

Theses and Dissertations

2018

Altruism in psychotherapy: altruistic acts as an adjunct to psychotherapy

Erin Santos

Follow this and additional works at: <https://digitalcommons.pepperdine.edu/etd>

Recommended Citation

Santos, Erin, "Altruism in psychotherapy: altruistic acts as an adjunct to psychotherapy" (2018). *Theses and Dissertations*. 982.

<https://digitalcommons.pepperdine.edu/etd/982>

This Dissertation is brought to you for free and open access by Pepperdine Digital Commons. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of Pepperdine Digital Commons. For more information, please contact Katrina.Gallardo@pepperdine.edu, anna.speth@pepperdine.edu, linhgavin.do@pepperdine.edu.

Pepperdine University
Graduate School of Education and Psychology

ALTRUISM IN PSYCHOTHERAPY: ALTRUISTIC ACTS AS AN ADJUNCT TO
PSYCHOTHERAPY

A clinical dissertation submitted in partial satisfaction
of the requirements for the degree of
Doctor of Psychology

by

Erin Santos

August, 2018

Lou Cozolino, Ph.D. – Dissertation Chairperson

This clinical dissertation, written by

Erin Santos

under the guidance of a Faculty Committee and approved by its members, has been submitted to and accepted by the Graduate Faculty in partial fulfillment of the requirements for the degree of

DOCTOR OF PSYCHOLOGY

Doctoral Committee:

Lou Cozolino, PhD, Chairperson

Aaron Aviera, PhD,

Elizabeth Laugeson, PsyD,

Copyright by Erin Santos 2018

All Rights Reserved

TABLE OF CONTENTS

	Page
LIST OF TABLES	vii
VITA.....	viii
ABSTRACT	ix
Chapter 1: Introduction.....	1
Altruism in Other Animals	2
Altruism and Recovery	3
Chapter 2: Literature Review	6
Emergence of Altruism	8
Cultural Prevalence of Altruism	9
Altruism in Action	11
The Benefits of Altruism for Physical Health and Longevity	12
The Psychological Benefits of Altruism	12
Altruism and Psychotherapy	14
When Altruism Is Required	16
Research Hypotheses	17
Guided Altruism in Psychotherapy	18
Chapter 3: Review and Analysis Procedures	20
Compilation of Literature Review	20
Inclusion criteria for literature.....	20
Search engines and search terms	20
Reviewing the Literature	22

Organizing and Analyzing Information	22
Dissertation Organization	22
Chapter 4: Results.....	24
Improving Emotional Regulation.....	24
Creating a Safe Internal Space that Allows for Increased Self-Insight and Emotional Awareness.....	27
Facilitate Adaptive Interpersonal Relationships.....	30
Increased Awareness of Others	32
Compassion	33
Empathetic Attunement.....	34
Building a Secure Therapeutic Relationship	35
Overview of Results	37
The Biology of Altruism	38
The Psychology of Altruism.....	39
Social Connectedness and Altruism	41
Chapter 5: Discussion.....	43
Concerns Regarding Altruism	46
Limitations of the Study	48
Areas for Future Study	49
Conclusion.....	51
REFERENCES	52
APPENDIX A: Extended Review of the Literature.....	59
APPENDIX B: IRB Documentation	81

List of Tables

	Page
Table 1. Physical Benefits Associated with Altruism	12
Table 2. Psychological Benefits Associated with Altruism	14
Table 3. The Impact of Altruism on Emotional Regulation	25
Table 4. The Impact of Altruism on the Creation of a Safe Internal Space	28
Table 5. The Impact of Altruism on Adaptive Interpersonal Relationships.....	30
Table 6. The Impact of Altruism on Secure Therapeutic Relationships	35
Table 7. Brain Regions Activated Secondary to Altruism	38
Table 8. Positive Reported Psychological Effects of Altruism	39
Table 9. Positive Reported Social Consequences of Altruism	40

VITA

EDUCATION

Pepperdine University, Graduate School of Education and Psychology **August 2019**

Los Angeles, California, *Doctor of Psychology in Clinical Psychology*

Dissertation: "Altruism in psychotherapy: Altruistic acts as an adjunct to psychotherapy"

Committee: Aaron Aviera, Lou Cozolino (Chair), and Elizabeth Laugeson

Proposed January 2017

Defended March 2018

Pepperdine University, Graduate School of Education and Psychology **June 2015**

Los Angeles, California, *Master of Arts in Clinical Psychology, Emphasis in Marriage & Family Therapy*

California Polytechnic State University, San Luis Obispo **June 2009**

San Luis Obispo, California, *Bachelor of Arts, English, Minor, Spanish*

University of Valladolid/ Spanish Language Institute **Summer 2006/2007**

Valladolid, Spain/Cuernavaca, Mexico, *Summer Abroad Program*

HONORS AND AWARDS

Colleagues Grant **September 2015-April 2018**

Academic scholarship at Pepperdine University, Graduate School of Education and Psychology

Colleagues Grant **September 2014-June 2015**

Academic scholarship at Pepperdine University, Graduate School of Education and Psychology

CLINICAL EXPERIENCE

Peer Consultant **September 2017-April 2018**

Pepperdine Community Counseling Clinic Irvine, California

Supervisor: Joan Rosenberg, PhD

- Provide consultation and mentorship to first year students
- Watch video tapes of clinical sessions and provide feedback in weekly meetings
- Review written intakes and provide feedback regarding case conceptualizations, diagnoses, and basic writing skills
- Assist students with case conceptualizations, treatment planning, and developing treatment goals
- Assess progress and areas of continued growth that need to be addressed with their main clinical supervisor
- Participate in students' group supervision to review sessions, offer constructive comments, and engage in group process

Pre-Intern **August 2017-June 2018**

VA Long Beach Healthcare System Long Beach, California

Supervisor: Michael Ganz, PhD

Rotation 1 (August to February): Couples and Family Therapy

- Provided couples therapy to veterans and their partners/spouses, utilizing empirically based practices such as Emotionally Focused Couples Therapy (EFCT) and Cognitive Behavioral Therapy (CBT)
- Led and co-led group therapies, including Secure Foundations: Couples Growing Together and Scream-Free Parenting

- Conducted intakes and develop treatment plans and case conceptualizations for couples based on attachment theory, relational psychodynamic theory, and other theories as appropriate
- Shared psychoeducation regarding communication skills based on Gottman's approach and Scuka's Relationship Enhancement Therapy
- Administered and scored various baseline measures and additional measures throughout therapy to determine efficacy of treatment (please see list of measures below)

Supervisor: *Dr. Camila Williams, PhD*

Rotation 2 (February to June): Women's Mental Health Clinic

- Provided psychological services to female veterans, including individual, group, and couples therapy to address posttraumatic stress disorder, experiences of military sexual trauma, LGBT concerns, mood disorders, anxiety disorders, relational difficulties, personality disorders, and other diagnoses
- Utilized empirically based practices, such as Cognitive Behavioral Therapy for Depression (CBT-D), Cognitive Processing Therapy (CPT), and Seeking Safety in individual and group formats
- Facilitated group therapies based on the current needs of female veterans, such as PTSD Recovery Skills Group, Mood Group (CBT for Depression and Anxiety), Interpersonal Relationships Skills, Anger Management, and Trauma Skills
- Administered and scored various assessments (please see list of measures below)

PsyD Trainee

September 2015-April 2018

Pepperdine Community Counseling Clinic Irvine, California

Supervisor: *Joan Rosenberg, PhD*

- Conducted intakes to gather information, assign diagnoses, and create treatment plans for clients to address complicated bereavement, borderline personality disorder, adjustment disorder, posttraumatic stress disorder, and other diagnoses
- Provided individual, couple, and family therapy to facilitate communication, decrease anxiety, decrease depression, and challenge maladaptive beliefs
- Assisted clients with additional resources related to housing, crisis hotlines, medical care, support groups, and financial assistance
- Provided psychoeducation to clients regarding suicide, loss, coping skills, mindfulness, responses to trauma, support systems, and family systems
- Assessed clients for suicidal ideations, intrusive thoughts, plans, intentions, or means when needed to ensure client safety
- Utilized baseline measures and recurrent assessments in order to determine the effectiveness of therapy (please see list of measures below)

Practicum Student

July 2016-July 2017

UCI, Department of Psychiatry and Human Behavior Irvine, California

Supervisor: *Christy Hom, PhD*

- Assisted with intakes for children, adolescents, and adults to gather information and to determine which assessments will be conducted to provide recommendations and diagnoses
- Administered and scored various neuropsychological and psychodiagnostic assessments (please see list of measures below)
- Wrote neuropsychological reports based on test data, intake, and past records that include an assessment of the client's functioning, diagnoses, treatment recommendations, and academic accommodations as needed
- Engaged in feedback sessions with clients and their families to explain the reports, address the diagnoses, and share treatment recommendations

Practicum Student**July 2017***Rich & Associates, Friendship Island: A Social Skills Summer Camp Los Angeles, California**Supervisor: Seth Shaffer, PhD*

- Acted as a camp counselor for children ages 5-11 in an intensive social skills camp that focused on joining in groups, dealing with teasing, learning non-verbal and verbal social cues, emotional regulation, mindfulness, and problem-solving
- Implemented, monitored, and measured individual behavioral plans for three to five children who had social problems related to autism spectrum disorder, attention deficit/hyperactivity disorder, anxiety disorders, and mood disorders
- Ran small groups within the camp to teach and practice social skills, such as joining a conversation or teasing the tease
- Wrote behavioral summaries/report cards for parents that included how often children met their goals each day and recommendations for parents to help maintain positive changes

Mental Health Worker**June 2015-June 2016***Exodus Recovery, Psychiatric Healthcare Facility, Culver City, California**Supervisor: Richard Davis, MFT*

- Monitored patients for safety and conduct observational rounds every fifteen minutes to ensure that all patients were safe
- Provided milieu therapy by interacting with patients and engaging in recreational activities throughout the day
- Helped clients engage in daily self-care activities, including exercising, showering, eating meals, and attending therapy
- Contacted housing resources and community mental health clinics to facilitate discharge plans for patients before they left the hospital
- Provided psychoeducation to patients regarding diagnosis, treatment options, housing options, medications, and the therapeutic process

MFT Practicum Student**September 2014-August 2015***Exodus Recovery, Psychiatric Healthcare Facility, Culver City, California**Supervisor: Richard Davis, MFT*

- Conducted psychosocial assessments of in-patients to facilitate treatment plans
- Ran group sessions for in-patients, focusing on positive coping skills and identifying triggers
- Engaged in-patient and out-patient clients in individual therapy sessions to decrease symptoms and improve adaptive emotional and behavioral functioning
- Participated in probable cause hearings on behalf of the hospital to determine if patients continued to meet criteria for involuntary hospitalization
- Facilitated discharge plans by researching housing options and community mental health resources for patients

RESEARCH EXPERIENCE**Research Trainee****March 2017-May 2018***UCI, Department of Psychiatry and Human Behavior with Columbia University Medical Center, Kennedy Krieger Institute/Johns Hopkins University, Massachusetts General Hospital/Harvard University, and University of North Texas Health Science Center Irvine, California**NIH's Biomarkers of Alzheimer's Disease in Adults with Down Syndrome Initiative**Supervisor: Christy Hom, PhD*

- Conduct neuropsychological assessments on individuals with Down Syndrome as part of a NIH research study to determine factors that identify Alzheimer's Disease

- Assist with intakes for adults with Down Syndrome and their families to gather information and to determine which assessments will be conducted
- Administer and score various assessments (please see list of measures below)

Research Assistant

September 2013-Present

Pepperdine University, Graduate School of Education and Psychology Los Angeles, California

Supervisor: Lou Cozolino, PhD

- Edited published books for content, style, and voice, and contributed chapter exercises to assist readers in applying the material
Attachment Based Teaching: Creating a Tribal Classroom (Lou Cozolino, 2014)
Why Therapy Works: Using Our Minds to Change Our Brains (Lou Cozolino, 2015)
The Neuroscience of Psychotherapy, 3rd edition (Lou Cozolino, 2017)
Timeless: A Lifelong Journey from Attachment to Compassion and Wisdom (Lou Cozolino, 2018)
- Research various topics and compile literature reviews, including but not limited to empathy, compassion, meditation, trust, and moral judgment, for use in future publications
- Assist with outlines for new projects and publications, which include book proposals, article outlines, and lecture ideas

Research Assistant/ Social Media Representative

April 2014-July 2015

UCLA Program for the Education and Enrichment of Relational Skills (PEERS) Los Angeles, California

Supervisor: Elizabeth Laugeson, PsyD

- Scored and verified pre- and post-intervention outcome data collected from young adults with autism spectrum disorder, ADHD, depression, anxiety, and other socio-emotional difficulties participating in the caregiver-assisted, evidence-based social skills intervention PEERS
- Assisted the Clinic Coordinator with participant phone interviews, eligibility appointments, and the collection of research measures to monitor the intervention's efficacy and effectiveness
- Collected, reviewed, and entered scores into database to assess the effectiveness of the PEERS intervention
- Assisted with the administration of outcome measures to assess the intervention's efficacy and effectiveness
- Managed the UCLA PEERS Clinic Facebook page and the UCLA PEERS Clinic website to publicize clinical services for families, training opportunities for mental health professionals, publications and tools for the public, and various clinic events
- Conducted intakes for adolescents and young adults and administer outcome measures

PUBLICATIONS & PRESENTATIONS

Cozolino, L., & Santos, E. (In press). *Forme di altruismo guidato e psicoterapia/Altruism as a therapeutic tool* (S. Iacone, Trans.). In G. Ruggiero & C. Meini (Eds.), *Relazioni e sinapsi*. Franco Angeli: Italy.

Santos, E., Hopkins, J., Ferrendelli, C. & Laugeson, E. (August 2015). *Understanding the relationship between social anxiety and bullying against others in adolescents with autism spectrum disorder*. Poster presented at the American Psychological Association (APA) Conference, Toronto, Canada.

Cabrera, M., Santos, E., Sanchez, J., Bolourian, Y., & Laugeson, E. (August 2015). *Understanding the relationship between dating anxiety and communication skills in young adults with autism spectrum disorder*. Poster presented at the American Psychological Association (APA) Conference, Toronto, Canada.

Ferrendelli, C., Hopkins, J., Santos, E., & Laugeson, E. (August 2015). *Distinct perceptions of social functioning and treatment outcome across parents and adolescents following the UCLA PEERS*

intervention. Poster presented at the American Psychological Association (APA) Conference, Toronto, Canada.

Santos, E., Hopkins, J., & Laugeson, E.A. (May 2015). *Understanding the relationship between social anxiety and bullying against others in adolescents with autism spectrum disorder*. Poster presented at the International Meeting For Autism Research (IMFAR), Salt Lake City, Utah.

Cozolino, L., & Santos, E. (2015). Why we need therapy and why it works: A neuroscientific perspective. In D. Miehls & J. Applegate (Eds.), *Neurobiology and mental health clinical practice: New directions, new challenges*. New York, NY: Routledge.

Santos, E., Hopkins, J., & Laugeson, E.A. (November 2014). *Understanding the relationship between social anxiety and bullying against others in adolescents with autism spectrum disorder*. Poster presented at the Association of University Centers on Disabilities (AUCD) Annual Conference, Washington, DC.

