embodied simulation research focuses on our abilities to recognize our own internal mental states and feelings as well as those of others, art therapists may gain an increased understanding of empathy and instances of transference and countertransference, especially from a neurobiological perspective.

Empathic understanding has its roots in defining a person’s ability to relate to artwork. The internal responses experienced within an aesthetic encounter lead psychologists Lipps and Titchner to conceptualize empathy. Gallese (2009) suggested how embodied simulation *is* our ability to understand others and is therefore a critical “functional mechanism for empathy” (p. 524). Knowing this, we can conceptualize how the art therapist engaging in the artistic process alongside the client may increase empathic understanding. A main tenant of art therapy is the client’s engagement in the creation of visual products in order to express experiences in life, which are nonverbal, difficult to articulate, and/or unconscious. Empathy, transference, and countertransference are non-verbal concepts, which may benefit from being explored through a visual dialogue between the art therapist and client. Kaplan (1983) described how the

transferential relationship could be explored through the use of a drawing dialogue; Lachman-Chapin (1983) also detailed her process of creating alongside a client to explore the transferential relationship. However, it's important to consider that the art therapist's own unwanted, unconscious material may surface within the artistic process. In other words, while engaging in the artistic process in session may yield beneficial interpersonal information about the client, it may also be risky territory for a therapist to enter. Doing so may also complicate the therapeutic relationship. Because empathy, transference, and countertransference are such complex therapeutic constructs, it takes years of clinical experience of practicing and witnessing in order to fully grasp.

Co-creation Practices

“In the interactive art dialogue both parties must contribute something of themselves and this, in itself, is an element of healing” (Lachman-Chapin, 1983, p. 25). It appears that art therapists have offered several different ways to create artwork alongside clients within session as a way to promote maximum therapeutic benefit. Art therapists' clinical vignettes and case studies discussed the therapist's engagement in the artistic process through: creating as a way to stimulate a client's artistic process, creating artwork with a client in a collaborative manner, and creating artwork simultaneously as their client created. Allen (1992) suggested that “the opportunity for clients to observe involved art making is in itself therapeutic” and “learning through direct observation is extremely effective” (p.26).

It has been indicated that humans learned how to relate through image and gesture before learning how to understand through words. This was determined from evidence that our speech language center, Broca's area, may parallel the region of the monkey brain where mirror neurons were discovered (Rizzolatti et al., 1996). The area of the human brain responsible for primitive

action understanding is the same area that allows for the more complex functioning of linguistic comprehension. This information provides convincing evidence as to why the action of creating art with clients may improve communication and understanding; the act of creating, the imagery created, and the social interaction during the process may offer neuropsychological stimulation that may not be achievable through the therapist's verbal dialogue alone.

Stimulative

Creating in a stimulative fashion can be conceptualized as the art therapist creating for the client to model a certain process or end product and then encouraging the client to create independently. Buk (2009), Franklin (2010), and Moon (1999) cited how they were able to engage in their own artistic creations to stimulate the artistic engagement of their clients. Buk listened to her client's verbalization and drew for her in an effort to contain her client's traumatic experience; this led to her client then becoming engaged in the artistic process through the witnessed mirroring. Through their own artistic processes, Franklin and Moon stimulated their clients' creative inclinations by offering a tangible form of empathic understanding for their clients' depressive states.

Both Buk and Franklin provided neuroscience-based support for their clinical decisions, citing mirror neuron and embodied simulation observations. In witnessing the art therapist draw for her client, Buk testified that her client's mirror neuron system was likely activated. Mirror neuron research clearly states that the same neurons are firing in the brain of the observer and the participant during observation of goal-oriented tasks (Rizzolatti et al., 1996). In Franklin's testimony, it was unclear as to whether he drew exclusively in the presence of his clients or only showed them his completed art products. However, mirror neuron and embodied simulation research offers an explanation as to why seeing Franklin's art was effective in communicating

with and treating his clients. The mirror neuron system (MNS) not only mediates behavioral imitation, but it is theorized that the MNS also plays a role in action understanding (Rizzolatti et al., 1996; Rizzolatti & Craighero, 2004). Embodied simulation theory also suggests that people reuse their own cognitive abilities and attribute them to others in order to understand and relate to other people (Gallese & Sinigaglia, 2011). Each of Franklin's group members was able to understand Franklin's artwork differently and attribute it to his own internal experience. Freedberg and Gallese (2012) suggested that in viewing visual art, the spectator becomes engaged in empathic understanding. Through the therapist's use of visual empathic communication, the clients felt accurately understood; Franklin was able to create an empathic holding environment through his own artistic imagery. The conclusions drawn from Franklin's process can also likely be applied to Moon's work with his client as well. For their clients, the art served as a way of knowing and let their resistance to the process subside. Allen (1992) pointed out that an art therapist "must do a certain amount of teaching in order to help the client articulate inner experience" (p. 26).

