

**Why Art Therapy Can Help:
A Heuristic Inquiry on the Neuroscientific
Basis for Physical and Emotional Healing
from Negative Life Events and Trauma
Through Art Therapy**

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Purpose Statement

The purpose of this study is to provide heuristic insight into how personal art practices can improve individual mental health and restore general well-being for those dealing with negative life events and the resulting stress and trauma.



Justification

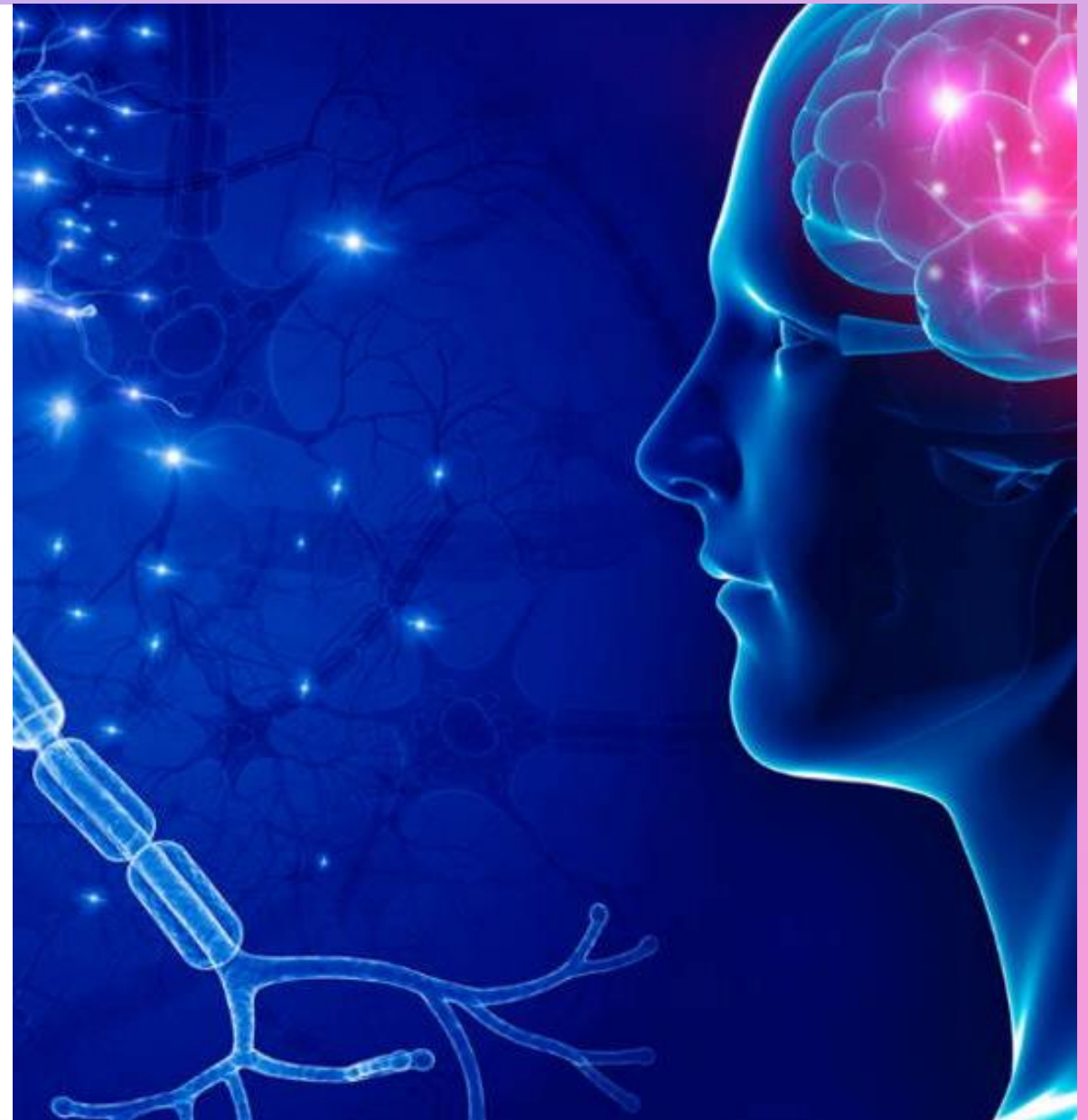
- As a burgeoning art therapist → I wanted to “practice what I preach”
- Recognizing traumatic events were affecting me → I turned to art therapy to alleviate symptoms
- 3 Negative Life Experiences (NLEs) →
 - Stage 3 Cancer
 - Daughter’s Mental Health + Substance Use
 - Caretaker at the End of Mother’s Life
- < 2 years = stress + trauma
- How can self-reflection through art-making remedy physical symptoms + foster the processing of emotional symptoms?
- What are the neuroscientific reasons why/how art therapy can help?