Cozolino, L., & Santos, E. (2014). Why we need therapy and why it works: A neuroscientific perspective. *Smith College Studies in Social Work*, 84(2-3): 157-177. DOI:10.1080/00377317.2014.923630

TEACHING EXPERIENCE

Teaching Assistant

September 2016–April 2018

Pepperdine University, Graduate School of Education and Psychology Los Angeles, California

Supervisors: Carolyn Keatinge, PhD & Susan Himelstein, PhD

Course: Cognitive Assessment

- Graded and corrected scoring on cognitive measures, such as Beery-Buktenica Developmental Test of Visual-Motor Integration, Sixth Edition (VMI), Benton Judgment of Line Orientation- Form H (JLO), Wechsler Intelligence Scale for Adults, Fourth Edition (WAIS-IV), Wechsler Intelligence Scale for Children, Fifth Edition (WISC-V), and Wide Range Achievement Test 4 (WRAT4)
- Assisted with practical labs and provided students with feedback as they practice administering assessments

Course: Personality Assessment

- Graded and corrected scoring on personality measures, such as Minnesota Multiphasic Personality Inventory, Second edition (MMPI-2), NEO Personality Inventory-Revised (NEO PI-R), Rorschach Ink Blot Test, Rotter Incomplete Sentence Blank (RISB), and Thematic Apperception Test (TAT)
- Assisted with practical labs and provide students with feedback as they administer assessments

Course: Advanced Assessment

- Graded and corrected scoring on personality and cognitive measures, such as those listed above
- Facilitated practical labs by engaging students in mock assessments and providing feedback to students as needed

Teaching Assistant

September 2013–April 2018

Pepperdine University, Graduate School of Education and Psychology Los Angeles, California

Supervisor: Lou Cozolino, PhD

Course: Physiological Psychology

- Clarified materials for students when questions arise for a deeper understanding of the information
- Met individually with students to prepare for exams and to review graded exams
- Generated test questions to determine the students' understanding of the materials

Course: Techniques for Counseling and Psychotherapy

- Created lecture PowerPoint presentations to convey materials to the students
- Met individually with students to discuss materials, prepare for exams, and review scored assignments
- Proctored and graded student exams

PROFESSIONAL EXPERIENCE

Faculty Services Coordinator

October 2012-August 2013

Faculty Services Associate

October 2009-October 2012

Southwestern Law School Los Angeles, California

- Supervised and trained new Faculty Services Assistants to increase the department's efficiency
- Maintained department website to optimize student and faculty use
- Obtained permission to use copyrighted materials in publications
- Edited manuscripts and textbooks prior to publication
- Compiled and edited printed materials for dissemination to students

PROFESSIONAL CERTIFICATIONS

PEERS Certified Provider

November 2014

UCLA Program for the Education and Enrichment of Relational Skills (PEERS) Clinic

Attended a 4-day training to implement the PEERS for Adolescents intervention for adolescents with autism spectrum disorder, ADHD, depression, anxiety, and other socio-emotional difficulties in a clinical setting

Trauma-Focused Cognitive-Behavioral Therapy

October 2014

TF-CBT Web

Certification for completion of online training in cognitive behavioral therapy as applied to victims of trauma to rewrite the trauma narrative and decrease negative symptoms of trauma

ABSTRACT

This study will explore the impact of altruism on the mind, brain, and body in order to investigate the potential value of using guided altruistic behavior as an adjunct to attaining the goals of psychotherapy. There is considerable evidence from religious and social practices across cultures, groups like Alcoholics Anonymous, and epidemiological research that point to the positive physical and psychological effects of helping others. This idea was initially stimulated by findings that demonstrated that altruism stimulates brain regions also important to the processes and goals of successful psychotherapy. It is hypothesized that engaging in altruistic behaviors will stimulate emotions, thoughts, and neurobiological processes that will enhance the therapeutic process from a biopsychosocial model. The relevant literature suggests that there may be a correlation between altruism and achieving the goals of therapy.

Keywords: altruism, brain, neuroscience, psychotherapy

Chapter 1: Introduction

The best way to find yourself is to lose yourself in the service of others.

-Mahatma Gandhi

Altruism, the act of providing for others at a personal expense, has been demonstrated across cultures and throughout human history. Strangers anonymously donate their fortunes to help others. Soldiers sacrifice their lives, not only for their families at home, but also to save the lives of the soldiers standing beside them. In recent years, a man devoted his life to building a pathway through a mountain so that people in his village would have more immediate access to medical care (AFP & MacFarlan, 2015). His wife died because she could not get help in time after an accident due to the time it took to travel around the mountain; this man decided to sacrifice his time and effort so that others would not suffer similar losses. Over 22 years, he slowly chipped away at the mountain, using only small hammers and chisels. His sacrifice, his altruistic act, allowed others in his village to reach medical help, saving countless lives.

These acts demonstrate that humans regularly sacrifice their personal resources and even their lives to assist others. And when they do so, they experience feelings of happiness, well-being, and a deeper sense of being engaged with the world. When others receive acts of altruism, they experience similar feelings in addition to appreciation, gratitude, and connection with others. The emotional benefits of altruism suggest that humans evolved to benefit from generosity, caretaking, and nurturance because these acts enhance the overall survival of the group. These benefits are in stark contrast to the symptoms of anxiety, depression, and social isolation for which so many seek psychotherapy.

Altruistic acts are tied to social emotions, such as empathy and compassion, which are based on our ability to connect, resonate, and attune with others (Decety & Jackson, 2004; Moll et al., 2006). Empathy requires an emotional and cognitive connection with others (Pfaff, 2015),

and this connection facilitates altruistic behaviors. In addition, sympathy allows humans to feel sorry for other humans, which promotes altruism (Preston, 2013). Sympathy and empathy both evolved from caregiving behaviors that are exhibited between mothers and their children. These social emotions are organized by a neurobiological infrastructure or a set of circuits within the brain that drive parental caretaking connections and behaviors; based on the benefits of behaving altruistically, it may be that the neurobiological mechanisms for altruism demonstrate considerable overlap with those areas dedicated to parental caretaking, from which they likely evolved. These emotions also provide individuals with rewards when they engage in altruistic behavior (Gintis, 2016). In addition, humans feel negative feelings, such as guilt and shame, when they engage in selfish behaviors that do not benefit the group.

Altruism in Other Animals

The broad range of altruistic behaviors seen in contemporary humans have been conserved during evolution from similar behaviors observed in chimps, apes, and other primates toward troop members and strangers (Warneken, Hare, Melis, Hanus, & Tomasello, 2007; de Waal, 2008). Just like humans, other primates attach to and nurture their children, share their food, engage in pair bonding and group loyalty, and help others in times of danger and deprivation. Primates not only engage in altruistic behaviors, but they appear to enjoy watching others benefit from receiving altruistic behavior (Pfaff, 2015).

In one study, two chimpanzees received tokens that they could exchange for food: one color token provided food for one monkey and a different color token provided food for both monkeys (Pfaff, 2015). The chimpanzees used the token that provided food for both monkeys significantly more often than the selfish token. Altruistic behavior among all primates is a clear

reflection of the forces of natural selection that shape humans brains to accomplish the dual functions of self and other survival – a hallmark of highly social species.

Furthermore, many other mammalian species exhibit altruism. In one study, a female rat who was pregnant or a recent parent was placed in a box and allowed to see rat pups that she was not related to (Preston, 2013). These pups were alone. The female rat was able to retrieve one isolated pup at a time by pressing on a bar. The rat continued to press the button for hours until the experimenters ended the experiment, as they were too tired to continue; she saved hundreds of pups from isolation. In another instance, a young boy fell into a gorilla enclosure at a zoo; a female gorilla picked up the young boy, protected him from another gorilla, and rocked him gently as she carried him to the door where staff entered her enclosure. Apes, dogs, and dolphins also exhibit helping behaviors toward others; apes even console other apes when they are in distress. The many examples of altruistic behavior across the animal kingdom reflect its deep evolutionary history and suggest underlying genetic and biological mechanisms that have likely been conserved in humans.

Altruism and Recovery

Certain forms of psychological interventions already utilize altruism to facilitate psychological healing. In Alcoholics Anonymous (AA), helping others is an essential part of the healing process. The first tradition of the program states that the common welfare of the group must come first (Alcoholics Anonymous, 2015). The program also recommends that participants act as sponsors for newer members. As sponsors, individuals help guide newer members through the twelve steps of recovery. This part of the recovery process benefits both individuals. The sponsor receives the benefits of being altruistic, which include improved emotional regulation, more self-reflection, and improved social functioning and social connectedness; the sponsored

individual enjoys the benefits of receiving an act of altruism, such as improved interpersonal relationships, positive emotions, a shared sense of common experience, and hope. Members of AA are also intended to spread the message of the 12 steps to others in need as part of Step 12 of their recovery.

In addition, there are hundreds of other support groups and group therapies that demonstrate the healing benefits of altruism. People significantly benefit from knowing that others are available and willing to help them through difficult times (Mallinckrodt, 1989). Although the support is important, people appear to benefit the most from nurturing others. Providing support to others provides the same psychological benefits as receiving social support. Within these groups, people heal from altruistically helping others through difficult times in their lives. Furthermore, altruism shows up in other therapies, such as Compassion-Focused Therapy and gratitude based interventions. Therapy often focuses on improving emotional regulation, increasing self-insight and understanding of the self, and improving interpersonal relationships. It appears that altruism helps achieve these goals.

The prevalence of altruism in existing therapies supports the theory that deeper genetic and biological mechanisms are at work, which may explain the empirical and anecdotal evidence of altruism's benefits, such as decreased depressive symptoms and increased well-being (Post, 2005). If altruism activates the same networks that clinicians are trying to stimulate in therapy, it might enhance the therapeutic process and facilitate clients reaching their therapeutic and personal goals. It may also facilitate the client's ability to generalize the benefits of therapy to other interpersonal relationships and group settings. For the purposes of this proposal, the term "guided altruism" will be used to define altruistic acts decided upon by the client and therapist that a client would engage in as an adjunct to psychotherapy.

Research to determine the possible benefits of using guided altruism to further positive therapeutic change would be both interesting and potentially beneficial for clients. If research can show a positive correlation between guided altruism and positive therapeutic outcomes, one can only speculate that the underlying mechanisms of action lie in neurobiological substrates. But if it were possible to measure the effects of altruism on brain activity that would then be followed by psychotherapeutic growth, there would be a deeper confidence that these correlations may be causal.

Due to limitations of time and resources, the proposed study will explore the available literature on altruism and its potential to enhance the therapeutic process by activating brain regions associated with positive therapeutic change. Toward that goal, the present study will explore the sociobiological evolution of altruism, the neurological systems it activates, and how it could be leveraged to increase the benefits of therapy.

Chapter 2: Literature Review

Examples of altruism are apparent everywhere. In the United States, 60% of individuals report giving money to charity, and 65% stated that they helped a stranger within the last month (Ramesh, 2010). Documented acts of extraordinary altruism include individuals who give their kidneys to complete strangers in order to help them (Herbert, 2014). People across the country undergo surgeries and undertake certain risks in order to provide an altruistic act to individuals that they have never met. Hundreds of women in Canada volunteer their bodies to carry children for infertile couples in various countries (Cribb & Jarratt, 2016). They do so as volunteers, and they are only paid for medical expenses, food, and transportation related to the pregnancy. It is a kindness that they provide to couples that cannot afford surrogates in their own countries.

The Internet has allowed people to connect to and help random people across the world. There was a picture posted on the Internet of a discontinued shirt that a young girl with autism spectrum disorder was fixated on (Yam, n.d.). The young girl's mother asked for help to find this shirt as the girl's current shirt was too worn down; strangers sent 157 shirts to this young girl, and Target agreed to start producing the shirt again in larger sizes. These acts of kindness demonstrate people behaving altruistically toward a total stranger without expectation of receiving something in return.

In Australia, a group of young boys saw an older gentleman struggling with a chore outside. The young boys stopped to help the gentleman finish moving his woodpile (Moran, 2016). In Virginia, a young child noticed a homeless man sitting on the street; because she thought he was hot and thirsty, she gave him money out of her own purse in order to help him (Pittman, 2016). There is a man in Nigeria who builds houses and offers them rent-free to homeless individuals (Dixon, 2016). He never lets people on his land go hungry, and he checks

on all of his tenants each morning. In addition, this man has his own family to support. However, he still focuses on helping others, providing hope and a place to stay for many individuals.

In Missouri, a young girl found a scratch-off lottery ticket that was worth \$100 dollars (Golgowski, 2016b). Instead of keeping the money for herself, the seven-year-old decided to spend the money on food for homeless individuals; she spent all of the money on canned goods and donated them to her school's food drive. A young child recognized others in need and acted altruistically to help others. In Washington, a house was vandalized with racist graffiti while the owners were away on vacation (Golgowski, 2016a). The community came together and cleaned up the graffiti before the owners returned home so that they did not have to see such hateful messages on their home. Officers, a youth football team, and others rallied together to support a family in need and to fight against racism and hate.

Even when individuals face their own struggles, they find ways to help others. A homeless man found a wallet in the trash filled with credit cards and a woman's identification card, which showed that she was visiting from Paris (Harris, 2013). The man went around to several hotels in the area, spending his time and energy to find the owner of the wallet; he eventually found the hotel where she was staying and returned the wallet to its rightful owner. Not only did he use his resources to help someone else, but the hotel also returned his act of kindness. In response to this man's generosity, the hotel allowed him to stay as a guest for a few days. People are willing to help others, even when faced with their own troubles, and others respond to these acts of generosity with warmth and kindness.

At Target in North Carolina, a young teen went in looking to purchase a clip on tie for an upcoming job interview (Earl, 2015). He was disappointed to find that the store did not have any, but a Target employee went out of his way to help. The employee picked out a tie for the young

man, taught him how to tie it, and helped him find answers to tough interview questions. The Target employee went so far as to teach the young man how to properly shake hands. Although he was at work, this employee took the time to help a young man succeed with his job interview.

The news, daily experiences, and simple interactions are filled with these altruistic moments. These are not anomalies, but just a few examples of everyday human interactions that involve altruism. There are so many individuals helping others in need at their own expense, and they appear in every culture. These acts of altruism often go unnoticed, as most people focus on the negative interactions between people (Fiske, 1980). It appears that humans are universally capable of and encouraged to engage in altruism toward others. Given that humans demonstrate altruism so frequently, it seems surprising that people often view humans as selfish. Perhaps the human need to dislike selfishness so much represents a deep understanding that altruism is the necessary alternative. It appears that there is an underlying instinct that protects individuals from harming others or engaging in selfish behaviors as that inevitably harms the group.

Furthermore, studies have shown that individuals engage in altruism when future interactions with the other individual are improbable (Pfaff, 2015). This suggests that altruism does not result from social pressures or assumptions that the act will be reciprocated. Instead, it appears to be a fundamental aspect of human nature that emerged early in human existence.

Emergence of Altruism

Currently, what drives altruistic behavior in humans is unknown. However, research shows specific genes that are important to mating and parenting are also needed for basic social skills (Pfaff, 2015). This includes the ability to learn from people that individuals are not related to, which requires attuning to and modeling unrelated others. This facilitates cooperation between individuals, a task that requires altruism and trust. Other research shows evidence that

Hominids demonstrated some ability to take the perspective of others and to feel their pain, further indication that altruism has been preserved since early in human history. Although there are personal costs associated with altruism, natural selection continues to ensure that this trait is passed on through the generations, which may demonstrate the necessity and importance of altruism in human societies.

Cultural Prevalence of Altruism

In addition to being seen in every day kindnesses, altruism shows up throughout cultural and religious beliefs. Children are taught early to share with others, and they begin to engage in spontaneous acts of altruism at an early age. Humans generate laws that punish selfish acts (Gintis, 2016; e.g. prison time for stealing) and laws that reward altruistic acts (e.g. tax benefits for donations), demonstrating its influence over the legal system. Humans value altruism so much that it appears in religious and spiritual beliefs around the world. Mahayana Buddhism, developed in India, focuses on finding enlightenment for all. Individual enlightenment, which entails wisdom, compassion, and spiritual knowledge, is not possible because all humans are connected (Silk, n.d). The Bible, the Torah, and the Quran all have many passages about helping neighbors, giving to others, and caring for the ill (Pinker, 2011). These faiths also denounce selfishness and acts that harm others. In Buddhism, the concept of Metta emphasizes kindness, goodwill, and benevolence (Gupta, 2013).

Human laws, morals, and religions all seem to reflect a deep sense of compassion and an innate desire to help others through altruistic acts. Throughout the years, it appears that a natural impulse in humans toward altruism has seeped into cultural and religious beliefs, a reflection of how long ago humans evolved to be altruistic. The increasing dependence on pro-social behavior for human survival may be a primary reason for the emergence of the golden rule of Judaism,

Christianity, and Islam over the last few millennia. As tribes evolved into city-states and nations, increasing group size necessitated increasing levels of adaptation and cooperation with others (Wilson, 2012), which is reflected in spiritual beliefs and legal system.