Collaborative

While the effect of creating collaboratively may have the some of same outcomes as stimulative co-creation because both methods ultimately aim to encourage clients to engage in the creative process independently, the ways of working were separated due to the therapist's role in the creative expression. While working in a stimulative fashion, the art therapist creates art in order to engage the client in his/her own artistic process, and in the collaborative process, the art therapist and the client work together to do so. Haeseler (1989) and Moon (Mazloomian & Moon, 2007) cited working collaboratively with clients as a way to encourage the creative process, build the therapeutic relationship, encourage empathic understanding, and model a

positive outlet for creative expression. Kaplan (1983) explained her work in collaborating with clients as a replication of the process of symbiotic relatedness that is experienced between parent and child. The collaboration encouraged a reparative process, which may have increased receptivity to treatment, provided corrective experiences, and facilitated ongoing psychological growth.

In describing her collaborative work with clients, Haeseler (1989) cited that if she modeled hard work in creating her own artwork, her clients would work hard in their individual self-expression. Through this clinical practice, it would stand to reason that Haeseler was stimulating her clients' mirror neuron system due to its "observation/execution matching system" (Rizzolatti et al., 1996, p. 132). She also stated that this way of working collaboratively promoted empathic understanding, encouraged the therapeutic alliance, and emulated the dynamics of interpersonal relationships. Since the mirror neuron system works in a reciprocal fashion (Gallese, Eagle, & Migone, 2007), Haeseler's empathic expression through non-verbal actions (i.e., creating empathic art) would likely also encourage empathic reciprocity within her clients as well. By watching the art therapist engaging in active artistic expression, the client's MNS then becomes activated, essentially giving permission to follow the same neural pathway, which has been witnessed.

In addition to inspiring his clients to engage in their own artistic processes and promoting empathic understanding through his artistic creations, Moon (Mazloomian & Moon, 2007) also cited building the therapeutic alliance and creating constructive transference feelings as reasons for co-creating with clients. The mirroring process has been demonstrated not only to occur with motor actions, but also with emotions and meaning behind intentions (Divino & Moore, 2010). Gallese (2009) explained that instances of transference and countertransference were

unconscious, inherent mechanisms of the embodied simulation-driven mirroring mechanisms. By modeling his own artistic process, Moon was aiming to develop a visual transference relationship with his clients. By establishing an automatic mimicry response, engaging in empathic artistic expression, and encouraging clients to engage in their own artistic process after witnessing his, Moon likely encouraged empathic resonance. Emotional synchrony, physiological synchrony, and an automatic mimicry response are the precursors to empathy (Arizmendi, 2011), and the ability to empathize with others leads to better interpersonal relationships.

Simultaneous

Working simultaneously can be defined as the client and art therapist working on individual art creations in session. Martin (2008), Lachman-Chapin (1983, 2001) and Bragge (Bragge and Fenner, 2009) each discussed different ways to work simultaneously with clients. Martin cited that her Portrait Drawing Assessment helped to build rapport with her clients, and provided visual feedback and theory of mind of the facilitator. Lachman-Chapin (2001) suggested that while creating art along with the client, she promoted a kind of “mirroring empathic response” (p. 69). Bragge cited ways of responding to her autistic clients’ artwork through her own artistic process. Bragge made concentrated efforts to reflect her clients’ artistic processes, products, and/or behaviors in her own artwork in an attempt to establish better communication with her clients.

Lachman-Chapin explained her way of working as neither the client nor therapist viewing each other’s work until the completion of the art product. Lachman-Chapin’s way of positioning herself as to not influence the client’s artistic process may have been successful in some ways (i.e., the client’s free association of symbolic imagery may have not been impacted), but it could

be asserted that the client's mirror neuron system was still activated. Iacoboni (2007) stated that the observer's mirror neuron system is discharged in response to a sound associated with action is (e.g., a chisel marker on paper), even when the direct action is not witnessed. Additionally, the client could possibly observe the art therapist picking up an oil pastel or notice her sweeping arm movement while creating. The mirror neuron system becomes activated when witnessing other's actions that lie within our own repertoire (Rizzolatti et al., 1996), and the MNS is also responsible for reading the intentions of others (Gallese, Eagle, and Migone, 2007). While the client may not have seen the mark on the paper during creation of the artwork, the MNS would tell him/her what the outcome of a sweeping arm movement would be. This observation by the client could also be applied to Martin's PDA as well, which provides neuroscience support for her positive outcomes. Lachman-Chapin's and Martin's indications that co-creation generated an empathic understanding with clients in the process also has a neuronal basis. Freedberg and Gallese (2012) suggested that when viewing art, individuals could gain a better empathic understanding of the artist, artist's intentions, and artistic content by evaluating the formal elements; they proposed that "even the artist's [unseen] gestures in producing the artwork induce the empathetic engagement of the observer, by activating simulation of the motor program that corresponds to the gesture implied by the trace" (p. 202).

Bragge and Fenner's (2009) Interactive Square model utilized stimulative, collaborative, and simultaneous art making in order to encourage the clients' artistic processes and respond to the clients' art product. Though Bragge and Fenner designed the Interactive Square model to be used with the autistic population, it could be adapted for use with multiple populations, especially those that experience difficulty with communication or social withdrawal. The supporting neuroscience evidence discussed previously in the simulative and collaborative

sections could easily transfer to this clinical model. Although Gallese (2009) suggested that autistic individuals may have faulty mirror neuron systems, Bragge's treatment outcomes revealed improvement for her non-verbal clients. This suggests that the creative process may have a more complex neurobiological impact than we can currently fathom.