**practice
what
you
preach**

Terms

- **Mirror Neuron:** A type of brain cell that is activated both when performing an action and when observing another individual perform that same action, a process thought to help an individual recognize or understand the behavior of another. (Psychology Today, n.d.-b)
- **Neuroplasticity:** The physiological changes in the brain in response to learning or the processing of emotional stimuli. (Tamietto et al., 2012)
- **Neuroscience:** Examines the structure and function of the human brain and nervous system. Neuroscientists use cellular and molecular biology, anatomy and physiology, human behavior and cognition, and other disciplines, to map the brain at a mechanistic level. (Psychology Today, n.d.-c)
- **Greater Omentum:** The fatty tissue that secures the intestines and other abdominal organs in place, supplying them with blood and protecting them.



Literature Review

Mindfulness: Awareness + acceptance of one's experiences
MBAT: Promotes positive psychological + physical health

Combining expressive arts w/mindfulness promotes engagement in the present moment → resulting in: attention/emotion regulation + body awareness



Provides a sense of control + directs attention away from symptoms. (Bettencourt & Newland, 2020)

More effective at reducing negative moods than mere venting. (Rankanen et al., 2022)

Statistically significant positive effects on anxiety, depression, fatigue (Kimport and Hartzell, 2015) and fear, anger. (Isis et al., 2023)

Cancer patients → statistically significant fewer symptoms. (Monti et al., 2006)

Literature Review

Therapeutic Burnout: Vicarious + secondary trauma → emotional exhaustion = occupational burnout. (Delgadillo et al., 2018)



Ethical Responsibility for Maintaining Wellness: Mental health affects how we think/feel/act

ACA CoE → Responsibility to monitor for impairment → ethical obligation (American Counseling Association, Code of Ethics, 2014)

Literature Review

Trauma + the Therapeutic Value of Creating Art:

Negative Life Events (NLEs): Natl Center for PTSD → ICD-11 → psychological, physiological, + behavioral changes. (Faust et al., 2021)



Stress: 3 types = routine, sudden negative, traumatic → can be acute or chronic → cognitive, emotional, physical, behavioral. (Yarp, 2021)

Trauma: DSM-5 / 4 cats = intrusion/re-experiencing, avoidance of reminders/triggers, negative alteration in cognition/moods, + alteration in arousal/reactivity → somatic event affecting mind + body

