# The Psychodramatic Mirror or the Deliberately Distorted Mirror Image: Neurological Impact of the Mirror Technique in Exploring Internal Psychological Dynamics.

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#### Abstract:

In psychodrama, the mirror technique, as developed by Jacob L. Moreno, serves as a pivotal method for enhancing self-awareness and facilitating emotional and cognitive transformations. This technique, especially when used in its form of a deliberately distorted mirror image, not only impacts psychological healing but also has profound effects on neurological processes. This paper explores the intersections between the mirror technique in psychodrama and its neurological underpinnings, illustrating how such therapeutic interventions can modify brain functioning and contribute to understanding internal psychological dynamics.

#### 1. Introduction:

Psychodrama, founded by Moreno in the early 20th century, integrates roleplaying and guided drama to treat psychological issues. One of its core techniques, the mirror technique, involves reflecting an individual's behaviors and emotions through another actor, sometimes presenting these characteristics in an exaggerated or distorted form to make them more recognizable to the subject. This technique not only offers a unique perspective for the participant but also invokes significant neurological responses due to its intense emotional and cognitive engagement.

#### 2. Philosophical Underpinnings of the Mirror Technique:

The mirror technique can be traced back to philosophical concepts concerning self-awareness and the nature of reality. Philosophers like Lacan discussed the "mirror stage" as a crucial phase in the development of the ego, where a child recognizes their reflection as themselves, which is both a literal and metaphorical concept in understanding human consciousness (Lacan, 1949). In psychodrama, this technique transcends the simple reflection of traits, inviting a deeper engagement with one's shadow self, as conceptualized by Carl Jung, where the shadow self represents the parts of our psyche that we deny or ignore (Jung, 1951).

The mirror technique, drawing from deep philosophical roots, has found substantial application in both psychotherapy and cognitive neuroscience. This technique's origin can be traced to the conceptual frameworks proposed by Jacques Lacan and Carl Jung, who provided insights into the processes of self-recognition and the integration of the unconscious into the conscious self.

Jacques Lacan's exploration of the "mirror stage" in the development of the ego posits that an infant's recognition of their reflection marks the beginning of the ego formation. This stage is critical as it introduces the child to a mediated form of identity—mediated through an image, which is a significant departure from earlier forms of existential recognition that do not involve an external object (the mirror). Lacan suggests that this recognition plays a pivotal role in the individual's lifelong navigation of identity and reality, emphasizing the split between the inner self and the perceived external image.

Expanding on this foundation, Carl Jung's theories about the shadow. The concept of the "self" in Carl Jung's framework represents the archetype of wholeness and integration within an individual's psyche. It encompasses both conscious and unconscious elements, aiming to achieve a balance and unify the various aspects of the personality. Jung's idea of the self is different from Sigmund Freud's perspective, as Freud's focus was more on the division between the conscious ego, the id, and the superego, into the aspects of the psyche that are typically repressed or ignored by the conscious mind. Jung argued that the shadow self contains both negative and positive traits—impulses, desires, and instincts—that the conscious self does not acknowledge. In therapeutic settings, particularly in psychodrama involving the mirror technique, individuals are prompted to confront these hidden or suppressed aspects, effectively engaging in what Jung termed as "shadow work."

From a neuroscientific perspective, the act of confronting one's reflection and the associated psychological phenomena can be linked to specific neural activities.

Engaging with one's shadow through the mirror technique is thought to activate the prefrontal cortex,\*<sup>1</sup> involved in higher cognitive functions including self-awareness and emotional regulation, and the amygdala,\*<sup>2</sup> which plays a central role in processing emotions. This neural engagement is crucial for facilitating what is known as neural plasticity—the brain's ability to reorganize itself by forming new neural connections.

This reorganization is not a trivial change but a profound transformation that can alter the way an individual perceives themselves and their world. By confronting often uncomfortable truths about themselves, individuals can break free from old patterns of thinking and behaving, thus fostering a more integrated and authentic sense of self. This process, supported by the formation of new synaptic connections, illustrates the potential of the mirror technique not only to reflect but also to reshape one's psychological landscape.

the mirror technique serves as a powerful bridge between philosophical concepts of identity and modern neuroscientific applications. It facilitates a unique convergence of cognitive and emotional insights, leading to transformative outcomes in personal development and psychotherapeutic practices. As ongoing research continues to explore these intersections, the full scope of the technique's impact on both brain and behavior is likely to become even more elucidated.