Strict Observation

Psychodynamic art therapy suggests that the client may lose the ability to fully engage in the unaltered, symbolic speech of the artistic process if influenced by the art therapist's art making. There is the argument that co-creation practices decrease the therapist's ability to be present (Wadeson, 2010). Robbins (Agell et al., 1981) cited that a therapist's active intervention in the art therapy process may be too intrusive. The therapist's artwork, which may be more skillful than the client's, may become the forefront of the session, which then becomes counterproductive. Robbins stated, "Sometimes the patient needs only the quiet, empathetic presence of the therapist to facilitate the process of giving symbolic form to the complex, nonverbal affects, wishes, fantasies, and images that characterize primary process thinking and codify early experiences" (Agell et al., 1981, p. 7). In essence, the therapist's purpose is to hold the space and act as an emotional container in order for clients to externalize their inner experience in the artwork.

Kaplan (1983) explained that certain psychiatric patients, such as some schizophrenic individuals and those who are struggling to individuate in order to establish a solid sense of self, are less ideal candidates for co-creation practices. Robbins suggested that art therapists have an increased vulnerability to the primitive and nonverbal language of the art products, especially when working with clients suffering with characterological disorders (Agell et al., 1981). Considering that mirror neurons work in a reciprocal fashion (Gallese, Eagle, & Migone, 2007),

these psychodynamic theories may have neurobiological support that raise valid points in clinical settings. Creating art alongside clients may cause the therapist to open up more, which may create more empathic understanding, but may inadvertently increase the therapist's vulnerability; this could definitely work as a disadvantage with some client populations.

CHAPTER V: DISCUSSION

Because this research covered a broad range of material from different disciplines, it was necessary to limit the amount of material included in order to adhere to the scope of the research. Attempts were made to include very basic information for the reader to have a general knowledge of the topic (e.g., the definition and brief background of neuroscience), however sources were rigorously evaluated in order to maintain the limitations of this study (e.g., empathy discussed in depth as it relates to the neurobiology).

It appears that a considerable amount of published art therapy and neuroscience research relates to trauma. This posed an interesting dynamic to obtain more generalized research as it related to neuroscience and the general clinical practice of art therapy. However, trauma is extremely prevalent within the mental health field and can be easily transferable in working within multiple settings and client populations. Trauma studies were often introduced into this research when deemed relevant and easily generalizable, however trauma studies were only sought on a limited basis and not extensively examined.

Limitations of This Study

A limitation of this study may be the time constraints associated with this thesis research. Neuroscience is a vast, complex, and continually changing subject that can be difficult to synthesize in a timely manner. Because neuroscience research is constantly expanding, it may also be difficult to judge whether or not the resources utilized are the most current and accurate reflections of the field. However, solid attempts were made to continually add resources to the researcher's referenced sources in order to adequately reflect the most up-to-date research. Additionally, Jesson, Matheson, and Lacey (2012) suggested that cross-discipline systematic literature reviews may be difficult for these reasons.

Within the art therapy research, one limitation of this study was the apparent lack of information on the practice of strictly observing the client create during art therapy sessions. While this type of practice is certainly supported by a psychodynamic framework, which describes the therapist's presence as a witness to the art making in order to maintain the holding environment (Agell et al., 1981), there appears to be little easily searchable published information that discusses this practice of strict observation. Is there a lack of information, or is this a reflection of the profession's practical issues with language? How is this concept verbalized or reduced into search terms?

Furthermore, this directly relates to another challenge of this study. While there were many clinical cases and therapeutic perspectives involving co-creation practices that were obtained and included within this research, the process of searching proved to be difficult. Many art therapists discussed their reasons for creating alongside clients and the positive benefits in doing so, however, this was often not the focus of the publication. Therefore, key search terms used in database searches may not reveal any pertinent sources. For example, Bragge and Fenner's (2009) Interactive Square model of working with clients fully engaged the artistic participation of the art therapist in session. The element of the art therapist's artwork is key in this model, yet no mention of this is included in the keywords for the academic publication. This is a prime example of the difficulty in locating relevant sources for the scope of this research. It raises an interesting question as to why this is happening within our field. When researchers such as Bragge and Fenner design a model that focuses so heavily on the art therapist's art making within session, why is it not mentioned within the search terms? Is it a simple oversight? Is it difficult to define this practice in terms of a keyword? Does our psychodynamic training make us feel shame or untrue to the profession for doing so, or are there other reasons not

mentioned? When it comes to the debate within the art therapy community about co-creation practices, what are our fears?