Sociality often requires altruistic behavior and a willingness for individuals to make personal sacrifices to assist others (Le Galliard, Ferriere, & Dieckmann, 2005). In addition, it appears that altruism was often needed in order to help tribes that were more stationary than nomadic. In order for tribes to grow and reach larger sizes, they began to rely on agriculture and ranching. This required tribes to remain stationary and to give up their nomadic lifestyles. Altruism helped tribes develop by facilitating less nomadic lifestyle via cooperation and trust.

Groups often value altruism and reward individuals who engage in such behaviors. Certain studies show that groups will give the highest social status to individuals who are the most altruistic (Hardy & Van Vugt, 2006). This demonstrates how much groups value altruism. As the personal cost of altruism increases, the benefits related to social status also increase. The more a person is willing to sacrifice, the more likely they are to receive social benefits from others. Groups and cultures recognize and reward acts of altruism, which shows a deep understanding of how important altruism is to facilitate group interactions. Communities favor cooperation and kindness, which indicates that nature also favors these traits (Pfaff, 2015). They are continually demonstrated to have value.

The norms related to altruism become internalized by members of groups and societies. Successful societies also promote honesty, fairness, cooperation, sympathy for others, and group welfare by utilizing altruistic norms (Gintis, 2016). Because altruism enhances cooperation and fitness in groups, research suggests that altruism will proliferate in human societies. There may

be genetic components that support altruism, and prosocial norms appear powerful enough to overcome selfish genes that may appear (Pfaff, 2015).

Altruism in Action

There appear to be several explanations for how altruism benefits people. Altruism allows for improved and increased social integration, it distracts from a person's personal problems, and it provides a sense of meaning; furthermore, altruism increases a person's feelings of competence and efficacy, and it generally improves a person's mood (Post, 2005). Individuals feel happy, cultivate loving feelings, and experience a sense of serenity when they behave altruistically. Although there are benefits that occur when a person receives altruism, there are more benefits associated with behaving altruistically toward others. Given how much energy humans put into their individual survival, it is interesting to note that the body rewards giving away resources more than receiving resources. Because there is a long history of benefits associated with altruism, it makes sense that it has already been incorporated into various forms of therapy. Thus, it provides opportunities to improve a client's quality of life by utilizing altruism as an adjunct to psychotherapy.

By decreasing mental disturbances and negative thoughts, altruism may benefit individuals with anxiety or depression. Individuals may also see improvement from altruism because it has interpersonal benefits as well. Improving interpersonal relationships has been associated with numerous physical and psychological benefits (Cozolino, 2017). Clients will likely see better overall health as altruism has many physical benefits as well. This will increase their quality of life, and it will allow them to avoid stress and unnecessary pain.

The Benefits of Altruism for Physical Health and Longevity

There are extraordinary benefits that come from altruism, both for the giver and the receiver. The physical benefits of behaving altruistically include increased health (Tankersley, Stowe, & Huettel, 2007) and improved immunological functioning (Post, 2005). In addition to the physical benefits, this improves an individual's quality of life as they are not as affected by illnesses as often as others. Furthermore, increased longevity is associated with giving to others, especially family members (Brown, Consedine, & Magai, 2005). The physical benefits suggest that human biology supports altruism, as the personal cost of behaving altruistically is rewarded with better physical health, improved functioning of the immune system, and increased longevity.

Table 1

Physical Benefits Associated with Altruism

- Better physical health
 - Improved immunological functioning
 - Increased longevity
-

The Psychological Benefits of Altruism

There are many psychological benefits associated with altruism. Altruistic people have fewer mental disturbances (Brown et al., 2005; Nakamarua & Iwasab, 2006; Post, 2005) and decreased negative thoughts (Post, 2005), which are frequently associated with anxiety. These benefits correlate with psychological health by reducing anxious and depressive symptoms related to mental disturbances and negative thoughts. In addition, research studies have demonstrated that individuals who spent more of their income on gifts for others and donations were generally happier than individuals who spent more money on themselves (Pfaff, 2015).

Altruistic individuals are also seen as more attractive by romantic partners (Hardy & Van Vugt, 2006), increasing their ability to find mates. Furthermore, altruistic people have more friends that are altruistic (Le Galliard et al., 2005), which improves their quality of life and social support. When individuals engage in altruism, there is a decrease in depressive symptoms; although there are several benefits associated with receiving altruism, giving help (altruism) correlates with better mental health (Post, 2005).

Behaving altruistically generates loving feelings and a sense of happiness that is associated with well-being (Post, 2005). Altruistic acts have also been associated with increased feelings of self-worth and effectiveness (Pfaff, 2015), indicating that helping others transforms how an individual views himself. Knowing that a sense of altruism exists in the world improves a person's outlook, his optimism, and his ability to trust others. All of these likely work together to improve an individual's perspective of the world and of himself. This experience of altruism has numerous therapeutic benefits.

Research demonstrates that altruism has been shown to increase positive moods (Harris, 1977) and decreases negative thoughts (Post, 2005), which are often associated with anxiety and depression. Other studies demonstrate that altruism is associated with fewer symptoms of depression, anxiety, and somatization. Acts of altruism, such as volunteering, decrease depression levels and an increase a person's sense of well-being (Jenkinson et al., 2013), which includes hope, happiness, and feeling good about oneself (Post, 2005). Altruism promotes friendships, which increase quality of life and psychological well-being (Pfaff, 2015). Other research shows that altruism correlates with improved self-esteem, positive affect, and morale (Post, 2005).

Table 2

Psychological Benefits Associated with Altruism

<u>Mental</u>	<u>Quality of Life</u>
<ul style="list-style-type: none">• Increased well-being• Have fewer mental disturbances• Decreased negative thoughts	<ul style="list-style-type: none">• Higher life satisfaction• Stronger will to live• Viewed as more attractive by potential romantic partners• Have friends that are more altruistic

Altruism and Psychotherapy

Altruism innately exists in psychotherapy, numerous twelve-step programs, group therapies, compassion-focused therapy, and gratitude based interventions. Although therapists are paid for their services, there is a deep sense of altruism that exists between clinicians and their clients. Therapists and clinicians care about, advocate for, and attempt to attune with their clients (Cozolino, 2017). There has been much dispute regarding various theoretical orientations, but research has consistently proven that the interpersonal relationship between client and therapist is the most effective factor for the client's improvement (Okiishi, Lambert, Neilsen, & Ogles, 2003). Clients benefit from feeling cared about, from having someone to listen to them, and from feeling supported more than specific interventions or orientations. This demonstrates the importance and impact that altruism can have.

In Alcoholics Anonymous (AA), a widely used recovery program, individuals focus on helping others in order to facilitate their own healing (Alcoholics Anonymous, 2015). Sponsors utilize their own experiences to help other members and to give back. A key step in the recovery process includes spreading the message of AA to others so that they may benefit from the twelve-step program. The traditions of AA also reflect the deep human history of placing the survival of the group above the individual, stating that the welfare of the group must come first. It appears that AA incorporates the healing effects of behaving altruistically toward others.

There are hundreds of support groups and group therapies that provide support and coping skills to increase an individual's functioning. Groups are often healing for the members because they provide support. One of the most helpful aspects of group therapy is a reliable alliance with others that allows an individual to know that others will help them in a crisis (Mallinckrodt, 1989). In addition, research has shown that group members benefit from the opportunity to provide nurturance to others, which provides the same psychological coping benefits as other forms of social support. Individuals who participate in group therapy receive psychological benefits from being able to help others. This act of altruism towards people with similar experiences is one of the mechanisms of action in group therapy that provides therapeutic benefits.

Compassion-focused therapies focus on developing compassion for others and for the self (Gilbert, 2009). Compassion is often the motivating feeling behind acts of altruism. In order for individuals to behave altruistically, they have to recognize the suffering of another person and have a desire to end the suffering, the definition of compassion. Compassion-focused therapy does not focus on altruism, but it does enhance the motivating emotion behind altruism. In one study, compassion training was correlated with increased altruistic behaviors, which corresponded with changes in brain regions that are related to emotional regulation and social cognition; this indicates that compassion can be cultivated and that increased altruism is associated with neural systems responsible for understanding the pain that others are experiencing, emotional control, and executive control (Weng et al., 2013). In addition, psychotherapy has interventions that focus on journaling received acts of altruism (Emmons & Stern, 2013). Individuals also meditate on acts of kindness that they have received to enhance their progress in psychotherapy.

Naikan therapy incorporates altruism in a different way. This type of therapy argues that distress arises when individuals have to suppress feelings of guilt, which is created when individuals behave in ways that are self-centered (Reynolds, 1980). According to this theory, psychological health is achieved when individuals can focus on grateful self-sacrifice as this liberates energy previously used to suppress guilt. Therefore, individuals engage in self-sacrifice in order to live a full life.

In psychodynamic therapies, altruism is considered a mature defense (Thompson & Cotlove, 2013). Defenses serve to protect individuals from anxiety, and they are characterized as immature, neurotic, or mature. However, certain defenses are adaptive and others are more immature and less effective at regulating anxiety. Mature defenses are considered more adaptive, healthy ways of coping with anxiety and unpleasant feelings. Altruism is a mature defense that allows individuals to achieve an altruistic ego ideal, as it requires individuals to empathize with others.

Based on the research, it appears that altruism has been successful in these therapies because it increases empathy, emotional regulation, and self-awareness. It also improves social functioning and social connectedness as well as decision-making. Altruism appears to improve attunement, attachment, and moral behaviors. All of these benefits correlate with the goals of psychotherapy.

When Altruism Is Required

Recently, prisons have implemented programs that have prisoners training shelter and service dogs as part of their rehabilitation, and these programs have demonstrated success via a decreased number of infractions and improved social skills (Strimple, 2003). Prisoners who participated also demonstrated increased self-esteem and decreased symptoms of depression

(Strimple, 2003). Other programs have implemented the use of required volunteerism instead of prison time. In one random assignment study, individuals who received prison time instead of community service time were more likely to be arrested again, and they developed increasingly unfavorable attitudes toward the criminal justice system compared to those who volunteered (Killias, Aebi, & Ribeaud, 2000).

In education settings, certain schools require students to volunteer in order to complete their degree. When volunteering is required, it generally has no negative impact on the quality of their experience, subsequent civic engagement, or attitudes on philanthropy (Pancer, Brown, Henderson, & Ellis-Hale, 2007). However, if younger students feel too much external control, they are less likely to volunteer in the future. The existing research suggests that when altruism is required, it can be beneficial, and it does not result in negative consequences.

This indicates that altruism, even when required or assigned as a task, offers benefits to the individual. Moving forward, this provides valuable information about using altruism as an adjunct to psychotherapy. Altruism would be part of the therapeutic process, and there would be benefits to the client as well as the individuals that they are assisting. Despite the personal gains associated these types of altruism, the benefits remain the same. This demonstrates that guided altruism would offer the same benefits to individuals in therapy as altruism, even though these tasks would provide mutual benefit.

Research Hypotheses

There are three common goals of psychotherapy across many theoretical orientations. The first goal is to improve emotional regulation for clients via a safe therapeutic relationship and a wide variety of therapeutic techniques (Miller, Duncan, & Hubble, 1997). The second goal is to help clients develop a safe internal space that allows for increased self-insight and

emotional awareness. Third, clients and therapists work together to facilitate adaptive interpersonal relationships through a focus on a secure therapeutic alliance and changes in behaviors and perspectives with family, friends, and coworkers. Based on the brief literature review above, it appears that altruism would assist in achieving the goals of psychotherapy by helping individuals achieve similar improvements through biological, psychological, and social processes.

Guided Altruism in Psychotherapy

Currently, there is no research that directly connects altruism, brain changes, and psychotherapeutic outcomes. However, based on an initial review, there appears to be a connection between the three. With a foundation in the available research and studies, it is hypothesized that guided altruistic behavior will stimulate the brain, mind, and body in ways that will enhance psychotherapeutic outcomes.

Successful psychotherapy significantly influences how people experience themselves. Therapy helps people to better understand belief perseverance and attribution biases, allowing clients to see themselves and others more authentically (Cozolino, 2010). Successful therapy also allows clients to shift their unconscious anxieties, triggers, and fears into the conscious realm so that they can be addressed and treated; this facilitates a person's ability to understand underlying issues. Clients will be better at understanding their own fears, desires, and motivations through this process, increasing their understanding of themselves. Therapy, when it is successful, changes how people experience themselves and the world.

Therapy of varying orientations has also been associated with a decrease in symptoms related to depression, posttraumatic stress disorder, anxiety, and numerous other disorders (American Psychiatric Association, 2013). Therapy also decreases a client's isolation and

increases self-esteem. Changes in therapy also include improved social connections and improved interpersonal relationships (Cozolino, 2010).

Altruistic behavior has similar effects as successful psychotherapy including decreased anxiety, depression, isolation, and meaninglessness in addition to increased well-being, social connection, and self-esteem. Due to the similar nature of these changes, it appears that altruism and psychotherapy serve comparable and complementary purposes. Because of these similarities, there may be similar underlying mechanisms of action within the brain that are related to both processes. Altruistic behavior may stimulate the brain in ways that will enhance psychotherapeutic outcomes. Thus, further research is needed to determine if altruism can be utilized as an adjunct to psychotherapy in order to advance the goals of therapy.

Chapter 3: Review and Analysis Procedures

Here, it is proposed that a thorough analysis of the literature be conducted to in order to determine whether or not it would be beneficial to include altruism as an adjunct to psychotherapy. A qualitative review of the literature is suggested.

Compilation of Literature Review

Inclusion criteria for literature. Peer-reviewed articles, scholarly books, academic presentations, and existing theoretical orientations will be reviewed for information regarding altruism. Research will focus on more recent literature and contributions that span several decades. The review will include the foundations of altruism, neuroscientific findings related to altruism, and neuroscientific findings related to positive therapeutic change. A variety of resources will be examined for information regarding the physical benefits of altruism, the psychological benefits of altruism and the social impact of altruism. Information regarding altruism in existing therapies, the cultural implications of altruism, and how it can contribute to existing therapist will be examined.

Search engines and search terms. First, GoogleScholar will be utilized to conduct a broad search. The following search terms will be used: altruism, benefits of altruism, altruism + brain regions, altruism + neurology, altruism + neuroscience, psychological benefit of altruism, physical benefits of altruism, evolution of altruism, biological evolution of altruism, social evolution of altruism, tribal benefits of altruism, group selection + altruism, compassion therapies, therapies that incorporate giving back, compassion + brain regions, compassion + neurology, compassion + neuroscience, and psychological benefit of compassion. Other terms may be incorporated as needed. Searches will focus on broad themes in the literature.

Second, EBSCO will be used to conduct a narrower search. This will include the following search terms: altruism, benefits of altruism, altruism + brain regions, altruism + neurology, altruism + neuroscience, psychological benefit of altruism, physical benefits of altruism, evolution of altruism, biological evolution of altruism, social evolution of altruism, tribal benefits of altruism, group selection + altruism, compassion therapies, therapies that incorporate giving back, compassion + brain regions, compassion + neurology, compassion + neuroscience, and psychological benefit of compassion. It may be necessary to incorporate additional terms. Searches that utilize this search engine will be restricted to peer reviewed articles within more recent time periods.

Third, the same search terms will be used on PsyInfo to focus on literature within psychological journals. This search will incorporate the following search terms: altruism, benefits of altruism, altruism + brain regions, altruism + neurology, altruism + neuroscience, psychological benefit of altruism, physical benefits of altruism, evolution of altruism, biological evolution of altruism, social evolution of altruism, tribal benefits of altruism, group selection + altruism, compassion therapies, therapies that incorporate giving back, compassion + brain regions, compassion + neurology, compassion + neuroscience, and psychological benefit of compassion.

After the initial reviews, key search words will be checked periodically to ensure that relevant new information is incorporated into the review. All of the articles will be organized by their author, year, and topic. Articles will be separated into electronic folders based on topic. Lastly, the research needs to be analyzed.