### 3. The Neurological Impact of the Mirror Technique:

Recent studies in neuroscience have shown that engaging in reflective and theatrical practices like psychodrama can lead to significant changes in brain activity. The process of acting and viewing oneself from an external perspective can enhance neural plasticity, defined as the brain's ability to adapt to new experiences (Zatorre, Fields, & Johansen-Berg, 2012). When participants observe their mirrored

<sup>&</sup>lt;sup>1</sup>- The prefrontal cortex is a crucial region of the brain that is involved in complex cognitive behavior, personality expression, decision making, and moderating social behavior. It serves as the executive function center, orchestrating thoughts and actions in accordance with internal goals. This area of the brain is also key in the suppression of socially unacceptable impulses and the integration of emotional and cognitive processes (Miller & Cohen, 2001).

 $<sup>^2</sup>$  - The amygdala is a crucial brain structure involved in emotional processing and memory formation (LeDoux, 2000). In psychodrama, the mirror technique can stimulate the amygdala, thereby facilitating emotional insight and regulation (Goldberg, 2014).

selves, whether in a realistic or distorted manner, areas of the brain involved in self-reflection and emotional regulation, such as the prefrontal cortex and the amygdala, show increased activity (Goldberg, 2014).

Recent advancements in neuroscience have provided compelling evidence that engaging in reflective and theatrical practices, like those used in psychodrama, can precipitate significant changes in brain activity, particularly enhancing neural plasticity. Neural plasticity, as defined by Zatorre, Fields, and Johansen-Berg in 2012, is the brain's inherent ability to adapt to new experiences by modifying neural connections. This adaptability is crucial for learning and memory and plays a significant role in recovery from brain injury.

The mirror technique, a core component of psychodrama, involves participants observing themselves in a mirror, either in a realistic or distorted way, which facilitates a unique form of self-reflection. This act of viewing oneself from an external perspective, as if through the eyes of another, activates specific brain regions. Notably, increased activity is observed in the prefrontal cortex and the amygdala, as highlighted in studies by Goldberg in 2014. The prefrontal cortex is key to higher cognitive functions such as planning, decision-making, and moderating social behavior, while the amygdala is essential for processing emotions.

The activation of these areas during psychodramatic mirror techniques suggests a complex interplay between self-awareness, emotional regulation, and cognitive processing. When individuals engage in this practice, they not only see their physical selves but are also prompted to confront and reinterpret various emotional and psychological aspects of their identity. This confrontation and reevaluation can lead to a profound reorganization of the neural circuits involved in self-perception and emotional responses.

Furthermore, the theatrical element of psychodrama, where individuals enact different roles or perspectives, also contributes to this neurological impact. Acting out scenarios can help participants experiment with and understand various interpersonal dynamics and internal conflicts, leading to insights that resonate on both cognitive and emotional levels. This process not only facilitates a deeper understanding of oneself and one's behaviors but also promotes empathy, as participants often explore the perspectives and emotions of others. The neuroscientific implications of these practices are vast. By fostering new neural connections and enhancing the flexibility of existing ones, the mirror technique in psychodrama can aid in the psychological healing process, potentially alleviating symptoms of mental health disorders such as anxiety or depression, which are often linked to rigid patterns of thought and behavior. Additionally, the increased neural plasticity that results from these practices could improve cognitive function more broadly, including memory and adaptability to new situations or information.

In essence, the integration of neuroscientific research with psychodramatic practices offers profound insights into the therapeutic potential of the mirror technique. It underscores the intricate relationship between brain activity, psychological processes, and therapeutic outcomes, paving the way for innovative treatments that harness the power of neural plasticity to foster psychological wellbeing and cognitive health.

# 4- Distorted Mirrors and Vampiric Energy: Exploring Self-Reflection and Healing in Psychodrama:

The concept of the "deliberately distorted mirror image," as described by Lev Dag Blomkvist, is closely associated with the symbolic and psychological effects of vampires in metaphorical imagery. In psychodrama, this technique involves magnifying certain traits of the protagonist that they find undesirable, to provide an opportunity for self-correction and increased self-awareness. This method is a form of reflection, but modified to intensify specific characteristics, much like a distorted mirror distorts the image.

By drawing a comparison to vampires, as suggested by Blomkvist, these creatures do not reflect in mirrors, symbolizing the absence of a soul or self-awareness. Vampires, in this metaphorical sense, thrive by draining the energy of others, similar to individuals who are unable to engage in genuine self-reflection and impose their distorted perceptions on those around them, deriving their emotional strength from these interactions.

The connection between the deliberately distorted mirror image in psychodrama and the energy dynamics of vampires provides a rich exploration of how individuals either confront their true selves or avoid them. The distorted mirror forces the protagonist to confront an exaggerated aspect of themselves, which can lead to transformative self-realization, much like the confrontation one may face when seeing a distorted and disheartening image of oneself. (Blomkvist, n. D.)