While limitations of inclusive search terms were at times problematic, the concepts of responsive art making (Moon, 1998; Miller, 2011), drawing dialogue (Kaplan, 1981), and interactive art dialogue (Lachman-Chapin, 1983) were revealed. Moon (1998) and Miller (2011) both discussed their processes in using responsive art making during or after session. Moon (1998) defined responsive art making as a process in which the art therapist creates art in reaction to the images of others. He stated that responsive art making is “helpful to art therapists as an aid in establishing an empathic relationship, as an expressive outlet for the powerful feelings that are often stirred up in the clinical or educational contexts, and as the starting place for imaginative interpretive dialogue with others” (p. 9). Miller (2011) conceptualized response art in broad terms by describing it as “the therapist’s manipulation and use of art materials in response to the client in-session or as a means of processing feelings and reactions post-session” (p. 186). While the concept of response art seems to capture a similar meaning to that of this paper’s term of co-create, response art is defined in terms of the art therapist’s feelings and reactions in-session or post-session. Co-creation does not include the art therapist’s work outside of session. The concept of co-creation also does not aim to have the therapist’s processing as its main function, though the therapist’s processing of countertransference feelings may likely happen due to the nature of the creative process. Responsive art making is also defined as a process in which the art therapist engages in his/her own work, and co-creation can extend beyond the art therapist’s artwork and include collaborative artworks as well. Since a main function of responsive artwork is to serve as a framework for the art therapist to explore his/her own feelings, the art therapist’s work may then become the forefront of the session. Unless the

art therapist maintains good boundaries and adequate self-awareness, this could end up becoming counterproductive to the treatment objectives.

Lachman-Chapin (1983) referred to her process of creating alongside clients as an interactive art dialogue; she and the client often created simultaneously, neither seeing the other's work in progress. Lachman-Chapin (2001) reasoned that this way of working minimized the impact of her artistic process and products on the client's art making experience. However, Kaplan (1983) described her drawing dialogue, in which she and the client took turns creating jointly on a single paper, as having the opposite motivation as Lachman-Chapin. The goal of these patient-therapist drawings, as Kaplan termed them, was to stimulate the clients' artistic process and engage them in a symbiotic gratification process through the mutual artistic creation. While many resources, such as Lachman-Chapin and Kaplan, describe the precise process that the research of this paper aimed to investigate, the differing labels of the clinical practices proved to add difficulty in locating such research. These types of publications were often located through evaluating the references of other pertinent resources; however, some sources were found through sheer coincidence (e.g., reading for other academic purposes).

Boenheim and Stone (1969), Horowitz (1978), and Landgarten (1981) have all reported the effectiveness of the art therapist and client sharing the same paper or canvas as an effective way to treat schizophrenia for building trust and increasing communication (as cited by Kaplan, 1983). However, as can be seen by all of these references, while this material may all be relevant to current clinical practice, these sources are dated. It appears that there is a gap in the literature on this topic involving co-creation practices in present-day clinical settings. While art therapy is continually evolving, should we occasionally revisit the basic fundamental practice of our professional identity?

This research process yielded many more authors who described their active participation in the creative process over those who described reasons to strictly observe. This was another limitation of this study due to the lack of published information that was obtainable, which discussed this process. While many art therapists certainly practice from a psychodynamic approach, which supports the act of strictly observing their client's creative process, few articles were easily found that described the therapist's reasoning behind this adherence. Again, this could have been due to the lack of inclusion of key search terms or the practice was not deemed relevant to the research being presented. Perhaps we feel it necessary to defend our thought processes when we do choose to co-create over choosing not to actively engage in the creative process. Perhaps this is a reflection of the theoretical model of our art therapy training. After all, our professional identity is rooted in a psychodynamic framework, which supports a client's symbolic, unconscious process. However, what we now understand from neuroscience may be just as validated within contemporary art therapy practice.

Clinical Implications

While mirror neuron research may inform the art therapist about the benefits of co-creating with clients, theoretical orientation and therapeutic practice may hold greater importance in the established art therapist's decision-making process. In other words, why fix what isn't broken? In clinical practice, if established art therapists have found that having clients create in their presence rather than working alongside them promotes maximum therapeutic benefit, as defined by art therapist testimony, then why change? If working alongside clients has proven to be beneficial for others, then this research may help the art therapist feel more validated and supported.

Furthermore, this investigation into the research may help novice art therapists gravitate toward a theoretical orientation and discover their natural therapeutic style. In concluding this extensive investigation, it appears that co-creating with clients may align more closely with more humanistic and psycho-educational therapeutic approaches, while letting clients create on their own falls more closely with psychodynamic models. While there are differing perspectives within the art therapy profession as to whether or not it is appropriate or beneficial to co-create with clients, it also appears that there is a divide within the art therapy community about the practices of art as therapy versus art psychotherapy. The artist as therapist perspective has been criticized by its opponents as not being rooted within the science, while art psychotherapists have been scrutinized for being too clinical and lacking in the root elements of art therapy such as art history, art education, and the joy of art making (Hinz, 2009). While co-creation practices may be more aligned with art as therapy over art psychotherapy, some art therapist testimony demonstrates co-creation practices that can be considered psychodynamic art psychotherapy. So with this knowledge, this research may provide the reader with a fuller picture of the art therapist's role in clinical practice in regards to the therapeutic approach and understanding the therapeutic relationship.

Art therapy offers a client the opportunity to experience “mutually dependent communication that builds contingent attachment” with the art therapist; this facilitates increased emotional attunement and creates a therapeutic space that allows for increased emotional regulation (Hass-Cohen, 2008, p. 289). In gaining a better understanding of the neurobiology behind the attachment process and the formation of early relational experiences, the art therapist can use this knowledge to make more educated decisions in the art therapy process. For example, in working with clients with extreme difficulties with interpersonal relationships,

creating alongside them may be helpful to establish the therapeutic relationship by replicating a healthy early attachment relationship activity. In describing her work with creating alongside an adult male client, Lachmin-Chapin (1983) suggested, “Our art interaction became, in part, a paradigm for the primary giving-and-receiving interchange of mother and child” (p. 21). The transferential and countertransferential material that surfaced through the art products became a catalyst for a dialogue on how to work through the issues that brought him to therapy—feelings of meaninglessness, emptiness, and difficulties with his wife. Kaplan’s (1983) drawing dialogue, which encouraged the symbiotic gratification process through collaborative work with the client, suggested a “*regressive* phenomenon, serving either a reparative or defensive functioning” (p. 84). She conceptualized this “therapeutic wish to merge” as a possible replication of early attachment relationships with a “good parent.”