Reviewing the Literature

Mendeley will be utilized to review the literature. This application can be used to highlight notes in the articles and to mark relevant quotes from the literature. Notes and quotes related to specific themes will be color-coded based on which section they are relevant to. This information will then be moved into PowerPoint for further analysis and to create an outline for the dissertation.

Organizing and Analyzing Information

The information will be organized in PowerPoint, with each slide focusing on a specific topic, including one slide for each area of the brain associated with altruism. There will also be one slide that focuses on each of the following topics: mechanisms of action related to altruism, the physical and psychological benefits of altruism, natural selection, group selection, evolution of altruism, psychological healing through interpersonal relationships, altruism in existing programs, neurobiological mechanisms of therapeutic change, the neural impact of altruism, and guided altruism in psychotherapy.

Analysis would focus on the similarities and major themes within the literature. In addition, research will focus on the positive therapeutic changes that these brain regions are associated with. Organizing the information will also focus on the similarities between psychotherapy and altruism regarding changes in brain activation and brain regions. Further research will also be done on the evolutionary history of altruism and how it has been utilized in the past to improve psychological health.

Dissertation Organization

PowerPoint will be utilized to organize the information and provide an outline for the dissertation. Then, the dissertation will review the available literature and identify the

information relevant to altruism and its use in psychotherapy. The literature will be synthesized and explain the connections between altruism and areas of the brain associated with therapeutic change. Based on the review of this literature, the research hypothesis will be evaluated and recommendations will be made for further areas of study.

Chapter 4: Results

The focus of the present study was an exploration of guided altruism and how it might be supportive of attaining the goals of psychotherapy. The three general goals of therapy used to organize the data for the purpose of this study were: 1) improving emotional regulation, 2) creating a safe internal space that allows for increased self-insight and emotional awareness, and 3) facilitating adaptive interpersonal relationships, with a focus on building a secure therapeutic alliance, by increasing (a) awareness of others, (b) compassion, and (c) empathic attunement. Although separated here for convenience, these goals are understood to be both interdependent and synergistic. Together, they create a state of brain and mind that decreases symptomatology, facilitates neuroplasticity, and establishes a foundation for adaptive relationships that help achieve the goals of therapy.

Altruistic behaviors have been shown to activate biological, psychological, and social processes that are congruent with the goals of therapy. Biologically, engaging in altruistic behaviors activates many brain systems associated with positive therapeutic change. These systems will be discussed in multiple places as they enhance progress in therapy through different avenues. For example, the default mode network plays an important role in attachment, self-reflection, and creating a safe internal space. Therefore, this region will be discussed based on how it impacts therapy from all of those perspectives. Similarly, the psychological and social benefits will be addressed as they contribute to each goal. Once each goal has been addressed, the interdependent nature of the impacts of altruism will be explored.

Improving Emotional Regulation

On a biological level, altruistic behaviors are associated with various changes in the brain that facilitate emotional regulation. Altruism correlates with an increase in oxytocin, a

neurotransmitter that reduces stress while increasing a sense of well-being and a sense of connection to others (De Dreu et al., 2010; Zak, Stanton, & Ahmadi, 2007). Research shows that altruism is also associated with increased activity in the ventromedial prefrontal cortex, which reduces the stress hormone cortisol (Moll & de Oliveira-Souza, 2007) and increased activity in the orbitomedial prefrontal cortex, an area of the brain that inhibits the amygdala (Moll et al., 2006; Skuse & Gallagher, 2008). Both of these will help regulate emotions. Improved self-regulation and affect regulation during altruistic thoughts and behaviors are also evidenced by increased metabolic activity within the ventrolateral and medial prefrontal cortices, areas of the brain associated with stress management (Frewen, Dozois, & Lanius, 2008). Reducing the body's physiological reactions to stress facilitates emotional regulation by raising the threshold of fight-flight activation and allowing for increased executive control. In addition, activating brain regions that are related to a sense of calm and social connection contributes to the well-being of clients.

By increasing feelings of happiness and well-being and decreasing negative feelings (Post, 2005), altruism helps counterbalance the depression, anxiety, and hopelessness that bring many clients to therapy. Often individuals come to therapy with hope that they will be able to feel happy again. Not only can altruism show clients that an alternative is possible, it can also provide more immediate relief, thereby enhancing their commitment to therapy. By decreasing the intensity of these unpleasant emotions, individuals will be able to address the underlying cause of their non-biological depressive and anxious symptoms.

Additionally, altruism facilitates supportive interpersonal relationships by reengaging individuals with their social environment and increasing their positive interactions (Post, 2005), and these adaptive relationships reduce stress, anxiety, depression, isolation, and emotional

distress all of which contribute to emotional regulation and symptom reduction (Cozolino, 2017). This external source of resilience and protection in the face of emotional dysregulation also moves the emotional support outside of therapy and into the client’s real world. This is helpful in generalizing new skills into daily life. Furthermore, healthy support from others improves mood, feelings of control, and ability to handle stress. In treatment, this enhances the possibility for adaptive change by allowing clients to better tolerate the stress associated with the difficult therapeutic work. Because altruistic behaviors are associated with a sense of efficacy (Pfaff, 2015), clients will feel more capable of moving through therapy, handling their emotions, and facing difficult realities. This state of mind may improve progress in therapy.

Table 3

The Impact of Altruism on Emotional Regulation

<u>Biological</u>	Oxytocin activation Cortisol reduction Increased prefrontal metabolism and activation Decreased (inhibited) amygdala activation Raising the threshold of the fight/flight system
<u>Psychological</u>	Increased happiness and well-being Increased sense of interpersonal connection Decreased depression, anxiety, & hopelessness
<u>Social</u>	Decreased isolation Increased social support Increased sense of efficacy

Overall, altruism facilitates an individual’s ability to regulate their emotions in a variety of ways. Altruism helps regulate brain regions associated with anxiety, fear, and stress, all of which inhibit work in therapy and emotional regulation. When clients are overly aroused and in fearful states, they cannot think flexibly or incorporate new information in order to make changes. By regulating anxiety and fear, altruism will facilitate new learning and neuroplasticity,

thus creating a biological state primed for change. Clients will be better able to listen to, evaluate, and incorporate feedback from their therapists. Furthermore, altruism can help regulate emotions via safe, supportive relationships with others. These improved interpersonal relationships provide a secure base where people can reduce their anxiety, engage in higher order thinking, and regulate their emotions.

Creating a Safe Internal Space that Allows for Increased Self-Insight and Emotional Awareness

People benefit from having a generally peaceful, safe internal space where they can retreat when needed. This allows people to reflect, process experiences, develop insight, enhance emotional awareness, and increase understanding. Altruism activates the default mode network (DMN), ventromedial prefrontal cortex, and temporal parietal junction (Beckmann, DeLuca, Devlin, & Smith, 2005), which are all involved with metacognition, self-awareness, and our ability to successfully engage with others. Altruism also increases oxytocin, decreases cortisol, and inhibits the amygdala via increased activation in the orbitomedial prefrontal cortex (Moll et al., 2006; Skuse & Gallagher, 2008), thus decreasing fear responses and stress. This allows people to detach from their emotions and examine them without becoming overwhelmed, facilitating the insight and self-reflection essential to adaptive, positive change in therapy.

This biological state creates a safe internal environment, allowing individuals to deepen their emotional awareness of others and ultimately themselves. Metacognition, self-awareness, and self-reflection are essential to the lasting changes we hope to achieve in psychotherapy (Miller et al., 1997). Facilitating the construction of a safe internal space for reflection and contemplation may ultimately be used to enhance the insight needed for therapeutic growth and mental peace. Because altruism down-regulates stress by increasing oxytocin (De Dreu et al.,

2010; Zak et al., 2007) while increasing activity in the orbitomedial prefrontal cortex (Moll et al., 2006; Skuse & Gallagher, 2008), we are free to disengage from the outside world and turn our attention inward.

The emotional regulation and secure internal environment that altruism facilitates also set up the foundation for insight. Creating a safe, internal space for individuals to reflect on their experiences and feelings allows them to examine themselves without too much judgment or avoidance. By increasing emotional regulation, altruism also expands a person's ability to consider unpleasant aspects of themselves and others that may otherwise be overwhelming due to the resulting feelings. Psychologically, altruism reduces negative thoughts and mental disturbances (Post, 2005), further enhancing a sense of internal quiet. In addition, altruistic behaviors correlate with a sense of efficacy and personal value (Pfaff, 2015). A sense of confidence and efficacy will help people explore their inner experiences and tolerate unpleasant emotions, which is an important process in therapy. All of these work together to create a sense of safety for clients, allowing them to reflect on their patterns of engaging with others, to put their feelings into words and share them with others, to expand their perspectives, and to understand their internal motivations and values.

Table 4

The Impact of Altruism on the Creation of a Safe Internal Space

<u>Biological</u>	<ul style="list-style-type: none"> Activates the DMN Increases activity in ventromedial prefrontal cortex Additional activation of temporal parietal junction Boosts activity in the orbitomedial prefrontal cortex Raises oxytocin levels Decreases cortisol Inhibits the amygdala
<u>Psychological</u>	<ul style="list-style-type: none"> Decreases negative thoughts Reduces mental disturbances Supports developing a safe internal space Increased emotional regulation Put words to feelings Reflect on patterns of behavior Understand underlying motivations Expand clients' perspectives Increased sense of confidence and efficacy
<u>Social</u>	<ul style="list-style-type: none"> Bring a greater centeredness and calm to interactions Increased insight from social interactions Improved attunement to others Increased awareness of the emotions of others

Altruism provides a unique opportunity to learn about how clients interact with and are perceived by others from a calm and open place. This will help increase their insight into their social interactions. Focusing on others and how they impact others allows clients to better understand their own patterns of perceiving others and how that may be influenced by past experiences or relationships. Seeing how they impact others will also help clients understand how they are perceived by others as compared to their intended impact. Because of the isolated nature of most psychotherapies, therapists and clients often do not have access to this vital information, a void that altruism may fill. Furthermore, altruism attracts more altruism and

positive interpersonal relationships (Post, 2005), which increase the outside support and feedback that clients receive.

Emotional awareness and self-reflection contribute to self-understanding and insight, a vital aspect of therapy. Although therapy requires external participation with a therapist, it is a largely internal process on behalf of the client. The client must be able to process their own feelings and experiences, which requires an internal focus. Altruism facilitates the construction of a safe internal space that allows for this work to take place and that acts as a restorative space from daily stressors.

Facilitate Adaptive Interpersonal Relationships

As therapy progresses, the hope is that clients will ultimately move past the need for services. This independence is affected by the development of external sources of support, such as adaptive interpersonal relationships. Altruism activates the default mode network (Beckmann et al., 2005), which facilitates our perceptions of and ability to empathetically attune to others, both of which improve the quality of our interpersonal connections. Connecting with others and accurately perceiving their communications (nonverbal and verbal) creates the foundation for reciprocal relationships that provide social support. Furthermore, altruism is associated with increased oxytocin (De Dreu et al., 2010; Zak et al., 2007), which kick starts attachment systems (Cozolino, 2017). The neurobiology of altruism also contributes to adaptive interpersonal relationships by inhibiting the amygdala via activation of the orbitomedial prefrontal cortex (Moll et al., 2006; Skuse & Gallagher, 2008). This decreases fear responses and stress, further facilitating secure attachments. By activating the frontal lobe (Skuse & Gallagher, 2008) and the posterior superior temporal sulcus (Tankersley et al., 2007), areas that are associated with social and interpersonal connections, altruism further activates attachment systems. This suggests that

there is a relationship between engaging in altruism and attachment. Perhaps as people engage in more altruism, they will be able to change old attachments and develop new, secure attachments, thereby enhancing interpersonal relationships in and out of therapy.

Altruism provides various psychological benefits that can also contribute to the development of supportive interpersonal relationships. Altruistic behaviors enhance empathy for others (Decety & Jackson, 2004; Moll et al., 2006), an important aspect of attuning and connecting with others. Acting on altruistic impulses decreases negative thoughts (Post, 2005), depression (Harris, 1977; Pfaff, 2015; Post, 2005), and anxiety (Post, 2005), symptoms that often lead to isolation and an avoidance of interpersonal interactions. Altruism assists individuals in reengaging in relationships and social activities by decreasing these symptoms and reengaging clients with their external environment.

Table 5

The Impact of Altruism on Adaptive Interpersonal Relationships

<u>Biological</u>	<ul style="list-style-type: none"> Activates the default mode network Increases oxytocin Activates the frontal lobe Inhibits amygdala activation Increases activation in posterior superior temporal sulcus
<u>Psychological</u>	<ul style="list-style-type: none"> Enhances empathy Decreases negative thoughts Reduces depression Less fear and anxiety
<u>Social</u>	<ul style="list-style-type: none"> Attracts other altruistic individuals Makes people more attractive to potential romantic partners Decreases isolation

Socially, altruism contributes to the construction of interpersonal relationships, a fundamental source of support and therapeutic progress. Altruism attracts other altruistic individuals, increasing an individual's number of helpful, supportive friends (Le Galliard et al., 2005). These improved interpersonal relationships provide a great number of therapeutic benefits, such as reduced arousal, increased sense of security, and decreased stress (Cozolino, 2017). Being altruistic also makes people more attractive to potential romantic partners (Hardy & Van Vugt, 2006), potentially facilitating intimate relationships. The resulting decrease in isolation will ideally lead to more and improved interpersonal relationships.

Overall, altruism directly advances successful interpersonal relationships through the avenues discussed above. In addition to those changes, altruism indirectly facilitates interpersonal relationships by increasing awareness of others, compassion, and empathetic attunement, skills essential to relationships.

Increased awareness of others. Therapy often focuses on the ability to balance between individual needs and the needs of others. That requires the ability to be aware of the needs and feelings of others, especially those closest to us. As mentioned above, altruism enhances the ability to attune to others and organize our perception of others by activating the DMN (Beckmann et al., 2005). This increases our awareness of others, our ability to reflect on how we impact them, and our understanding of the experiences of others. By activating these regions, altruism will allow individuals to become more aware of others, an important aspect of therapy and all relationships.

Our awareness of others can be limited if we are too internally focused, causing us to neglect the external environment. Symptoms of stress, anxiety, and depression, common problems that bring people to therapy, focus clients inward due to the distress they are

experiencing. Altruism reduces these symptoms (Harris, 1977; Pfaff, 2015; Post, 2005) allowing clients to refocus externally, increasing their awareness of the other people in their lives. The ability to be aware of and attune to others is built on compassion and empathetic attunement, both things that altruism also encourages.

Compassion. Compassion, recognizing the pain in others and having a desire to end it, motivates people to take action to reduce the suffering, altruism. Compassion focused meditation where individuals actively focus on increasing compassion toward others does result in an increased sense of compassion toward others (Gilbert, 2009). Based on this, it can be hypothesized that altruism will also increase compassion by actively focusing clients on the pain of others and how they might reduce that suffering. Compassion is associated with several psychological benefits, including connecting with others, feeling more kindly toward strangers, decreased feelings of shame, less self-criticism, decreased depression, and less anxiety; it also facilitates connections to the world that increase well-being. Encouraging compassion via altruism will likely activate all of these benefits. Furthermore, compassion serves an important social function. It connects us with other individuals, allowing us to feel their pain, acknowledge their suffering, and understand that their unique experiences impact how they engage with the world. When people feel compassion toward others, it improves the quality of their social interactions.

In addition, self-compassion is beneficial and healing for many individuals, and it involves the same processes as compassion toward others (Neff, 2017); therefore, it will likely be activated in a similar fashion. Self-compassion involves kindness toward self, recognition that all humans are innately flawed, accepting that suffering is a shared experience, and an ability to put personal experiences into the context of the suffering of others. Self-compassion can reduce self-

criticism and judgment, enhancing an individual's confidence and allowing individuals to avoid unnecessary self-blame, further reducing symptomology and the general suffering of clients.