Literature Review

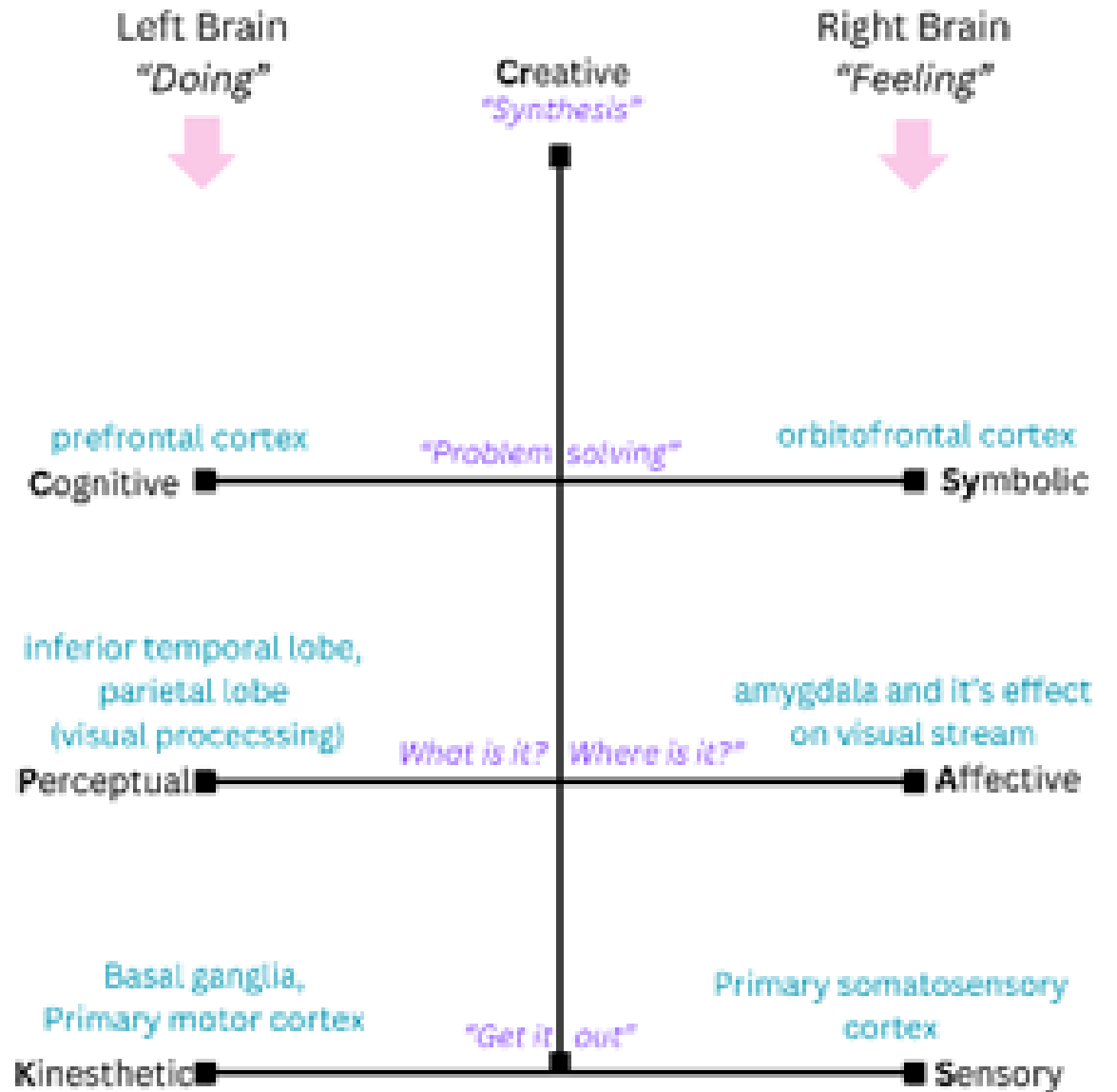
The ETC:

visual information processing + expression of increasing complexity. (Lusebrink, 2016)



ETC provides a structure to investigate the neurological mechanisms at work when utilizing various artistic mediums and examine the ensuing process of creativity. (Lusebrink & Hinz, 2016)

The brain processes sensory information in a bottom-up hierarchical way. (Fuster, 2003)



Literature Review

Creativity + Happiness:



Happiness = evaluating the satisfaction one has in their life → happiness/well-being/physical health

Well-being has also been related to creativity. (Tan et al., 2021)

Creativity = relationship between well-being + creativity is reciprocal. (Tan & Qu, 2014)

Literature Review

PTSD + Art Therapy: overstimulation of limbic system (Malchiodi, 2021) → dissociated fragments → prevent/delay formation of coherent trauma narrative (Howie, 2016) = difficult to treat with talk therapy alone → cortisol levels tested with art therapy → reduction in levels. (Kaimal et al., 2016)



Writing as Therapy: journaling = known to alleviate symptoms. (Baikie & Wilhelm, 2005)

Working with Clay: self-soothing properties = self-regulation. (Stuckey & Noble, 2010)

Bilateral Artmaking: engages both sides of the brain = self-regulation, (Malchiodi, 2021)

Literature Review

Neurological Testing on the Benefits of Creativity:

Current research = quantitatively measuring subjective states. (King et al., 2019)

Neurobiological changes studied:

Salivary markers of immune function (Collier, Wayment, & Birkett, 2016; Kaimal, Ray, & Muniz, 2016)

Heart rate variability -HRV (Haiblum-Itskovitch, Czamanski-Cohen, & Galili, 2018)

Electroencephalography - EEG (Belkofer et al., 2014; King, 2017; Kruk, Aravich, Deaver, & deBeus, 2014)

Functional magnetic resonance imaging - fMRI (Walker, Stamper, Nathan, & Riedy, 2018)

Functional near-infrared spectroscopy - fNIRS (Kaimal et al., 2017)

Biology can change as a result of art therapy interventions. (King et al. 2019)



Literature Review

Neurological Testing on the Benefits of Creativity:

The Brain + Art Therapy: Left brain = calculation/competition (McGilchrist, 2009) → Right brain = compassion/spontaneity → integration of both sides necessary for balance



Mirror neurons = clients gain more insight when they observe the therapist modeling a process. (Franklin, 2010)

Neuroplasticity = physiological changes the brain undergoes when learning/processing emotional stimuli. (Tamietto et al., 2012)

Project

Wondering about the efficacy of art therapy on the symptoms of stress + trauma → 3 NLEs experienced during 19 month period

Personal accounts of stressful situations → physical + emotional responses → research that supports the theory that art therapy can help alleviate/transform those symptoms

Fortunate to have pre-existing supports → personal, financial, educational, medical, professional

Events began during last week of undergrad + while applying to grad school

Symptoms began 6 months later

1st NLE experienced → art therapy attempted to ease symptoms
→ 2nd + 3rd NLEs experienced → art therapy continued



NLE#1: Residual Vomiting from Chemotherapy

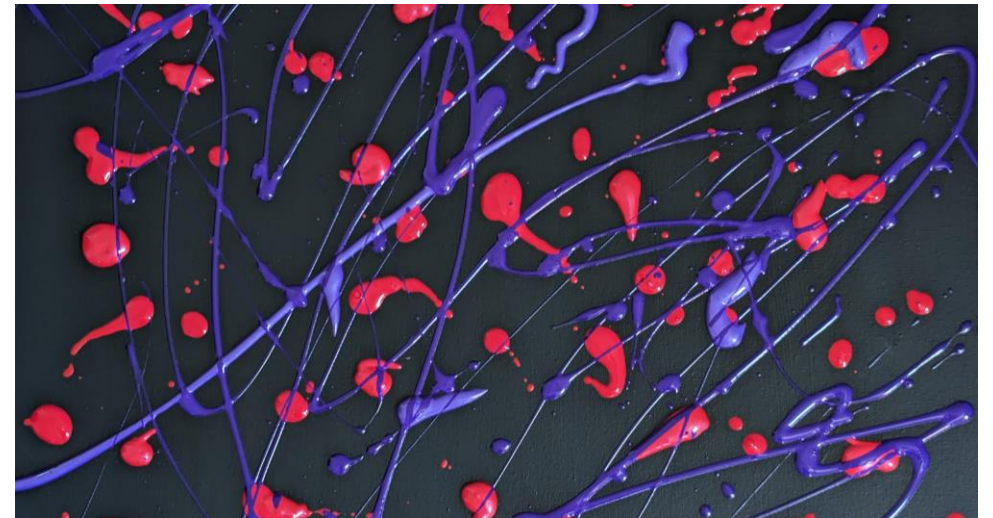
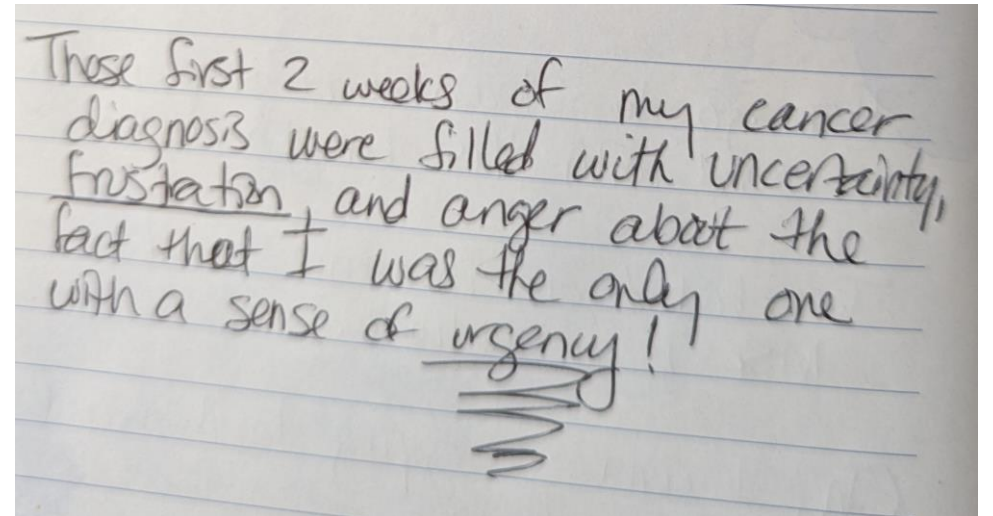
Excruciating pain woke me at 4am → ER visit → after 7 hours of testing → oncology consult needed