Many art therapists have offered their clinical impressions, reasonings, and treatment outcomes for co-creation practices. Some art therapists may consider co-creation practices as more of an intervention strategy, while others may consider it part of their therapeutic identity. It appears that major contributors to the professional art therapy establishment often have conflicting ideals, sometimes even citing the same concept to argue their point. For example, Haeseler (1989) stated that her responsive artwork to her client worked to provide safe boundaries without too much intrusion. However, Robbins (Agell et al., 1981) argued the opposite stating that a therapist’s active intervention in the art therapy process may be too intrusive to the therapeutic dynamic. It is hopeful that this research provides more of an opportunity for art therapists to critically reflect on their own creative process ideals during session.

There is the argument that co-creation practices decrease the therapist's ability to be present. Can the art therapist become truly attuned to the client's artistic process and product if the clinician is creating her own artwork? However, there are certain situations, for example, as described by Bragge and Fenner (2009), in which the art therapist offers more therapeutic benefit when the client feels less under the watchful, microscopic eye of the art therapist; some clients may feel more uncomfortable with the art therapist staring at their process. There is also the concern that the therapist's skillful artwork may become the forefront of the session. It is important to consider these points and the therapist must always be mindful of the purpose of his/her creative activity. The art therapist's creative intentions must remain in the service of the client.

Pedagogical Implications

The difficult process of locating articles, which discussed different types co-creation practices, may indicate a need for more discussion in art therapy education. Within our training programs, a critical debate is necessary for students to explore the advantages and disadvantages from a theoretical standpoint. Student art therapists need to be exposed to the different roles of the art therapist in order to gain a clearer understanding of their own natural therapeutic approach. While no school of thought may be absolutely right or wrong, it is important to include these discussions into our educational models so future art therapists can be prepared to critically evaluate their clinical process when working with clients.

The findings of this research also suggest a need for more neuroscience information to be integrated within art therapy training programs. Understanding how creating art and how art media impact the left and right hemispheric brain functions as conceptualized by the Expressive Therapies Continuum (see Hinz, 2010) provides a solid foundational platform to introduce this

type of educational information. This investigation illustrates how having a general understanding of neuroscience research can be useful in aiding the art therapist's decision to co-create, and it also begins to explain the importance of how art therapy can be used to reveal implicit memories and emotions. By incorporating more neuroscience education into art therapy training programs, art therapy educators may encourage future art therapists to engage in more empirical art therapy research upon entering clinical practice. More art therapy research that is rooted in hard science will ultimately secure our professional establishment as more than what meets the eye.

While increasing knowledge of basic neuroscience principles can aid in art therapy practice, more generalized information about brain function may also aid therapist trainees in the knowledge of the therapist's presence. When discussing how to integrate more neurobiological findings into verbal psychodynamic psychotherapy training models, Divino and Moore (2010) discussed how a background knowledge of the functionality of the mirror neuron system and limbic system can aid therapists in helping clients to better self-regulate through non-verbal cues. Through the therapist's own subtle down-regulating behaviors (e.g., taking deep breaths, relaxing tense muscles, leaning back slightly), "the patient's mirror neurons and limbic processes contingently respond" (Divino & Moore, 2010, p. 342). Neuroscience education can offer connections and reasoning for our therapeutic choices that goes beyond psychotherapy theory.

Implications for Future Research

The results of this study suggest several positive neurobiological reasons for co-creating with clients within the art therapy setting. A future art therapy investigator may want to collaborate with an individual with a neuroscience background in order to fully explore the neuroscience component of this research proposal. Could the artistic process of the client and

therapist be evaluated through scientific methods during art therapy session in order to definitively prove the theoretical implications of mirror neuron stimulation found in this research? Could the art products somehow be evaluated for evidence of positive neurological changes?

The difficult process of obtaining current resources that discussed the clinical practices of strictly observing versus actively participating in the creative process during art therapy sessions may suggest a gap in the literature or difficulty in adequately defining this clinical judgment. A future researcher may want to survey art therapists about their clinical practices in relation to co-creation as well as inquire about art therapy training, theoretical orientation, reasoning, and judgment behind their decisions. A study such as this may help shed some light on the apparent lack of research and clinical studies readily available.

Another research inquiry may include surveying art therapy training programs in order to determine the nature of the pedagogical framework. How do art therapists in training understand the professional role of the art therapist within the therapy session? How much contemporary information is included in their education regarding the art therapist's role? How heavily are art therapy educators relying on the foundational information versus newer schools of thought? If a researcher were to determine how many art therapy programs are integrating neuroscience information into their coursework, it may also provide insight for the development and understanding of our profession.