Overall, compassion is a vital aspect of altruism as it drives a person to take action to reduce the suffering of others, and it is an important part of perspective taking and interpersonal relationships. Compassion allows people to relate to others and have perspective about their individual struggles. This reality-testing and perspective taking can enhance interpersonal relationships while contributing to the therapeutic process and achieving symptom reduction.

Empathic attunement. Empathetic attunement is essential for attachment and relationships inside and outside of therapy. Altruism correlates with increased oxytocin (De Dreu et al., 2010; Zak et al., 2007), which increases empathy (Cozolino, 2017). Empathy impacts our ability to connect, resonate, and attune with others (Moll et al., 2006; Decety & Jackson, 2004). Empathy requires an emotional and cognitive connection with others (Pfaff, 2015), and this connection facilitates interpersonal relationships. In addition, altruism activates the default mode network (Beckmann et al., 2005), a region that is also engaged when people empathically attune with others (Schilbach, Eickhoff, Rotarska-Jagiela, Fink, & Vogeley, 2008). This allows clients to recognize others, empathize with their current feelings, and attune to their emotional state.

In addition to enhancing interpersonal relationships, empathetic attunement provides the ability to reality test our own interpretations of events. For example, a person with self-critical thoughts may be able consider alternative explanations if someone was uninterested in starting a conversation. Clients may naturally default to a thought that it was because they were uninteresting, boring, or disliked. By considering the perspectives of others, clients may expand beyond the self-criticism to other interpretations, such as the other person was tired.

Social interactions that include altruism require a recognition that others are in pain and empathy (Decety & Jackson, 2004; Moll et al., 2006), which makes clients feel the suffering of others. It is a skill that clients can develop over time as they learn to attune to others in order to practice altruistic behaviors. Empathy facilitates the ability to understand and forgive others as clients can incorporate feelings and circumstances into how they perceive them. Being more aware of others and their internal experiences makes us better friends and makes us more aware of problematic behaviors and patterns within relationships. Altruism, by increasing empathy, helps move individuals toward a better connection with others, improved interpersonal relationships, and all of the benefits associated with interpersonal relationships.

Building a secure therapeutic relationship. A secure therapeutic relationship is a central factor in positive therapeutic outcomes regardless of theoretical orientation (Okiishi et al., 2003). Altruistic behaviors trigger increased activity in the frontal lobes, an area of the brain associated with both abstract and social functioning (Moll et al., 2006; Skuse & Gallagher, 2008), and they are associated with more activity in the posterior superior temporal sulcus, a brain region that relates to the ability to develop interpersonal connections (Tankersley et al., 2007). There is also research that connects altruism with activation in the default mode network (Beckmann et al., 2005) and increased oxytocin (De Dreu et al., 2010; Zak et al., 2007), both of which are associated with attunement and attachment. In addition, by engaging brain regions associated with altruism, as discussed above, altruism will help clients attach to their therapists. When clients are aroused and fearful, it can inhibit their ability to attune to and connect with others (Cozolino, 2017). Facilitating a deeper connection between therapist and client by activating these biological processes via altruism may help therapy be more productive and successful.

By activating attunement and attachment networks (Beckmann et al., 2005; De Dreu et al., 2010; Zak et al., 2007), altruism can also alter attachment networks over time via new secure relationships with others, creating lasting psychological change. These strong interpersonal connections deepen intimacy, facilitate communication, and help individuals feel safe, all of which are necessary for a productive and adaptive therapeutic relationship. Furthermore, altruism provides clients with the opportunity to act as the caretaker in an interaction or relationship (Post, 2005). This would cause clients to model the behaviors they see in therapy, strengthening their internal working model of the therapist. Clients will feel connected to their therapists even outside of therapy due to resulting improvement in object permanence.

Table 6

The Impact of Altruism on Secure Therapeutic Relationships

<u>Biological</u>	Increased activity in frontal lobe deep activity increases Activation in the default mode network Increased oxytocin
<u>Psychological</u>	Inhibits anxiety and stress Increased sense of safety
<u>Social</u>	Facilitates attachments and attunement Allows for modeling of therapist Improves internalization of the therapist Increases social connection with supportive others

As clients engage in more positive interactions with others (Post, 2005), they begin to feel safer and more secure in their relationships. Each healthy exchange reinforces hope and expectation for further positive responses from others in their social environment. This will encourage clients to feel safer in all of their relationships, including the therapeutic alliance. As the therapeutic process continues to develop and deepen, clients will be able to share more,

consider the therapists' interventions, and incorporate new experiences. Secure attachments with the therapist and others regulate the amygdala and emotional distress (Cozolino, 2017). This will facilitate a biological state that allows for neuroplasticity, flexibility, and change.

Overview of Results

Altruism works directly toward achieving the goals of therapy by improving emotional regulation, creating a safe internal space that allows for increased self-insight and emotional awareness, and facilitating adaptive interpersonal relationships, with a focus on building a secure therapeutic alliance, by increasing (a) awareness of others, (b) compassion, and (c) empathic attunement. Altruism helps achieve the state of mind, state of body, and state of change needed for therapy, further enhancing the achievement of therapeutic goals.

Clients often come to therapy with challenges that are caused or exacerbated by social isolation. Being disconnected from others and the group mind, which incorporates the collective consciousness that develops from a group of individuals, brings about a great deal of distress for most individuals. By engaging with others and participating in the group mind, people receive feedback about how they impact the world, model the adaptive habits of others, reap the benefits of social support (better physical and psychological health among many), and heal by engaging with supportive others.

Traditional psychotherapy often focuses on the individual's internal environment and the events that take place in the room. However, this lacks generalization to other areas of the clients' life and may reinforce isolation by keeping clients internally focused at the cost of neglecting their external world. Altruism provides a unique opportunity of moving therapy outside of the room, generalizing skills, and developing the social support needed to maintain the positive gains of therapy after termination. In addition, altruism helps achieve the goals of

therapy (emotional regulation, creating a safe internal space, and adaptive interpersonal relationships) via biological, psychological, and social systems. This interactive and synergistic way of approaching the goals of therapy may help achieve or enhance the changes we see hope to see in therapy.

The biology of altruism. There are several brain regions that are altered by progress in therapy. The amygdala, dorsolateral, ventrolateral, and medial prefrontal cortices, anterior cingulate, and insular cortices are brain regions likely associated with therapeutic change. Research has shown that certain therapies increase activation in the ventromedial prefrontal cortex, which associated with a reduction in symptoms associated with depression (Ritchey, Dolcos, Eddington, Strauman, & Cabeza, 2011). Therapy has also been correlated with an improvement in the amygdala's ability to discern between emotional items and neutral items. Other studies found that positive therapeutic change impacted the amygdala, the hippocampus, and adjacent cortical areas in individuals with anxiety disorders (Porto et al., 2009). The amygdala can become inhibited, and the hippocampus can adapt memories associated with a specific stimuli. The brain and neural activity change in response to therapy.

Together, these processes represent the neurobiological core of social-emotional functioning upon which the success of psychotherapy rests. From positive transference, to self-reflection, to self-compassion and stress management, they tap into the central mechanisms of brain plasticity and positive therapeutic change. As altruism has similar effects on the brain regions discussed above, it likely stimulates the brain in ways that will benefit therapeutic outcomes.

In addition, altruism supports the creation of a state of brain that enhances plasticity and change by reducing anxiety, enhancing emotional attunement with the therapist, and activating neural networks that support self-insight, empathy, and understanding. Based on the literature review, altruism can activate brain regions associated with higher order thinking, self-reflection, better judgment, and perspective-taking. Altruism also activates brain regions associated with empathy, compassion, attunement, attachment, motivation for change, and decision-making. By activating these regions and facilitating neuroplasticity, altruism creates a biological state of brain and an adaptive environment within the individual for positive changes to occur, an essential component of therapy. Because guided altruism would likely activate the brain in a similar fashion, it may enhance positive therapeutic growth.

Table 7

Brain Regions Activated Secondary to Altruism

Default Mode Network	Empathy, self-awareness, reflection, awareness of others
Orbitomedial Prefrontal Cortex	Social intelligence, decrease anxiety, empathy
Ventromedial Prefrontal Cortex	Stress management, self reflection
Amygdala	Decreased anxiety, increased attachment
Oxytocin	Attunement and emotional attachment

The psychology of altruism. Clients often come to therapy due to anxiety, depression, stress, or low self-esteem. They want to feel happier, more efficacious, and more confident. In addition to the biological processes of altruism, altruistic behaviors are also associated with many psychological benefits that facilitate therapy and directly decrease symptoms.

Table 8

Positive Reported Psychological Effects of Altruism

- Greater self-esteem / efficacy / personal value
 - Decreased negative thoughts, depression, and anxiety
 - Increased positive mood, & well-being
 - Increased sense of empathy for others
 - Higher quality of life and life satisfaction
 - Expanded perspective
-

Altruism directly facilitates the goals of therapy by decreasing symptoms, including mental disturbances, anxiety, negative thoughts, depression, and fear. In general, altruistic behaviors are associated with increased happiness and self-esteem, expanded perspective-taking, and the development of a safe internal space. Indirectly, the psychological benefits create a state of mind that enhances therapeutic work by increasing inner peace, self-reflection, and contemplation of others. Expanding our perspectives and changing our patterns naturally creates anxiety by moving us from the known to the unknown. Guided altruism can disrupt this tendency, making it easier for clients to make changes and expand their awareness. Furthermore, decreasing negative thoughts and increasing self-efficacy and confidence improves a client's ability to face problematic patterns with some anticipation of success. This will likely help them move forward with therapy and take the necessary risks to make adaptive change.

This confidence and decrease in anxiety will also allow for greater self-reflection and insight due to the creation of a safe internal space. So many clients are uncomfortable with silence, and it can leave them stuck in a chaotic internal environment filled with self-criticism, doubt, and catastrophic cognitions. They quickly fill any space instead of facing the unpleasant feelings that come up. This does not leave room for reflection and contemplation about how clients feel, how they impact others, or what needs to change for them to be happy.

Social connectedness and altruism. The social benefits and consequences of altruism will also enhance how goals are achieved in therapy. One of the innate limitations of traditional psychotherapy is the isolation. There are two people in the room, and therapists are the only source of support and interpersonal connectedness. Guided altruism transforms this process, reengaging clients with their external environment and the numerous potential benefits associated with adaptive interpersonal relationships.

Guided altruism engages individuals with others, strangers and significant others. It connects clients with the feelings, perspectives, and experiences of others, making them better friends, partners, and family members. Instead of the internal focus of anxiety or depression, guided altruism refocuses clients on important people in their lives, which allows them to improve existing relationships. They are also able to make better decisions, indicating that they would be better able to choose their social support. Enhanced interpersonal relationships provide numerous benefits, many of which support therapy. Feeling securely attached to others increases self-efficacy, helping people to feel more able, capable, and in control of their environment. Clients will feel more able to approach the challenges that often bring them to therapy.

Table 9

Positive Reported Social Consequences of Altruism

- Increased social contact and decreased isolation
 - Improved interpersonal relationships
 - Increased external support
-

Because altruism engages individuals in their environment, they will complete a series of social experiments. In order to act on altruistic intentions, clients will need to contemplate the experiences of others, create a hypothesis about their current feelings, and act on that hypothesis.

Within the same interaction, they will get feedback letting them know if they interpreted the situation accurately or inaccurately, gain information about how they impact others, and better understand how their intentions and actions are received. This will expand far beyond the walls of therapy. Clients will receive feedback from countless individuals beyond their therapist, increasing their self-understanding substantially.

Overall, altruism can facilitate therapy through biological, psychological, and social changes. In order for therapy to be effective, therapists need to help clients feel safe and able to work through the issues that brought them to therapy. Based on the literature, altruism activates brain regions that regulate emotions, enable neuroplasticity, reduce stress, and facilitate insight. Psychologically, altruism reduces many symptoms that bring clients to therapy, furthering their commitment and ability to address the underlying cause of their symptoms. Furthermore, altruism reengages individuals with their social environment, allowing for all of the benefits that come from interpersonal support. These findings will be further addressed in the discussion section below.

Chapter 5: Discussion

There is significant anecdotal evidence behind the benefits of altruism. It provides meaning and purpose for a number of people. One of my clients has experienced significant sexual, physical, and mental abuse at the hands of her caregivers over the course of her entire life. When we first began therapy, she made sense of her experiences by blaming herself. She believed that she was a terrible person who must have done something awful to deserve the horrifying and severe abuse that she experienced and that was inflicted by the people that she loved and trusted the most. The story that she created about herself and her family allowed her to maintain relationships with them, but at a significant cost to her emotional health and her self-esteem. It also meant that she continued to experience severe psychological abuse. Every phone call and interaction deepened her belief that she was damaged and deserving of such abuse.

Over the course of treatment, she found a great deal of comfort by changing the meaning of her experiences. There was no way to truly make sense of how something so terrible had happened to her over and over again, but she gave her experiences purpose by deciding to use them to help others. She decided to work through her trauma, pursue a graduate degree, and eventually become a therapist to help others with similar experiences. This idea, the potential to help others even though no one had helped her, allowed her to achieve a sense of peace. She lights up when thinking about all of the people she will help, especially with her unique understanding of this abuse. It gives her hope beyond anything that she has had in the past. The idea of using her pain to help others, focusing on the altruistic potential, has allowed her to heal, to change her view of herself, and to reconnect with the world. This transformation has been amazing to see, and I have been honored to be a part of the process.

Clients come to therapy for many reasons. They are lonely, sad, anxious, scared, traumatized, or lost. Because we are such social creatures, many symptoms come from isolation or disconnection from the group mind, and other disorders are exacerbated by the same disconnection. Altruism connects people and opens them up to relationships, which is something that we often strive for in therapy. Psychotherapy generally focuses on three goals: increasing emotional regulations, creating a safe internal space that allows for self-insight and self-understanding, and improving interpersonal relationships. Emotional regulation is often achieved by creating a safe therapeutic relationship and facilitating a safe internal space for clients. Self-understanding and self-insight develop as clients focus on their internal experiences and learn about their patterns via discussions with their therapists. Working through transference, increasing empathetic attunement, and engaging in behavioral changes all help individuals improve their interpersonal relationships by allowing for more adaptive and supportive experiences with others. Clinicians work toward these goals in order to improve an individual's internal and external environment, something that occurs by changing the way their brain responds to stimuli and by leveraging the mind to help move the brain toward healthier ways of functioning.

Based on the literature review, it appears that: (a) altruism will assist in achieving the goals of psychotherapy by helping individuals achieve similar improvements, such as emotional regulation, a safe internal space, and more adaptive interpersonal relationships; (b) altruism will activate brain regions associated with positive therapeutic change, therefore enhancing the achievement of therapeutic goals and creating a state of mind conducive to change, and (c) altruism will facilitate skills needed for the therapeutic process and decrease symptoms of mental

health disorders. It seems that altruism affects individuals on biological, psychological, and social levels in unique ways that help achieve the goals of psychotherapy.

In addition to everyday experiences with those who find meaning through altruism, the research lends support to the idea that engaging in altruistic behaviors could enhance psychotherapy and be supportive of its goals. The psychological and social benefits of altruism are fairly straightforward. In the example of my client, it is easy to see how feelings of efficacy and enhanced self-esteem would be helpful to her growth and development, thus allowing her to work through difficult emotions and to improve her mental health. At the next level, it is understandable that positive social interactions that stimulate the biochemistries of attachment, well-being, and satisfaction would enhance the relational aspects of the therapeutic process.

What is a bit more difficult to grasp is the fact that stimulating regions of the brain involved with certain skills and abilities can lead to changes in self-identity, executive functioning, and symptom reduction. The neural circuitry associated with altruism in the available literature closely parallels those circuits necessary for successful psychotherapy. The assumption of this study, that activating these regions through altruistic behavior will support the process and goals of therapy, is based on the literature that connects brain changes in psychotherapy with symptom reduction, specific brain differences with symptomology, and brain activity with openness to change.