Mass on my ovaries the size of a softball → spread to uterus + omentum → Stage 3 Cancer

Chemo + surgery + chemo

9 months of daily vomiting from chemo → 3 months after chemo ended → still violently vomiting every morning → prompted by gyn obgyn to journal bc "there was no good reason I was still vomiting"

Journalled about the first 2 weeks of the diagnosis → response art → next day = no vomiting



NLE#2: Managing Stress While Dealing with Daughter's Mental Health + Subsequent Substance Use

Daughter between 14 - 16 yo → major depression + borderline personality disorder → each day we're greeted with a new version of our daughter

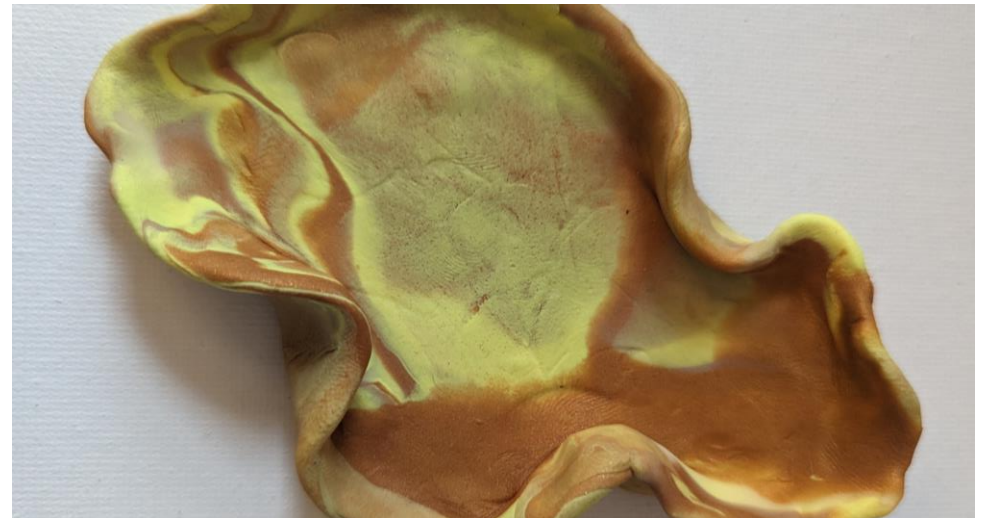
Substance use → never-ending cycle of use/stopping/lying/using → affects home life + grades

Mobile crisis → psych e.d. → partial hospitalization

School → possible need for repeating 11th grade

Social → unstable relationships = emotional see-saw

Physical symptoms → migraines, panic attacks, sleep disturbance, intrusive thoughts



NLE#3: Managing PTSD Symptoms Related to Being My Mother's Caretaker at the End of Her Life

Attributing symptoms to Lyme → testing + imaging = no answers → exploratory surgery → end of life stomach cancer

Was given 2 weeks to live → lasted 3 → lived in a rural area w/very limited services → disabled brother → unreliable partner → I became her caretaker → she was in agonizing pain

PTSD Symptoms: flashbacks → panic attacks → inability to focus → existential crisis