CHAPTER VI: CONCLUSIONS AND RECOMMENDATIONS

Ultimately, the art therapist will choose if and when co-creation practices are necessary and helpful for treatment. It is up to the art therapist to determine the needs of the client and base the decision on clinical judgment. An intention of this research is not to suggest that all art therapists should co-create during all sessions, but to offer neurobiological findings to support the art therapist in the decision to co-create as well as offer situations in which co-creation practices may be effective, ways to co-create with clients, and possible rationale for co-creation practices.

Since the art therapist's role in the creative process is an under discussed debate in our field, it may be beneficial to establish more clear terms to define these practices of active engagement versus strict observation. Perhaps if these delineations were clearer, it may become easier for educators to incorporate more of this information in graduate coursework. Integrating some basic neuroscience education into art therapy programs will also prove beneficial for the continual establishment of our professional identity as art therapists.

Co-creation can be a valuable process in art therapy sessions when used with the appropriate clinical judgment. The clinical setting and the goals of the art therapy treatment must be considered in order to evaluate the potential benefits and detriments of the art therapist's participation in the creative process. While co-creation practices may be applicable to many populations, there are certainly some settings more conducive to this process. While some art therapists may consider co-creation as part their therapeutic identity, others may consider it as more of an intervention strategy. An intention of this research is to offer thought-provoking material, which provides art therapists with that opportunity to reflect more critically on their professional identity and ideals regarding their participation in the creative process.

References

- Agell, G., Levick, M. F., Rhyne, J. L., Robbins, A., Rubin., Ulman., E., ... Wilson, L. (1981). Transference and countertransference in art therapy. *American Journal of Art Therapy*, 21(1), 3-24
- Allen, P. B. (1992). Artist-in residence: An alternative to 'Clinification' for Art Therapists. *Art Therapy: Journal of the American Art Therapy Association*, 9(1), 22-29.
- American Art Therapy Association. (2013). *American Art Therapy Association fact sheet* [Data file]. Retrieved from <http://www.americanarttherapyassociation.org/upload/aatafactsheet.pdf>
- Arizmendi, T. G. (2011). Linking mechanisms: Emotional contagion, empathy, and imagery. *Psychoanalytic Psychology*, 28(3), 405-419. doi:10.1037/a0024176
- Badenoch, B., & Cox, P. (2010). Integrating interpersonal neurobiology with group psychotherapy. *International Journal Of Group Psychotherapy*, 60(4), 463-481. doi:10.1521/ijgp.2010.60.4.462
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.
- Belkofer, C. M. (2012) *The impact of visual art-making on the brain* (Unpublished doctoral dissertation). Lesley University, Cambridge, MA.
- Belkofer, C. M. & Konopka, L. M. (2008). Conducting art therapy research using quantitative EEG measures. *Art Therapy: Journal of the American Art Therapy Association*, 25(2), 56-63.
- Berger, K. S. (2010). *Invitation to the life span*. New York, NY: Worth

- Bhattacharya, J., & Petsche, H. (2005). Drawing on Mind's Canvas: Differences in Cortical Integration Patterns Between Artists and Non-Artists. *Human Brain Mapping, 26*(1), 1-14. doi:10.1002/hbm.20104
- Bragge, A., & Fenner, P. (2009). The emergence of the 'Interactive Square' as an approach to art therapy with children on the autistic spectrum. *International Journal of Art Therapy, 14*(1), 17-28
- Bretherton, I. (1992). The origins of attachment theory: John Bowlby and Mary Ainsworth. *Developmental Psychology, 28*, 759-775.
- Buk, A. (2009). The mirror neuron system and embodied simulation: Clinical implications for art therapists working with trauma survivors. *The Arts In Psychotherapy, 36*(2), 61-74. doi:10.1016/j.aip.2009.01.008
- Corey, G. (2013). *Theory and practice of counseling and psychotherapy* (9th ed.). Belmont, CA: Brooks/Cole, Cengage Learning.
- Divino, C. L., & Moore, M. S. (2010). Integrating neurobiological findings into psychodynamic psychotherapy training and practice. *Psychoanalytic Dialogues, 20*(3), 337-355. doi:10.1080/10481885.2010.481613
- Ellingson, M. (1991). A philosophy for clinical art therapy. In H. B. Landgarten & D. Lubbers (Eds.), *Adult art psychotherapy: Issues and applications*. (pp. 3-20). New York, NY: Brunner/Mazel.
- Empathy. (1987). *The Random House dictionary of the English language* (2nd ed.). New York, NY: Random House.