In the room, therapists work to create a specific environment for individuals to process their past, engage in self-understanding, grieve losses, and access painful emotions. This healing process is vulnerable and requires clients to feel safe and challenged at the same time. Clinicians also need to help clients regulate difficult feelings so that they are neither avoiding feelings nor being overwhelmed by them. This state of mind is challenging to develop and maintain as clients

work through the challenges that brought them to therapy. However, it appears that altruism can help therapists create the necessary environment and state of mind for their clients to engage in this process. Altruism creates this state of mind that lets people benefit more from therapy by facilitating attunement, openness toward the therapist, and openness toward growth and change.

In psychotherapy, clients engage with their therapist in a one-to-one setting. It is often isolated, and at times, it is hard to move clients to make changes outside of the room. They need to change their interactions and patterns. Altruism provides clients with a chance to interact with others, benefitting their relationships and social support. This intervention may draw the benefits of therapy into other areas of our clients' lives.

Altruism is already being used in a variety of therapies. Alcoholics Anonymous facilitates recovery by having participants act as sponsors for newer individuals, leveraging the benefits of teaching and helping others. Behavioral activation, a technique that is commonly associated with decreases in depression, helps client's reengage with the world and increase feelings of joy. Psychodynamic therapies view altruism as a mature defense because it allows people to healthily cope with the innate difficulties that come from life and relationships. Group therapy is inherently altruistic as individuals benefit from being able to help others by sharing their experiences, helping themselves in the process. Gratitude based interventions focus on seeing the altruistic acts that the client has received from others. Moving forward, it would be helpful to examine the possibility of using altruism as an adjunct to psychotherapy in order to more intentionally leverage its benefits to help clients.

Concerns Regarding Altruism

As there is no research directly relating altruism and psychotherapy, it is difficult to determine which diagnoses would be best suited for altruism as an adjunct to psychotherapy.

Most of the literature available focuses on symptoms related to moderate depression and anxiety, suggesting that these would be good areas on which to focus. However, there are several diagnoses that may make it more difficult to utilize altruism, potentially setting up clients for disappointment. For example, clients who struggle with empathy (Narcissistic Personality Disorder, Antisocial Personality Disorder) may lack the ability and/or desire to connect with others through altruism. Clients who struggle with social cues (Social Communication Disorder, Autism Spectrum Disorder) may need additional coaching before using altruism in order to recognize others in need and in order to determine an appropriate response. In general, it will be important to assess potential clients for general stability, safety issues, and risk factors. Clients need to be emotionally stable enough to engage with the external world, tolerate potential disappointments when altruistic acts do not go as planned, and handle the feedback that they receive during these interactions.

Furthermore, altruism can be used as a defense to avoid looking inward, and it is important that therapists monitor the potential use of altruism as a maladaptive defense. One of my clients has lived a seemingly altruistic life, taking care of others at all costs. His main role as an adolescent and young adult was to care for his mentally ill brother and his parents who were struggling to care for their son. This altruistic behavior seemed to be coming from a selfless place, but as he became overwhelmed with caring for others, he learned that he used altruism and caring for others to distract him from his own wants, needs, and experiences. Any time left over was immediately filled with anything to distract from his own pain, something that has negatively impacted most of his relationships. While altruism has a great deal of benefits, it is vital to understand when it is healing and when it is damaging. Therapists will need to monitor

the potential for damage to ensure that the benefits of altruism are being utilized to enhance therapeutic work, not enable clients' avoidance.

Limitations of the Study

There is considerable evidence demonstrating a correlation between clinical symptoms and specific patterns in brain activation. For example, depression correlates with greater right versus left prefrontal metabolism (Etkin, Phil, Pittenger, Polan, & Kandel, 2005), anxiety with greater amygdala versus cortical activation (Karlsson, 2011), and OCD with greater caudate versus cortical activation (Karlsson, 2011). The literature also shows that if these brain patterns are altered by psychotherapy, medication, exercise, or changes in lifestyle, symptoms will decrease or disappear (Karlsson, 2011; Porto et al., 2011; Ritchey et al., 2011). Thus, the correlation between patterns of brain activation and state of mind is not in doubt. What still needs to be proven is that engaging in behaviors that stimulate certain regions will lead to their increased functional abilities in other situations. Since there is no empirical research specifically linking altruism and psychotherapy outcomes, this review makes the assumption that altruism's effects on the brain will generalize to the process of therapy and out into the rest of life, just as it is assumed that gains in psychotherapy will be generalized outside of the consultation room. This is still an unproven assumption and the weakest link in the argument.

Although every effort was made to scour the available literature, it has not been extensively studied within the field of social neuroscience. Furthermore, my interpretations of said literature are biased based on my cultural background and the perspectives taught in my program. First, Western cultures are traditionally individualistic in nature, and much of the literature available works from this assumption. Here, it is assumed that humans are connected and rely on supportive others for improved mental health. Due to these limitations, the

hypotheses must be considered with caution. Future research in this area may more conclusively determine whether guided altruism will enhance the process of psychotherapy.

Areas for Future Study

Because these conclusions are based on a literature review, a direct connection between altruism and positive changes in therapy needs to be examined further. In order to do so, further study needs to be conducted.

In regards to participants, it would be essential to have a large group of clients that present with similar types and intensity of symptoms. Much of the literature focuses on symptoms of anxiety and depression; thus, these diagnoses should be addressed first. Using baseline measures, examiners can select participants who present with mild to moderate anxiety and/or depression. Participants who present with safety concerns, such as suicidal ideation, recent hospitalizations, etc., should be screened out. A large, diverse sample will help determine if these findings can be generalized to a larger population.

Participants would be randomly selected into two separate groups: the experimental group who would receive traditional psychotherapy while engaging in altruistic activities and the control group who would receive traditional psychotherapy without engaging in altruistic behaviors. Because Cognitive Behavioral Therapy (CBT) already incorporates assignments outside of therapy, both groups will participate in individual CBT therapy. The same clinical interventions should be used within both groups. The experimental group will be tasked with altruistic activities that need to be completed outside of therapy. Clients will be able to choose activities from a predetermined list. Therapists will help clients determine which activities to engage in, and they will also check in with clients to ensure that the activities have been completed. Both groups will agree to meet with their therapist once a week for 15 weeks.

Both groups will complete a number of measures throughout the study. Baseline measures would include Beck's Depression Inventory II and Beck's Anxiety Inventory to assess for symptoms, symptom severity, and safety concerns. This will help determine if there is a reduction in symptoms and/or distress as therapy progresses. Examiners will also administer the Working Alliance Inventory Short Form-Client to assess the quality of the therapeutic relationship from the client's perspective, the Multidimensional Scale of Perceived Social Support to assess the quality of support and interpersonal relationships outside of therapy, and the Outcome Questionnaire-45.2 to assess general outcomes of therapy. The same measures will be completed at intake, every 2 weeks, and at the end of therapy.

For participants in the experimental group, qualitative data can also be collected regarding the altruistic activities. A questionnaire will be developed to assess the nature and quality of the altruistic experiences, how they felt in the moment, whether they perceived the event as successful, and how they think they impacted the other party. This questionnaire will include questions to determine if participants think that the skills learned in therapy have generalized to other settings. In addition, therapists in both groups will also complete a questionnaire about their clients, their client's goals, how much clients have moved toward their goals, and if new skills have generalized outside of therapy.

Once the data is gathered, the qualitative data will provide important information about the quality of the participants' experiences related to altruism. It will also help examiners determine what aspects of altruistic activities need to be adjusted. The quantitative data gathered from the various measures will be analyzed to determine if the experimental group made significantly more progress related to symptom reduction and achieving the goals of therapy

(emotional regulation, social support, and the creation of a safe internal space to facilitate self-insight). Based on the initial data, further studies may prove useful.

Conclusion

When clients come to therapy, therapists face several challenges in helping them achieve their goals. Clients are often in crisis or focusing on their internal pain and suffering, which affects their work, life, and relationships. The literature suggests that altruism would help clients and clinicians regulate biological systems, decrease many psychological symptoms, and facilitate the tools needed for self-reflection and change if used in adjunct to psychotherapy. Furthermore, therapists and clients attempt to achieve a state of mind and physiology that facilitates adaptive change, states that altruism helps create. Altruism reengages these individuals with the world, improves interpersonal relationships, allows for better emotional regulation, increases the number of positive interactions with the world, and helps them to better understand their own experiences. All of these changes would enhance the client's progress, helping them to achieve the three goals of therapy. This would likely increase the effectiveness of therapy if used adjunctively. Altruism would facilitate their ability to live loving and productive lives, what Freud described as mental health.

REFERENCES

- AFP, & MacFarlan, T. (2015). The remarkable true story of an Indian man who spent 22 years chiselling his way through a mountain out of love for his dead wife becomes a Bollywood film. *DailyMail.com*. Retrieved from <http://www.dailymail.co.uk/news/article-3205945/Bollywood-film-Indian-man-Dashrath-Manjhi-spent-22-years-chiselling-mountain-love-dead-wife.html>
- Alcoholics Anonymous (2015). Welcome to Alcoholics Anonymous. Retrieved from <http://www.aa.org>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: American Psychiatric Association.
- Beckmann, C. F., DeLuca, M., Devlin, J. T., & Smith, S. M. (2005). Investigations into resting-state connectivity using independent component analysis. *Philosophical Transactions of the Royal Society: Biological Sciences*, 360(1457), 1001-1013.
doi:10.1098/rstb.2005.1634
- Brown, M. B., Consedine, N. S., & Magai, C. (2005). Altruism relates to health in an ethnically diverse sample of older adults. *Journal of Gerontology: Psychological Sciences*, 60B(3), P143–P152. doi:10.1093/geronb/60.3.P143
- Cozolino, L. J. (2017). *The neuroscience of psychotherapy: Healing the social brain* (3rd ed.). New York, NY: W. W. Norton & Company.
- Cribb, R., & Jarratt, E. (2016). Canadian surrogates and their extraordinary altruism. Retrieved from <https://www.thestar.com/news/world/2016/07/17/canadian-surrogates-and-their-extraordinary-altruism.html>

- De Dreu, C. K., Greer, L. L., Handgraaf, M. J., Shalvi, S., Van Kleef, G. A., Matthijs Baas, ... Feith, S. W. (2010). The neuropeptide oxytocin regulates parochial altruism in intergroup conflict among humans. *Science*, 328, 1408-1411. doi: 10.1126/science.1189047
- de Waal, F. B. (2008). Putting the altruism back in altruism: The evolution of empathy. *Annual Review of Psychology*, 59, 279-300.
- Decety, J., & Jackson, P. L. (2004). The functional architecture of human empathy. *Behavioral and Cognitive Neuroscience Reviews*, 3(2) 71-100. doi: 10.1177/1534582304267187
- Dixon, R. (2016, November 20). On the ground: This Nigerian man cannot stop giving: Food, money, cars, shops, even houses. Retrieved from <http://www.latimes.com/world/africa/la-fg-nigeria-charitable-man-20161119-story.html>
- Earl, J. (2015, February 6). Target employee's good deed goes viral. *CBS News*. Retrieved from <http://www.cbsnews.com/news/target-employees-good-deed-goes-viral/>
- Emmons, R. A., & Stern, R. (2013). Gratitude as a psychotherapeutic intervention. *Journal of Clinical Psychology*, 69(8), 846-855. doi:10.1002/jclp.22020
- Etkin, A., Phil, M., Pittenger, C., Polan, H. J., & Kandel, E. R. (2005). Toward a neurobiology of psychotherapy: Basic science and clinical applications. *Journal of Neuropsychiatry Clinical Neuroscience*, 17(2), 145–158. doi:10.1176/jnp.17.2.145
- Fiske, S. T. (1980). Attention and weight in person perception: The impact of negative and extreme behavior. *Journal of Personality and Social Psychology*, 38(6), 889-906. doi:10.1037/0022-3514.38.6.889
- Frewen, R. A., Dozois, D. J., & Lanius, R. (2008). Neuroimaging studies of psychological interventions for mood and anxiety disorders: Empirical and methodological review. *Clinical Psychology Review*, 28(2008), 228–246. doi:10.1016/j.cpr.2007.05.002

- Gilbert, P. (2009). Introducing compassion-focused therapy. *Advances in Psychiatric Treatment: Journal of Continuing Professional Development*, 15, 199-208.
doi:10.1192/apt.bp.107.005264
- Gintis, H. (2016). The genetic side of gene-culture coevolution: Internalization of norms and prosocial emotions. *Journal of Economic Behavior and Organization*, 53(1), 57-67.
- Golgowski, N. (2016a, August 22). Community cleans up 'KKK' graffiti on family's home before they return. *The Huffington Post*. Retrieved from http://www.huffingtonpost.com/entry/community-cleans-vandalized-home_us_57bb28c4e4b03d513689a81d
- Golgowski, N. (2016b, November 23). 7-year-old finds winning scratch-off, uses money to buy food for needy. *The Huffington Post*. Retrieved from http://www.huffingtonpost.com/entry/girl-uses-scratch-off-to-help-others_us_58359537e4b000af95ed50c8
- Gupta, A. (2013). Altruism in Indian religions: Embracing the biosphere. In D. Vakoch (Eds.), *Altruism in cross-cultural perspective* (101-112). New York City, NY: Springer.
- Hardy, C. L., & Van Vugt, M. (2006). Nice guys finish first: The Competitive Altruism Hypothesis. *Personality and Social Psychology Bulletin*, 32(10), 1402-1413.
doi:10.1177/0146167206291006
- Harris, M. B. (1977). Effects of altruism on mood. *The Journal of Social Psychology*, 102(2), 197-208. doi:10.1080/00224545.1977.9713265
- Harris, R. (2013, December 20). Atlanta homeless man does good deed for tourist. *CBS46 News*. Retrieved from <http://www.cbs46.com/story/24048608/homeless-man-does-good-deed-for-tourist>

- Herbert, W. (2014). Extraordinary altruism: Who gives a kidney to a stranger? *The Huffington Post*. Retrieved from http://www.huffingtonpost.com/wray-herbert/extraordinary-altruism-wh_b_4659566.html
- Jenkinson, C. E., Dickens, A. P., Jones, K. S., Thompson–Coon, J., Taylor, R. S., Rogers, M. ... Richards, S. H. (2013). Is volunteering a public health intervention? A systematic review and meta-analysis of the health and survival of volunteers. *BMC Public Health*, *13*(1), 773-773. doi:10.1186/1471-2458-13-773
- Karlsson, H. (2011). How psychology changes the brain. *Psychiatric Times*, *28*(8), 1-5.
- Killias, M., Aebi, M., & Ribeaud, D. (2000). Does community service rehabilitate better than short-term imprisonment? Results of a controlled experiment. *The Howard Journal of Criminal Justice*, *39*(1), 40-57. doi:10.1111/1468-2311.00152
- Le Galliard, J., Ferriere, R., & Dieckmann, U. (2005). Adaptive evolution of social traits: Origin, trajectories, and correlations of altruism and mobility. *The American Naturalist*, *165*(2), 206-224. doi:10.1086/427090
- Mallinckrodt, B. (1989). Social support and the effectiveness of group therapy. *Journal of Counseling Psychology*, *36*(2), 170-175. doi:10.1037/0022-0167.36.2.170
- Miller, S. D., Duncan, B. L., & Hubble, M. A. (1997). *Escape from Babel: Toward a unifying language for psychotherapy practice*. New York, NY: W.W. Norton & Company Ltd.
- Moll, J., & de Oliveira-Souza, R. (2007). Moral judgments, emotions and the utilitarian brain. *Trends in Cognitive Science*. doi:10.1016/j.tics.2007.06.001
- Moll, J., Krueger, F., Zahn, R., Pardini, M., Oliviera-Souza, R., & Grafman, J. (2006). Human fronto-mesolimbic networks guide decisions about charitable donation. *PLoS ONE*, *103*(42), 15623-15628. doi:10.1073/pnas.0604475103