Bilateral painting: therapeutic +soothing, color didn't matter → process was the important part → using both sides of the brain → calming + lowered heart rate

First anniversary → did not paint (to compare experiences) → symptoms were unmanageable → altered daily life significantly



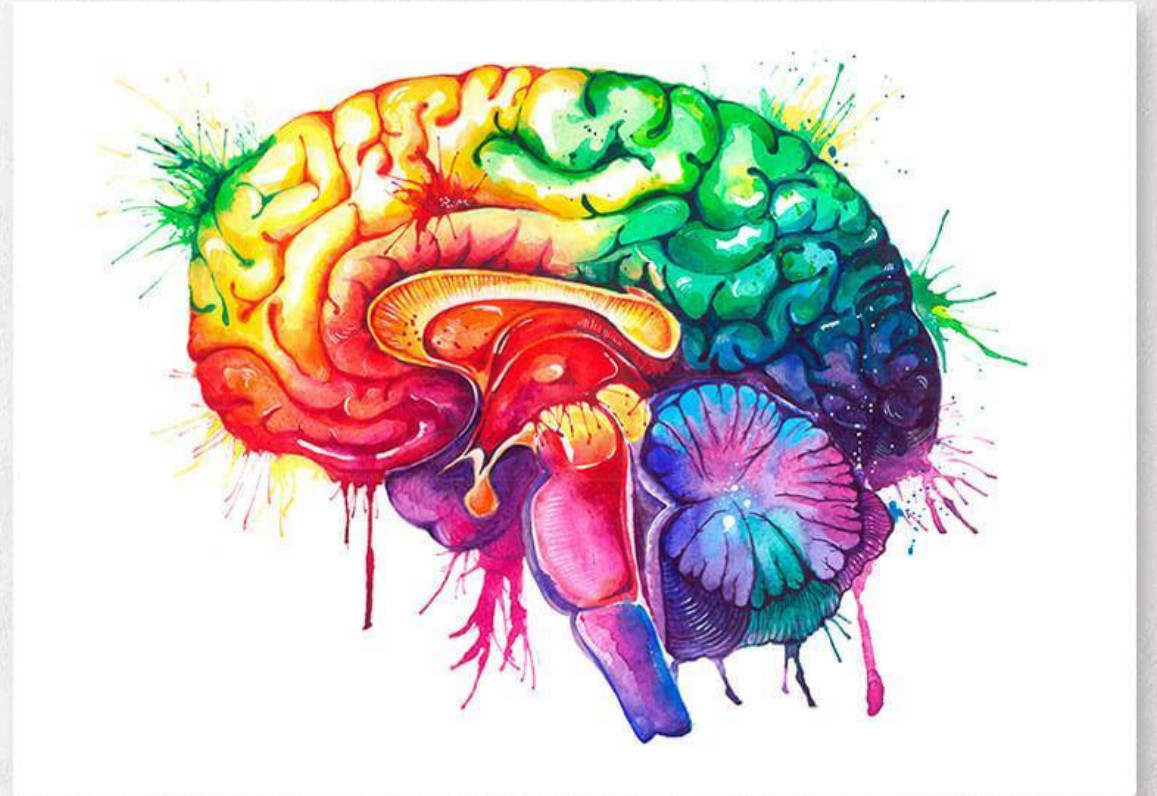
Limitations

- Personal bias is intrinsically linked to a heuristic inquiry
- Not easily reproduced
- Everyone experiences stress + trauma in different ways
→ therefore, ways to reduce the physical + emotional symptoms will vary



Areas for future exploration

- Are somatic symptoms easier to resolve than emotional ones? → If so →
- Why are emotional symptoms more resistant to change?
- Does everyone require both cognitive + creative outlets to fully process their symptoms? →
- Or can some people/problems be quieted with one or the other?



Final Thoughts

- The latter part of the project was difficult to complete
- Procrastination → comes from an inability to regulate a negative emotional state
- Emotions were difficult to process and expel
- Trauma lives in our cells → being consciously ready to move on doesn't mean we are physically ready to so
- Processing trauma → *doing the work* → may not proceed with ease or straightforwardness
- Emotional + physical distress → caused by stress + trauma → can be positively altered with the use of art therapy



QUESTIONS?