- Franklin, M. (2010). Affect regulation, mirror neurons, and the third hand: Formulating mindful empathetic art interventions. *Art Therapy: Journal of the American Art Therapy Association, 27*(4), 160-167.
- Freedberg, D., & Gallese, V. (2007). Motion, emotion and empathy in esthetic experience. *Trends In Cognitive Sciences, 11*(5), 197-203. doi:10.1016/j.tics.2007.02.003
- Freud, S. (1910). The origin and development of psychoanalysis. *The American Journal of Psychology, 21*(2), 181-218.
- Freud, S. (1995). *The basic writings of Sigmund Freud*. (A. A. Brill, Trans. & Ed.). New York, NY: Random House. (Original work published 1938)
- Gallese, V. (2003). The roots of empathy: the shared manifold hypothesis and the neural basis of intersubjectivity. *Psychopathology, 36*(4), 171-180.
- Gallese, V. (2009). Mirror neurons, embodied simulation, and the neural basis of social identification. *Psychoanalytic Dialogues, 19*(5), 519-536.
doi:10.1080/10481880903231910
- Gallese, V. (2011). Embodied simulation theory: Imagination and narrative. *Neuropsychoanalysis, 13*(2), 196-200.
- Gallese, V., Eagle, M. N., & Migone, P. (2007). Intentional attunement: Mirror neurons and the neural underpinnings of interpersonal relations. *Journal Of The American Psychoanalytic Association, 55*(1), 131-176.
- Gallese, V., & Sinigaglia, C. (2011). What is so special about embodied simulation?. *Trends In Cognitive Sciences, 15*(11), 512-519. doi:10.1016/j.tics.2011.09.003
- Gantt, L. & Tinnin, L. W. (2009) Support for a neurobiological view of trauma with implications for art therapy. *The Arts in Psychotherapy, 36*, 148-153.

- Gibbons, S. B. (2011). Understanding empathy as a complex construct: A review of the literature. *Clinical Social Work Journal*, 39(3), 243-252. doi:10.1007/s10615-010-0305-2
- Ginot, E. (2009). The empathic power of enactments: The link between neuropsychological processes and an expanded definition of empathy. *Psychoanalytic Psychology*, 26(3), 290-309. doi:10.1037/a0016449
- Gough, D., Thomas, J., & Oliver, S. (2012). Clarifying differences between review designs and methods. *Systematic Reviews*, 1(28), 1-9. doi:10.1186/2046-4053-1-28
- Haeseler, M. P. (1989). Should art therapists create artwork alongside their clients?. *American Journal of Art Therapy*, 27, 70-79.
- Hass-Cohen, N. (2008). CREATE: Art therapy relational neuroscience principles (ATR-N). In N. Hass-Cohen & R. Carr (Eds.) *Art therapy and clinical neuroscience*. (pp. 283-309) London: Jessica Kingsley Publishers.
- Hinz, L. D. (2009). *Expressive therapies continuum*. New York, NY: Taylor & Francis Group
- Högberg, G., Nardo, D., Hällström, T., & Pagani, M. (2011). Affective psychotherapy in post-traumatic reactions guided by affective neuroscience: Memory reconsolidation and play. *Psychology Research And Behavior Management*, 4, 87-96.
- Iacoboni, M. (2007). Face to face: The neural basis of social mirroring and empathy. *Psychiatric Annals*, 37(4), 236-241.
- Jesson, J. K., Matheson, L., & Lacey, F. M. (2012). *Doing your literature review: Traditional and systematic techniques*. Los Angeles: SAGE.
- Kaplan, F. F. (1983). Drawing together: Therapeutic use of the wish to merge. *American Journal Of Art Therapy*, 22(3), 79-85.

- Kerr, C. E. (2008). Dualism redux in recent neuroscience: 'Theory of mind' and 'embodied simulation' hypotheses in light of historical debates about perception, cognition, and mind. *Review Of General Psychology, 12*(2), 205-214. doi:10.1037/1089-2680.12.2.205
- Koch, S. C., & Fuchs, T. (2011). Embodied arts therapies. *The Arts In Psychotherapy, 38*(4), 276-280. doi:10.1016/j.aip.2011.08.007
- Kramer, E. (1986). The art therapist's third hand: Reflections on art, art therapy, and society at large. *American Journal Of Art Therapy, 24*(3), 71-86.
- Kramer, E. (2001) Sublimation and art therapy. In J. A. Rubin (Eds.), *Approaches to art therapy: Theory and technique (2nd ed.)* (pp. 28-39). New York, NY: Routledge.
- Krietler, H., & Krietler, S. (1972). *Psychology of the arts*. Durham, NC: Duke University Press
- Lachman-Chapin, M. (1983). The artist as clinician: An interactive technique in art therapy. *American Journal Of Art Therapy, 23*(1), 13-25.
- Lachman-Chapin, M. (2001) Self psychology and art therapy. In J. A. Rubin (Eds.), *Approaches to art therapy: Theory and technique (2nd ed.)* (pp. 66-80). New York, NY: Routledge.
- Levick, M. (1975). Transference and counter-transference as manifested in graphic productions. *The Arts In Psychotherapy, 2*(3-4), 203-215. doi:10.1016/0090-9092(75)90004-6
- Lusebrink, V. B. (2004). Art therapy and the brain: An attempt to understand the underlying processes of art expression in therapy. *Art Therapy: Journal of the American Art Therapy Association, 21*(3), 125-135.
- Martin, N. (2008). Assessing portrait drawings created by children and adolescents with autism spectrum disorder. *Art Therapy: Journal of the American Art Therapy, 25*(1), 15-23. doi:10.1080/07421656.2008.10129348