This psychodramatic technique resembles the myth of vampires by suggesting that avoiding self-reflection—avoiding the mirror—keeps a person in a state of spiritual loss, metaphorically speaking. By engaging with this distorted reflection, it is not just about acknowledging flaws but about reclaiming a neglected or hidden part of the self. It is about confronting the internal vampire, which expels denial and derives energetic vampirism from others, to forge a path towards true self-awareness and healing.

The analysis presented Blomkvist on the use of the deliberately distorted mirror image in psychodrama and its connection to the myth of vampires shows that these techniques offer deep insights into the self and enhance self-awareness and psychological healing. Vampires, who do not appear in mirrors, symbolize the absence of self-reflection and the draining of emotional energy from others. The use of the distorted mirror in psychodrama forces individuals to confront and integrate the negative aspects of the self, leading to personal transformation and healing. This approach exploits powerful cultural symbols to enhance the effectiveness of the therapy and deepens the understanding of oneself and interpersonal relationships.

## 5- Exploring Internal Psychological Dynamics through Neurological Lenses:

The deliberate distortion in the mirror technique pushes individuals to confront uncomfortable truths about themselves, catalyzing a deeper psychological and emotional response than traditional reflection. This confrontation leads to a heightened state of cognitive dissonance where existing beliefs are challenged, triggering a complex cascade of neurological responses that can lead to transformative psychological outcomes (Festinger, 1957).

Neurologically, this can be observed as a shift in brain patterns from habitual neural pathways to new ones that incorporate these confrontations, potentially leading to improved adaptability and emotional resilience (Siegel, 2007). Furthermore, the use of distorted mirrors can help in the reintegration of traumatic

memories, often stored disjointedly in the brain, into the narrative of one's self, which is mediated by neural integration processes (van der Kolk, 2014).

The mirror technique, particularly when it involves the deliberate distortion of one's reflection, serves as a potent tool in psychological therapy by pushing individuals to confront uncomfortable truths about themselves. This confrontation is not merely psychological but elicits a complex cascade of neurological responses that can lead to significant cognitive and emotional transformations.

According to the theory of cognitive dissonance proposed by Leon Festinger<sup>\*3</sup> in 1957, when individuals are confronted with information that contradicts their existing beliefs, a state of psychological discomfort arises. This discomfort, or dissonance, acts as a motivator for change, pressing individuals to either adjust their beliefs or justify the contradictions to alleviate the discomfort. In the context of the mirror technique, seeing a distorted reflection challenges one's self-perception and identity, intensifying cognitive dissonance and compelling a reevaluation of self-concepts.

From a neurological perspective, as highlighted by Daniel Siegel in 2007, such confrontation leads to a shift in brain patterns. Habitual neural pathways, which represent our routine and often unchallenged modes of thinking and behavior, are disrupted during this intense engagement. The brain begins to form new neural connections that incorporate the insights gained from confronting these distorted reflections. This neuroplasticity not only facilitates cognitive restructuring but also enhances emotional resilience, as the brain adapts to accommodate and integrate new self-perceptions and realities.

Moreover, the use of distorted mirrors can play a crucial role in the therapeutic reintegration of traumatic memories. Traumatic experiences are often stored in the brain in a fragmented and disjointed manner, as described by Bessel van der Kolk in 2014. These unassimilated memories can lead to recurring psychological distress and are typically challenging to integrate into one's continuous life narrative. The

<sup>&</sup>lt;sup>3</sup> - Leon Festinger is a psychologist known for developing the theory of cognitive dissonance. This theory describes the psychological discomfort that arises when an individual holds conflicting beliefs, or when their beliefs are challenged by new information. Festinger's work has had a profound impact on the field of social psychology, influencing how we understand human behavior, motivation, and attitude change.

confrontational nature of the mirror technique, however, can trigger the neurological processes necessary for integrating these memories. By re-encountering these fragmented memories in a controlled and reflective manner, individuals can begin to weave these experiences into their overall self-narrative, mediated by neural integration processes.

This integration is facilitated by the brain's inherent capacity to link disparate neural networks, a process that is essential for emotional and cognitive healing. The engagement through the mirror technique encourages the brain to revisit and reorganize traumatic memories and the emotions associated with them, which can be crucial for psychological recovery and resilience.

the mirror technique, enriched by its ability to induce cognitive dissonance and promote neural plasticity, offers a profound therapeutic tool. It not only challenges the existing mental constructs but also encourages the formation of new, healthier patterns of thought and emotional responses. This scientific understanding underscores the value of reflective practices in psychological therapy, highlighting their potential to transform mental health fundamentally.

## 5. Conclusion:

The mirror technique in psychodrama, especially when it incorporates the use of distortion, represents a multifaceted therapeutic tool that impacts both the psychological and neurological dimensions of the human experience. This technique not only serves as a catalyst for deep introspection but also induces significant shifts in brain activity. By fostering the development of new neural connections, it facilitates profound psychological transformations, enhancing emotional resilience and promoting cognitive flexibility.