- Moran, L. (2016). Selfless schoolboys spot a retiree struggling with yardwork, finish it for him. *The Huffington Post*. Retrieved from http://www.huffingtonpost.com/entry/cooma-north-act-of-kindness_us_5767e2f9e4b0853f8bf14bd6
- Nakamarua, M., & Iwasab, Y. (2006). The coevolution of altruism and punishment: Role of the selfish punisher. *Journal of Theoretical Biology*, *240*, 475–488.
doi:10.1016/j.jtbi.2005.10.011
- Neff, K. (2017). *Self-compassion*. Retrieved from <http://self-compassion.org/the-three-elements-of-self-compassion-2/>
- Okiishi, M., Lambert, M. J., Neilsen, S. L., & Ogles, B. M. (2003). Waiting for supershrink: An empirical analysis of therapist effects. *Clinical Psychology and Psychotherapy*, *10*, 361-373. doi:10.1002/cpp.383
- Pancer, S. M., Brown, S. D., Henderson, A., & Ellis-Hale, K. (2007). The impact of high school mandatory community service programs on subsequent volunteering and civic engagement. *Knowledge Development Centre*.
- Pfaff, D. (2015). *The altruistic brain: How we are naturally good*. New York, NY: Oxford University Press.
- Pinker, S. (2011). *The better angels of our nature: Why violence has declined*. New York, NY: Viking.
- Pittman, T. (2016). 6-year-old's act of kindness touches hearts everywhere. *The Huffington Post*. Retrieved from http://www.huffingtonpost.com/entry/6-year-olds-act-of-kindness-touches-hearts-everywhere_us_57967887e4b0d3568f842e27

- Porto, P. R., Oliveira, L., Mari, J., Volchan, E., Figueira, I., & Ventura, P. (2009). Does cognitive behavioral therapy change the brain? A systematic review of neuroimaging in anxiety disorders. *Journal of Neuropsychiatry*, *21*(2), 114-125.
doi:10.1176/appi.neuropsych.21.2.114
- Post, S. G. (2005). Altruism, happiness, and health: It's good to be good. *International Journal of Behavioral Medicine*, *12*(2), 66–77. doi:10.1207/s15327558ijbm1202_4
- Preston, S. D. (2013). The origins of altruism in offspring care. *Psychological Bulletin*, *139*(6), 1305-1341. doi:10.1037/a0031755
- Ramesh, R. (2010). Charitable giving by country: Who is the most generous? *The Guardian*. Retrieved from <http://www.theguardian.com/news/datablog/2010/sep/08/charitable-giving-country>
- Reynolds, D. K. (1980). *The quiet therapies: Japanese pathways to personal growth*. Honolulu, HI: The University Press of Hawaii.
- Ritchey, M., Dolcos, F., Eddington, K. M., Strauman, T. J., & Cabeza, R. (2011). Neural correlates of emotional processing in depression: Changes with cognitive behavioral therapy and predictors of treatment response. *Journal of Psychiatric Research*, *45*(5), 577-587. doi:10.1016/j.jpsychires.2010.09.007
- Schilbach, L., Eickhoff, S. B., Rotarska-Jagiela, A., Fink, G. R., & Vogeley, K. (2008). Minds at rest? Social cognition as the default mode of cognizing and its putative relationship to the 'default system' of the brain. *Consciousness and Cognition*, *17*(2), 457-467.
doi:10.1016/j.concog.2008.03.013
- Silk, J. S. (2006). Mahayana. Retrieved from <https://www.britannica.com/topic/Mahayana>

- Skuse, D. H., & Gallagher, L. (2008). Dopaminergic-neuropeptide interactions in the social brain. *Trends in Cognitive Sciences*, 13(1), 27-35. doi:10.1016/j.tics.2008.09.007
- Strimple, E. O. (2003). A history of prison inmate-animal interaction programs. *American Behavioral Scientist*, 47(1), 70-78. doi:10.1177/0002764203255212
- Tankersley, D., Stowe, J., & Huettel, S. A. (2007). Altruism is associated with an increased neural response to agency. *Nature Neuroscience*, 1-2. doi:10.1038/nn1833
- Thompson, J. M., & Cotlove, C. (2013). *The therapeutic process: A clinical introduction to psychodynamic psychotherapy*. Lanham, MD: Jason Aronson.
- Warneken, F., Hare, B., Melis, A. P., Hanus, D., & Tomasello, M. (2007). Spontaneous altruism by chimpanzees and young children. *PLoS Biology*, 5(7), 1414-1420. doi:10.1371/journal.pbio.0050184
- Weng, H. Y., Fox, A. S., Shackman, A. J., Stodola, D. E., Caldwell, J. Z., Olson, M. C., . . . Davidson, R. J. (2013). Compassion training alters altruism and neural responses to suffering. *Psychological Science*, 24(7), 1171-1180. doi:10.1177/0956797612469537
- Wilson, E. O. (2012). *The social conquest of Earth*. New York, NY: W.W. Norton & Company Ltd.
- Yam, K. (n.d.). Internet sent 157 shirts to girl with autism after learning it was her fave. *The Huffington Post*. Retrieved from http://www.huffingtonpost.com/entry/hundreds-of-shirts-come-in-for-girl-with-autism-who-wore-out-her-favorite-top_us_57b5ecc8e4b03d513686c05a
- Zak, P. J., Stanton, A. A., & Ahmadi, S. (2007). Oxytocin increases generosity in humans. *PLoS ONE*, 2(11), 1-5. doi:10.1371/journal.pone.0001128

APPENDIX A

Extended Review of the Literature

APPENDIX A

Extended Review of the Literature

Author/ Year	Research Questions/ Objectives	Sample	Variables/ Instruments	Research Approach/ Design	Major Findings
Beckmann, DeLuca, Devlin, & Smith, (2005)	To analyze fMRI data acquired when people are resting to examine the spatio-temporal structure and demonstrate that it works as an effective tool for the identifying patterns of resting-state	10 subjects	fMRI data	Examine data from fMRI activity when participants are at rest. Analyze the data using probabilistic independent component analysis (PICA) approach	Resting patterns largely occur within our grey matter; there is a different spatial trait to ICA maps of major blood vessels; resting-state patterns appear the same across subjects, identifying functional networks for visual, sensory or motor functions
Brown, Considine, & Magai, (2005)	To determine physical benefits associated with altruism (with a focus on physical health and longevity)	1,118 older adults from Brooklyn New, York	Network Analysis Profile (NAP), Comprehensive Assessment and Referral Evaluation (CARE), Activity Limitation scale of the CARE instrument	Used multiple regressions to compare physical health in relation to individuals who receive support from others and those who give support to others using the measures listed previously	Providing support to others predicts lower morbidity; type of support (family, non-family) does not impact the benefits

De Dreu, Greer, Handgraaf, Shalvi, Van Kleef, Matthijs Baas, ... Feith (2010)	To assess the effects of oxytocin on altruism toward “in-group” and “out-group” individuals	49 healthy males	Computer game that measures how altruistic are toward others; variable=exposure to oxytocin	Computer-mediated, double-blind, placebo-controlled design	Oxytocin increases trust for “in-group” individuals and cooperation; increases “defensive aggression” when needed toward “out-group” individuals
de Waal (2008)	To examine relationship between empathy and altruism	NA	NA	Literature review	Empathy motivates directed altruism; empathy evolved from concern for others and perspective-taking; empathy mechanism is congruent with kin selection and reciprocal altruism theories
Decety, & Jackson, (2004)	Examines the literature and based on literature, proposes a neural model of empathy	NA	NA	Literature review	Self-awareness, mental flexibility, and emotion regulation are essential for empathy; they all have in specific neural networks; deficits in any network may result in social and neurological diagnoses
Emmons, & Stern, (2013)	Analyze the benefits of gratitude in therapy	Available literature and 35-year-old	Clinical therapy with incorporated expressions of gratitude	Literature review and case study	Incorporating gratitude practices are healing; may enhance therapy progress

		woman			
Etkin, Phil, Pittenger, Polan, & Kandel, (2005)	Review literature on changes in brain function as a result of psychotherapy interventions	NA	NA	Literature review	Therapy impacts the brain with detectable changes; conscious and unconscious levels have unique operating and mechanical differences; individuals with depression and OCD have differences in their basal brain metabolism or basal cerebral blood flow; people with depression exhibit a decrease in basal dorsolateral prefrontal cortex activity and an increase of activity in the ventrolateral prefrontal cortex
Fiske, (1980)	To assess and determine how much attention people give to negative versus positive experiences	Ninety-six Harvard-Racliffe undergraduates	Different groups were shown photos of positive, negative, and neutral behaviors. Measure time spent look at pictures and administered A likability scale	Participants were randomly assigned to groups. Each group saw photos of people engaging in different behaviors. Looking times and a likeability scale were	People generally spent more time looking at people who were engaged in negative behaviors than those engaging in positive or neutral behaviors; indicated that people's pay more attention to negative behaviors

				measured and compared.	
Frewen, Dozois, & Lanius, (2008)	Study the results of studies that examine the effects of psychological interventions on mood and anxiety disorders	NA	NA	Empirical and methodological review	Therapy results in improved affective regulation and increased modulation of brain activity within the dorsolateral, ventrolateral, and medial prefrontal cortices, the anterior cingulate, the posterior cingulate/precuneus, and the insular cortices, all areas that correspond with diagnoses
Gilbert, (2009)	Introduce compassion-focused therapy (CFT) and how it impacts therapy	NA	NA	Literature review	Self-criticism and shame show up in multiple diagnoses; CFT argues that shame and self-criticism decrease affect regulation; CFT results in feelings of safety, ability to self-soothe, warmth via self-compassion and compassion
Gintis, (2016)	Examine the evolutionary theories related to the origins of altruism	NA	NA	Literature review	Altruistic behaviors cause people to experience positive feelings, which indicates an evolutionary origin; people experience negative affect when they engage in selfish behaviors; societies/groups

					create laws that punish selfish; successful communities use altruistic norms, suggesting that they have a positive impact on a society's survival
Hardy, & Van Vugt, (2006)	Study how altruism is changes when behaviors are private or public and how altruism impacts social status	Sixty-six college volunteers	Participants are introduced to the public good dilemma; Variable=whether altruistic behaviors were public or private; status questionnaire	Random assignment to groups; compared generosity with the two variables; mean score was analyzed using a one-way ANOVA; Social Relations Model used	In public, altruism increases; people who are altruistic were viewed as having higher status; altruistic individuals were chosen as leaders by others more often; altruistic people made less money
Harris, (1977)	To assess whether affect and mood were impacted by altruism/helping others	157 male and 159 female college students	Variable= whether or not the individual engages in altruism; people in two groups: one-directed to act altruistically, two- choose to engage in altruism	Random assignment; moods/affect were measured, rated, and compared	Mood improved and positive feelings increased when people engaged in altruistic or helping behaviors
Jenkinson, Dickens, Jones, Thompson-Coon, Taylor, Rogers,	Examine potential effects (physical, mental health, and survival) of formal volunteering	Forty papers (five randomized controlled trials (RCTs), seven	Papers were selected and reviewed	Review studies that examine physical outcomes, mental health outcomes, and mortality of volunteers	Available literature shows that that volunteering has a positive impact on depression, life satisfaction, and well-being; volunteers demonstrated lower

... Richards, (2013)	g .	papers); four non-RCTs; and 17 cohort studies (29 papers) from 12 electronic databases		compared to non-volunteering groups	mortality; is also benefits mental health
Karlsson, (2011)	To review existing literature on how therapy effects brain activity in specific regions	NA	NA	Literature review	In individuals with MDD, obsessive-compulsive disorder, panic disorder, social anxiety disorder, specific phobias, posttraumatic stress disorder, and borderline personality disorder (BPD), there are differences in brain function/structure are impacted by changes in our psychological process and are impacted by cognitive-behavioral therapy (CBT), dialectic behavior therapy (DBT), psychodynamic psychotherapy, and interpersonal psychotherapy; the dorsolateral prefrontal cortex, ventral anterior

					cingulate cortex, dorsal anterior cingulate cortex, ventral and dorsal subregions of the medial prefrontal cortex, posterior cingulate cortex, precuneus, insular cortex, amygdala, and ventrolateral prefrontal cortex are the brain areas related to problem-solving capacities, self-representation, and affect-regulation
Killias, Aebi, & Ribeaud, (2000)	To determine the impact of community services versus prison sentences on convicts	123 convicts	Individuals were convicted of a crime and punished with volunteering requirements or prison time; questionnaire to assess attitudes re the justice system; police records for re-arrests were examined	Randomly assigned convicted individuals; measured and compared questionnaire scores and re-arrest records	Participants who volunteered were re-arrested less often; people assigned to prison demonstrated more unfavorable attitudes toward their sentence and the criminal justice system in general
Le Galliard, Ferriere, & Dieckmann, (2005)	To study the evolution of tribes in relation to altruism	NA	NA	Literature review	In a community/society, increased altruism often occurs before or after their mobility decreases

Mallinckrodt, (1989)	To examines the effects of internal and external support within a group therapy setting and to identify and assess potential mechanisms of action	26/37 completed pre and posttest measures; clients were seen at a university counseling center	Rosenberg Self-Esteem Scale; Social Provisions Scale; Beck Depression Inventory; The Bell Global Psychopathology Scale	Random assignment into six weekly therapy groups (closed and time-limited); one-way multivariate analysis of variance (MANOVA) used to compare the various groups	Support from out of group individuals was related to improved self-esteem and decreased depression; clients demonstrated an increased support system in and out of groups; nurturing others provides more psychological benefits and coping skills than being supported
Moll, & de Oliveira-Souza, (2007)	To examine neural and cognitive mechanisms that determine moral behaviors	NA	NA	Literature review of studies that look at brain damage in specific regions and how that impacts moral behaviors	VMPFC is essential for moral behavior, predicting potential outcomes, associative learning, and the ability to evaluate behavioral patterns; damage to the VMPFC leads to impairment in moral behavior/reasoning; damage associated with more utilitarian choices; VMPFC-FPC may enhance prosocial moral sentiments
Moll, Krueger, Zahn, Pardini, Oliviera-Souza, & Grafman, (2006)	To study the neural mechanisms that support charitable donations	19 participants	fMRI; Variables= (1) pure monetary reward, (ii) noncostly donation, (iii) noncostly opposition,	fMRI used to examine brain activity while individuals anonymously donate or oppose charities associated with societal	Mesolimbic reward system activates in the same way in reaction monetary rewards and donating to others; medial orbitofrontal-subgenual and lateral orbitofrontal

			(iv) costly donation, and (v) costly opposition; people chose to donate or not to donate	causes	are related social attachment and aversion, which impacts their decisions to donate or to oppose these social causes); anterior sectors of the prefrontal cortex are more active related to altruistic choices when compared to selfish choices
Nakamura, & Iwasab, (2006)	To examine how altruism and punitive behaviors coevolved	NA	NA	Literature review	Punishing selfish behaviors promotes people behaving altruistically to non-family members; people who are altruistic demonstrate fewer mental disturbances
Okiishi, Lambert, Neilsen, & Ogles, (2003)	To identify the therapist characteristics that have an impact on treatment outcomes of clients	91 therapists from university clinic (collectively saw 1841 clients over two years) measures)-used clients who had pre and post data	Outcome Questionnaire-45 administered to participants weekly	Hierarchical Linear Modeling was used to compare clients outcomes with various characteristics of the therapist	Therapeutic outcomes impacted by quality of therapeutic relationship; not by type of training, years of training, theoretical orientation, or gender