- Mazloomian, H., & Moon, B. (2007) Images from purgatory: Art therapy with male adolescent sexual abusers. *Art Therapy: Journal of the American Art Therapy Association*, 24(1), 16-21.
- McNamee, C. M. (2006). Experiences with bilateral art: A retrospective study. *Art Therapy Journal of the American Art Therapy Association*, 23(1), 7-13.
- Mertens, D. (2010) *Research and evaluation in education and psychology* (3rd ed.). Thousand Oaks, CA: SAGE
- Miller, R. B. (2007). The role of response art in the case of an adolescent survivor of developmental trauma. *Art Therapy: Journal of the American Art Therapy Association*, 24(4), 184-190.
- Moon, B. L. (1997). *Welcome to the studio: The role of responsive art making in art therapy*. (Doctoral Dissertation) Retrieved from ProQuest Dissertations and Theses A&I, (9814758).
- Moon, B. L. (1999). The tears make me paint: The role of responsive artmaking in adolescent art therapy. *Art Therapy: Journal of the American Art Therapy Association*, 16(2), 78-82.
doi:10.1080/07421656.1999.10129671
- Moon, B.L. (2006) *Ethical issues in art therapy* (2nd ed.). Springfield, IL: Charles C Thomas.
- Naumburg, M. (1987) *Dynamically oriented art therapy: It's principles and practice*. Chicago, IL: Magnolia Street.
- Neuroscience (n.d.). In *Merriam-Webster online*. Retrieved from <http://www.merriam-webster.com/medical/neuroscience>
- Nordqvist, C. (2012, August 7). *What is neuroscience?*. Retrieved from <http://www.medicalnewstoday.com/articles/248680.php>

- Rizzolatti, G., & Craighero, L. (2004). The mirror neuron system. *Annual Review Of Neuroscience*, 27(1), 169-192. doi:10.1146/annurev.neuro.27.070203.144230
- Rizzolatti, G., Fadiga, L., Gallese, V., & Fogassi, L. (1996). Premotor cortex and the recognition of motor actions. *Cognitive Brain Research*, 3(2), 131-141.
- Robbins, A. (2001) Object relations and art therapy. In J. A. Rubin (Eds.), *Approaches to art therapy: Theory and technique (2nd ed.)* (pp. 54-65). New York, NY: Routledge.
- Robbins, S. B., & Jolkovski, M. P. (1987). Managing countertransference feelings: An interactional model using awareness of feeling and theoretical framework. *Journal Of Counseling Psychology*, 34(3), 276-282. doi:10.1037/0022-0167.34.3.276
- Rochat, M. J., Caruana, F., Jezzini, A., Escola, L., Intskirveli, I., Grammont, F., & ... Umiltà, M. (2010). Responses of mirror neurons in area F5 to hand and tool grasping observation. *Experimental Brain Research*, 204(4), 605-616. doi:10.1007/s00221-010-2329-9
- Rosal, M. (2001) Cognitive-behavioral art therapy. In J. A. Rubin (Eds.), *Approaches to art therapy: Theory and technique (2nd ed.)* (pp. 210-225). New York, NY: Routledge.
- Rubin, J. A. (Ed.). (2001a). *Approaches to art therapy: Theory and technique (2nd ed.)*. New York, NY: Routledge.
- Rubin, J. A. (2001b) Discovery, insight, and art therapy. In J. A. Rubin (Eds.), *Approaches to art therapy: Theory and technique (2nd ed.)* (pp. 15-27). New York, NY: Routledge.
- Schaverien, J. (2001) Commentary: Postscript 2000. In J. A. Rubin (Eds.), *Approaches to art therapy: Theory and technique (2nd ed.)* (pp. 109-116). New York, NY: Routledge.
- Schermer, V. L. (2010). Mirror neurons: Their implications for group psychotherapy. *International Journal Of Group Psychotherapy*, 60(4), 487-513. doi:10.1521/ijgp.2010.60.4.486

- Schore, A. N. (2003). *Affect regulation and the repair of the self*. New York, NY: Norton.
- Siegel, D. J. (2001). *The developing mind: How relationships and the brain interact to shape who we are*. New York, NY: Guilford Press.
- Society for Neuroscience (2013). *About neuroscience*. Retrieved from <http://www.sfn.org/about/about-neuroscience>
- Stern, D. N. (2004). *The present moment in psychotherapy and everyday life*. New York, NY: Norton.
- Stueber, Karsten, (2013). Empathy. In E. N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy*. Retrieved from <http://plato.stanford.edu/archives/sum2013/entries/empathy/>
- Titchener, E. B. (1909) *Lectures on the experimental psychology of the thought-processes*. New York: MacMillan
- Ulman, E. (2001) Variations of a Freudian theme: Three art therapy theorists. In J. A. Rubin (Eds.), *Approaches to art therapy: Theory and technique (2nd ed.)* (pp. 289-305). New York, NY: Routledge.
- Vivona, J. M. (2009). 'Leaping from brain to mind: A critique of mirror neuron explanations of countertransference': Response to commentaries. *Journal Of The American Psychoanalytic Association*, 57(3), 569-573. doi:10.1177/0003065109336944
- Wadeson, H., (2010). *Art Psychotherapy (2nd ed.)*. Hoboken, NJ: John Wiley & Sons
- Whittenmore, R., & Knafl, K. (2005). The integrative review: Updated methodology. *Journal of Advanced Nursing*, 52(5), 546-533.
- Winnicott, D. W. (1953). Transitional objects and transitional phenomena. *The International Journal of Psychoanalysis*, 34(2), 89-97.