The process of confronting a distorted self-image through the mirror technique challenges entrenched self-perceptions and triggers cognitive dissonance. This dissonance, a state where existing beliefs are contradicted by new information, stimulates the brain's neuroplastic capabilities. Neuroplasticity, the brain's ability to reorganize itself by forming new neural connections, is central to how individuals adapt to new psychological insights and recover from traumatic experiences. This adaptation is crucial, as it underlies the therapeutic efficacy of the mirror technique, enabling individuals to integrate previously disjointed or repressed aspects of their self into a coherent whole.

Moreover, the neurological shifts that occur during this process can be profound. Areas such as the prefrontal cortex, involved in higher cognitive functions like planning and decision-making, and the amygdala, a key site for processing emotions, are particularly active. This heightened activity indicates a robust engagement with processes of self-reflection and emotional regulation, essential for therapeutic success.

Future research in this area could be incredibly fruitful. For instance, studies \* <sup>4</sup> employing functional magnetic resonance imaging (fMRI) or electroencephalography (EEG) could provide deeper insights into the specific brain activities and neural circuits engaged during the use of the mirror technique. Understanding the exact neural pathways affected could lead to more targeted therapeutic interventions, optimizing the use of psychodrama techniques for specific psychological issues.

Neuroscience, as defined earlier, is the scientific study of the nervous system. It provides deeper insights into the biological underpinnings of behavior and cognitive functions, which are crucial for understanding both normal and abnormal psychological states. By examining the neural mechanisms that govern behavior, neuroscience offers valuable perspectives on why individuals behave the way they do, how brain dysfunction correlates with various psychological conditions, and what strategies might be effective in modifying undesirable behaviors or treating mental disorders.

One of the most compelling applications of neuroscience in facilitating change is through its contribution to neuropsychology and neuroplasticity. Neuroplasticity refers to the brain's ability to change and adapt as a result of experience. This concept

<sup>&</sup>lt;sup>4</sup> - Functional magnetic resonance imaging (fMRI) is a neuroimaging technique that measures and maps brain activity by detecting changes in blood flow. When a brain area is more active, it consumes more oxygen, and fMRI can detect these changes in blood oxygenation and flow, which are referred to as the Blood Oxygen Level Dependent (BOLD) signal. This non-invasive method allows researchers to observe which parts of the brain are involved in specific mental processes, thereby providing real-time, spatially precise insights into the functioning of the human brain (Huettel, Song, & McCarthy, 2004). The relevance of fMRI lies in its ability to contribute to our understanding of brain function in both healthy individuals and those suffering from various disorders. By identifying specific brain regions activated during cognitive tasks, emotional responses, or sensory processes, fMRI aids in the research and diagnosis of neurological and psychiatric conditions, and it also helps in the development of targeted therapies.

is pivotal for therapeutic interventions, as it implies that the brain's structure and function can be modified through specific experiences and activities, such as cognitive behavioral therapy, mindfulness training, or even through pharmacological interventions. Understanding neuroplasticity allows clinicians and researchers to design and implement strategies that can effectively promote change in neural pathways, potentially leading to improved cognitive and emotional functioning (Kolb & Whishaw, 1998).

Furthermore, longitudinal studies could examine the long-term effects of such therapeutic interventions on brain plasticity and psychological health. By tracking changes over time, researchers could better understand the durability of the therapeutic benefits and possibly predict which individuals might gain the most from such interventions.

Additionally, integrating quantitative neuroscientific methods with qualitative psychological assessments could enrich our understanding of how subjective experiences during the mirror technique correlate with objective changes in brain activity. This multidisciplinary approach would not only validate subjective reports but also refine the theoretical models that explain how psychodrama facilitates psychological healing.

Neuroscience is the scientific study of the nervous system, encompassing various disciplines that range from molecular biology to cognitive science. It is fundamentally important in understanding how the brain and the rest of the nervous system operate both in health and disease. The insights gained from neuroscience are crucial for developing effective treatments and interventions for neurological and mental health conditions, thereby playing a pivotal role in medical and therapeutic processes (Bear et al., 2020).

As illustrated in the context of the prefrontal cortex, neuroscience helps elucidate the brain mechanisms underlying complex behaviors and cognitive functions. This understanding is essential in crafting targeted therapies that can address specific dysfunctions within the brain, ultimately aiding in the healing and management of various conditions (Miller & Cohen, 2001).

In conclusion, the mirror technique in psychodrama offers a promising avenue for therapeutic intervention, striking at the core of both neurological and psychological processes. Its ability to induce significant neural changes underscores its potential as a powerful tool in mental health therapy. With further research, the intricate dance between the brain's plasticity and psychological transformation could be better harnessed, leading to more effective and personalized therapeutic practices.

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