Pancer, Brown, Henderson, & Ellis-Hale, (2007)	To assess how mandatory community services impacts future volunteering and how participants feel about volunteering	1,464 university students	Half of the individuals were not required to volunteer; half of the participants were required to complete community service	Quasiexperimental study that utilized surveys and interviews to determine the impact of volunteering; multivariable analysis was then conducted on the data	Factors that impact how likely a student is going to volunteer after high school are quality of volunteering experience in high school; future volunteering was not impacted by required volunteering in high school; even required volunteering increased the likelihood that a person would volunteer in the future and that they would have positive attitudes toward volunteering
Porto (2009)	To examine the neurobiological that occur when using CBT for anxiety disorders with neuroimaging techniques; to use data to identify things that impact response to treatment	NA	NA	Systematic review of a variety of studies that look at CBT and resulting neurobiological changes	CBT impacted the neural circuits related to regulating negative emotions and related to fear extinction; individuals with OCD who have higher activity in the left orbitofrontal cortex were associated with improved outcomes in response to behavioral therapy; CBT changed existing dysfunctions within the nervous system
Post, (2005)	To summarize and present	NA	NA	Literature Review	Altruism increases positive interactions, helps

	the existing research that examines altruism and its relationship to mental and physical health				people reengage with their external environment, reduces negative thoughts/mental disturbances, decreases depression, and reduces anxiety; decreases somatization; altruistic behaviors improve mood and increase positive feelings; being altruistic has more benefits than receiving altruism; is associated with improved immunological functioning and mental health; increased feelings of wellbeing, self-esteem, and morale
Preston, (2013)	To examine current perspectives on altruism by studying the biological base of altruism	NA	NA	Literature Review	Sympathy promotes altruism; sympathy and empathy evolved from parental/caregiving behaviors; female rats work tirelessly to rescue pups that they are not related to; a gorilla rescued a young boy who fell into the enclosure at the zoo; apes, dogs, and dolphins also exhibit helping behaviors toward others; apes even console other apes when they are in

					distress
Ritchey, Dolcos, Eddington, Strauman, & Cabeza, (2011)	Identify brain irregularities of MDD and how they are impacted by therapy	22 unmedicated MDD clients and 14 controls clients	Used fMRI to scan participants while they performed an emotion evaluation task; Individual CBT provided. Post tx, individuals scanned again. The BDI was used pre and post	Two-sample t-tests used for three contrast types; calculated the across-subject voxel-wise to compare pre-treatment brain activity for MDD participants and other measures of improvement; voxel-wise paired-sample t-tests were used to compare MDD group pre- scans to the post TX control	Therapies enhance activity in ventromedial prefrontal cortex, which is associated with a reduction in symptoms associated with depression; therapy also correlates with an improvement in the amygdala's ability to discern between emotional items and neutral items; if these brain patterns are altered by psychotherapy, medication, exercise, or changes in lifestyle, symptoms will decrease or disappear
Schilbach, Eickhoff, Rotarska-Jagiela, Fink, & Voegeley, (2008)	To identify brain regions associated with the DMN and to determine the functions of the DMN areas	NA	NA	Meta-analysis of 12 fMRI studies	DMN includes medial frontal and parietal brain regions; DMN is associated with empathetic attunement to others social cognitive processes; literature indicates that the brain's physiological 'baseline' connected to a "psychological

					‘baseline’”; human beings are predisposed to social cognition as their default mode
Skuse, & Gallagher, (2008)	To examine studies of how oxytocin neuropeptides impact the social brain; to study how genes impact social processing and social behavior	NA	NA	Literature Review	Altruistic behaviors trigger increased activity in the frontal lobes, an area of the brain associated with both abstract and social functioning; altruism increases activity in the orbitomedial prefrontal cortex, an area of the brain that inhibits the amygdala; Altruism also increases oxytocin, decreases cortisol, and inhibits the amygdala via increased activation in the orbitomedial prefrontal cortex; decreases fear responses and stress, further facilitating secure attachments; activating the frontal lobe, an area that associated with social and interpersonal connections

Strimple, (2003)	To study the existing literature on prisons and animal/rehabilitation programs; to argue that further study is needed and that funds should be given to determine the benefits of these programs	NA	NA	Literature Review	Prisons that have implemented programs that have prisoners training shelter and service dogs as part of their rehabilitation demonstrate improvements through a decreased number of infractions and improved social skills; prisoners who participated also demonstrated increased self-esteem and decreased symptoms of depression
Tankersley, Stowe, & Huettel, (2007)	To differentiate activity in the posterior superior temporal cortex during “action perception” and “action performance”	45 participants,	Reaction-time and brain activity in the MRI scanner; two fMRI experiments; participants either played or watched reaction-time game where they could earn money for a charity or themselves	Quasiexperimental. Participants were randomly assigned to groups. Everyone knew which experiment the person was participating in. Brain activity was compared and analyzed.	Altruism is associated with improved physical health; is related to more activity in the posterior superior temporal sulcus, a brain region that impacts the ability to develop interpersonal connections, social capacities, empathy, and theory of mind; more altruistic individuals demonstrated increased pSTC activation

Warneken, Hare, Melis, Hanus, & Tomasello, (2007)	To examine how human altruism evolved and whether it exists in human's evolutionary relatives	36 semi-free ranging chimpanzees born in the wild; 36 18-month-old human infants	Participants were studied in situations where they could choose to be altruistic; 3 designs: altruism did not impact participant, altruism resulted in a reward for participant, and participants were punished for altruism	Observational studies of chimpanzees and human infants; compared the data from three groups	Human altruism likely conserved through evolution as similar characteristics can be seen in chimps, apes, and other primates (toward troop members and strangers); chimpanzees demonstrate aspects similar to altruism in humans; indicates that human altruism has existed far longer than we initially thought
Weng, Fox, Shackman, Stodola, Caldwell, Olson, . . . Davidson, (2013)	To examine whether compassion can be increased with training and that compassion training, even short-term, increase altruistic behaviors	41 participants (age=18-45), MRI-compatible, right-handed, and no experience with meditation or CBT.	Guided audio instructions used 30 minutes everyday for 2 weeks. COM participants worked on increasing compassion for someone else; REP participants practiced decreasing negative affect by making new meaning of personal stressful events; measure includes	Randomly selected to COM or REP; introduced to assigned strategy, completed pre-training fMRI scan; began the intervention; the post-training fMRI scan and the altruistic behavior task, which occurred outside of the scanner	Training can enhance compassion; increased altruism occurred in relation to neural systems connected to empathy, emotional control, and executive control; compassion training lead to greater altruistic behavior and changes in brain activity in regions related to social cognition and emotion regulation (inferior parietal cortex, dorsolateral prefrontal cortex (DLPFC), and DLPFC connectivity with the nucleus

			altruistic behaviors in the Redistribution game		accumbens); indicates that compassion training may increase altruism
Zak, Stanton, & Ahmadi, (2007)	To review the physiological mechanisms that impact altruistic behaviors and generosity	136 healthy adults	Variable=experiment to increased oxytocin; altruism measured within two computer games: Dictator game and Ultimatum game	Randomly assigned, double-blind study; assigned to pairs with no opportunity for pre- or post-decision communication.	Altruism correlates with increased oxytocin; generosity improved with increased oxytocin; generosity related to both altruism and the ability to emotionally identify with others

TABLE REFERENCES

- Beckmann, C. F., DeLuca, M., Devlin, J. T., & Smith, S. M. (2005). Investigations into resting-state connectivity using independent component analysis. *Philosophical Transactions of the Royal Society: Biological Sciences*, *360*(1457), 1001-1013.
doi:10.1098/rstb.2005.1634
- Brown, M. B., Consedine, N. S., & Magai, C. (2005). Altruism relates to health in an ethnically diverse sample of older adults. *Journal of Gerontology: Psychological Sciences*, *60B*(3), P143–P152. doi:10.1093/geronb/60.3.P143
- De Dreu, C. K., Greer, L. L., Handgraaf, M. J., Shalvi, S., Van Kleef, G. A., Matthijs Baas, ... Feith, S. W. (2010). The neuropeptide oxytocin regulates parochial altruism in intergroup conflict among humans. *Science*, *328*, 1408-1411. doi:10.1126/science.1189047
- de Waal, F. B. (2008). Putting the altruism back in altruism: The evolution of empathy. *Annual Review of Psychology*, *59*, 279-300.
- Decety, J., & Jackson, P. L. (2004). The functional architecture of human empathy. *Behavioral and Cognitive Neuroscience Reviews*, *3*(2) 71-100. doi:10.1177/1534582304267187
- Emmons, R. A., & Stern, R. (2013). Gratitude as a psychotherapeutic intervention. *Journal of Clinical Psychology*, *69*(8), 846-855. doi:10.1002/jclp.22020
- Etkin, A., Phil, M., Pittenger, C., Polan, H. J., & Kandel, E. R. (2005). Toward a neurobiology of psychotherapy: Basic science and clinical applications. *Journal of Neuropsychiatry Clinical Neuroscience*, *17*(2), 145–158. doi:10.1176/jnp.17.2.145
- Fiske, S. T. (1980). Attention and weight in person perception: The impact of negative and extreme behavior. *Journal of Personality and Social Psychology*, *38*(6), 889-906.
doi:10.1037/0022-3514.38.6.889

- Frewen, R. A., Dozois, D. J., & Lanius, R. (2008). Neuroimaging studies of psychological interventions for mood and anxiety disorders: Empirical and methodological review. *Clinical Psychology Review, 28*(2008), 228–246. doi:10.1016/j.cpr.2007.05.002
- Gilbert, P. (2009). Introducing compassion-focused therapy. *Advances in Psychiatric Treatment: Journal of Continuing Professional Development, 15*, 199-208.
doi:10.1192/apt.bp.107.005264
- Gintis, H. (2016). The genetic side of gene-culture coevolution: Internalization of norms and prosocial emotions. *Journal of Economic Behavior and Organization, 53*(1), 57-67.
- Hardy, C. L., & Van Vugt, M. (2006). Nice guys finish first: The Competitive Altruism Hypothesis. *Personality and Social Psychology Bulletin, 32*(10), 1402-1413.
doi:10.1177/0146167206291006
- Harris, M. B. (1977). Effects of altruism on mood. *The Journal of Social Psychology, 102*(2), 197-208. doi:10.1080/00224545.1977.9713265
- Jenkinson, C. E., Dickens, A. P., Jones, K. S., Thompson–Coon, J., Taylor, R. S., Rogers, M. ... Richards, S. H. (2013). Is volunteering a public health intervention? A systematic review and meta-analysis of the health and survival of volunteers. *BMC Public Health, 13*(1), 773-773. doi:10.1186/1471-2458-13-773
- Karlsson, H. (2011). How psychology changes the brain. *Psychiatric Times, 28*(8), 1-5.
- Killias, M., Aebi, M., & Ribeaud, D. (2000). Does community service rehabilitate better than short-term imprisonment? Results of a controlled experiment. *The Howard Journal of Criminal Justice, 39*(1), 40-57. doi:10.1111/1468-2311.00152

- Le Galliard, J., Ferriere, R., & Dieckmann, U. (2005). Adaptive evolution of social traits: Origin, trajectories, and correlations of altruism and mobility. *The American Naturalist*, *165*(2), 206-224. doi:10.1086/427090
- Mallinckrodt, B. (1989). Social support and the effectiveness of group therapy. *Journal of Counseling Psychology*, *36*(2), 170-175. doi:10.1037/0022-0167.36.2.170
- Moll, J., & de Oliveira-Souza, R. (2007). Moral judgments, emotions and the utilitarian brain. *Trends in Cognitive Science*. doi:10.1016/j.tics.2007.06.001
- Moll, J., Krueger, F., Zahn, R., Pardini, M., Oliviera-Souza, R., & Grafman, J. (2006). Human fronto-mesolimbic networks guide decisions about charitable donation. *PLoS ONE*, *103*(42), 15623-15628. doi:10.1073/pnas.0604475103
- Nakamarua, M., & Iwasab, Y. (2006). The coevolution of altruism and punishment: Role of the selfish punisher. *Journal of Theoretical Biology*, *240*, 475–488. doi:10.1016/j.jtbi.2005.10.011
- Okiishi, M., Lambert, M. J., Neilsen, S. L., & Ogles, B. M. (2003). Waiting for supershrink: An empirical analysis of therapist effects. *Clinical Psychology and Psychotherapy*, *10*, 361-373. doi:10.1002/cpp.383
- Pancer, S. M., Brown, S. D., Henderson, A., & Ellis-Hale, K. (2007). The impact of high school mandatory community service programs on subsequent volunteering and civic engagement. *Knowledge Development Centre*.
- Porto, P. R., Oliveira, L., Mari, J., Volchan, E., Figueira, I., & Ventura, P. (2009). Does cognitive behavioral therapy change the brain? A systematic review of neuroimaging in anxiety disorders. *Journal of Neuropsychiatry*, *21*(2), 114-125. doi:10.1176/appi.neuropsych.21.2.114

- Post, S. G. (2005). Altruism, happiness, and health: It's good to be good. *International Journal of Behavioral Medicine*, 12(2), 66–77. doi:10.1207/s15327558ijbm1202_4
- Preston, S. D. (2013). The origins of altruism in offspring care. *Psychological Bulletin*, 139(6), 1305-1341. doi:10.1037/a0031755
- Ritchey, M., Dolcos, F., Eddington, K. M., Strauman, T. J., & Cabeza, R. (2011). Neural correlates of emotional processing in depression: Changes with cognitive behavioral therapy and predictors of treatment response. *Journal of Psychiatric Research*, 45(5), 577-587. doi:10.1016/j.jpsychires.2010.09.007
- Schilbach, L., Eickhoff, S. B., Rotarska-Jagiela, A., Fink, G. R., & Vogeley, K. (2008). Minds at rest? Social cognition as the default mode of cognizing and its putative relationship to the 'default system' of the brain. *Consciousness and Cognition*, 17(2), 457-467. doi:10.1016/j.concog.2008.03.013
- Skuse, D. H., & Gallagher, L. (2008). Dopaminergic-neuropeptide interactions in the social brain. *Trends in Cognitive Sciences*, 13(1), 27-35. doi:10.1016/j.tics.2008.09.007
- Strimple, E. O. (2003). A history of prison inmate-animal interaction programs. *American Behavioral Scientist*, 47(1), 70-78. doi:10.1177/0002764203255212
- Tankersley, D., Stowe, J., & Huettel, S. A. (2007). Altruism is associated with an increased neural response to agency. *Nature Neuroscience*, 1-2. doi:10.1038/nn1833
- Warneken, F., Hare, B., Melis, A. P., Hanus, D., & Tomasello, M. (2007). Spontaneous altruism by chimpanzees and young children. *PLoS Biology*, 5(7), 1414-1420. doi:10.1371/journal.pbio.0050184

Weng, H. Y., Fox, A. S., Shackman, A. J., Stodola, D. E., Caldwell, J. Z., Olson, M. C., . . .

Davidson, R. J. (2013). Compassion training alters altruism and neural responses to suffering. *Psychological Science*, *24*(7), 1171-1180. doi:10.1177/0956797612469537

Zak, P. J., Stanton, A. A., & Ahmadi, S. (2007). Oxytocin increases generosity in humans. *PLoS ONE*, *2*(11), 1-5. doi:10.1371/journal.pone.0001128

APPENDIX B
IRB Documentation

APPENDIX B

IRB Documentation

GPS IRB NON-HUMAN SUBJECTS NOTIFICATION FORM FOR RESEARCH THAT DOES NOT INVOLVE HUMAN SUBJECTS

Investigator Name: Erin Santos
Status: Faculty: _____ Graduate Student: Psy.D. Student
Faculty Chair (if applicable): Dr. Lou Cozolino
Proposal Research Title: Altruism in Psychotherapy: Altruistic Acts as an Adjunct to Psychotherapy

Per Pepperdine University Graduate and Professional School (GPS) Institutional Review Board (IRB) guidelines all proposed research that does not involve direct contact with human subjects requires a notification form be submitted for review.

Research that requires IRB review must meet the definition of human subject's research. The code of federal regulations provides the following definitions:

- **For the purposes of the IRB, research is defined as a systematic investigation designed to develop or contribute to generalizable knowledge.**
- **Human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains**
 - (1) **Data through intervention or interaction with the individual, or**
 - (2) **Identifiable private information.**

If your research does not involve the participation of human subjects **and** you are not using/collecting any data that has been obtained from individual participants, your research is not subject to IRB review and approval but does require the submission and filing of a non-human subjects notification form in the IRB office.

When submitting this notification form please include the following as separate documents:

- Signatures by ALL Principal Investigator(s) (student and/or faculty) and Faculty Chair when applicable.
- One page abstract outlining the study's research design and methodology.

I verify that this proposed research does not involve the use of human subjects, either directly or indirectly.	
<u>Erin Santos</u> Principal Investigator(s)/Student Signature	<u>6/23/18</u> Date
<u>[Signature]</u> Faculty Chair/Person Signature	<u>6/29/18</u> Date