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The Extended Body: Vicarious Memories and Mimetic Capacities in Transgenerational Trauma

Nathália de Ávila

Department of Philosophy, Institute Vienna Circle / University of Vienna, Vienna, Austria

natdeavila@gmail.com

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Abstract: Drawing from enactivist theory, this paper examines how certain cases of transgenerational trauma manifest as Post-Traumatic Stress Disorder in the descendants of survivors who did not experience the event directly. It argues that psychopathology develops from an embodied form of vicarious memory, conveyed through mimetic capacities and emotional resonances that involve the transfer of emotional and behavioral patterns from parents to children, affecting their sense of self. Children's reenactments of their parents' emotional states do not merely replay the parents' trauma but are also perceived and integrated into the children's life as their own. This, in turn, biases their sense-making, which is further reinforced by background emotions in the household. Over time, certain mnemonic features contribute to the persistence of the initial emotional load, such as the simplification of events in collective memory and the reliance of embodied vicarious memories on somatic markers, which also fuel PTSD development. Finally, the paper briefly explores the implications of embodiment for understanding mnemonic causality.

Keywords: transgenerational trauma; emotional vicarious memories; embodiment

Introduction

Transgenerational trauma alludes to the far-reaching consequences of a traumatic event among family members. In this paper, which examines mostly literature about the Shoah, it is a feature of collective trauma - the psychological and emotional distress experienced by people who shared a common disturbing experience. When transgenerationality happens, the internalization of anxieties and fears are transmitted within the household. Young children feel

those emotions even when unable to precisely determine when something happened or why they feel it. This imprecision relies on the fact that silence is often the way families cope with this sensitive context, in which delicate topics are deliberately avoided. Communication can take indirect and ambiguous forms, so that children pick up on cues regarding the past and their parent's current demeanor. In some instances, only fragmented aspects of the experiences are revealed to the child. The absence of information or partial disclosure may prompt her to fill in the gaps with their imagination (or memory?), creating narratives that can be more terrifying than reality itself.

This lack of communication causes collective traumatic memories to be addressed by scholarship mostly through how they are received through cultural effort[1]. This paper, however, works through the framework of enactivism/embodied cognition[2] - a privileged frame of reference that allows one to find out what in those silences was being communicated. Its main objective is to provide a better understanding of how certain cases of this type of trauma become Post-Traumatic Stress Disorder in the survivor's descendants, as they did not experience the distressing event directly.

The empirical sciences examine similar cases through the notion of vicarious traumatization (McCann and Pearlman, 1990), where empathic engagement leads to symptoms manifesting as mental imagery formed through others' narrations—referred to as vicarious memory (VM). Vicarious trauma (VT) describes how health clinicians, through empathic involvement with their clients' past, may develop altered worldviews and issues with self-esteem and trust, potentially leading to PTSD (Tabor, 2011). This process often involves the clinician internalizing their client's painful experiences, which results in flashbacks, intrusive thoughts, and distressing memories of events they know are not their own (Pillemer et al., 2015). As the

[1] One example is Hirsch's (2008) concept of postmemory.

[2] Enactivism, grounded in the concepts of autopoiesis and autonomy, suggests that cognition and perception are shaped by an organism's interactions with the world and the world's responses to those actions. Living beings engage in self-organized, coherent activities as autonomous agents, whose minds are effective because they are intertwined with biological life. A key idea in this framework is "sense-making." These agents are constantly interacting with their environment, but their experiences are limited by what is contextually available. Sense-making refers to how autopoietic and autonomous systems create and sustain meaning to support their continued existence. In other words, living organisms are naturally inclined to interpret their surroundings in a way that helps them maintain themselves, assigning value to stimuli based on their survival relevance. This mutual relationship between organism and environment is shaped by adaptation and embodiment, governed by self-regulation, sensorimotor interaction, and social exchanges. The entire organism generates and interprets meaning through its structure and ongoing interaction with the environment. (Varela & Thompson, 1991).

traumatic event becomes central to the clinician's identity, higher levels of psychological distress can emerge, potentially resulting in PTSD (Tabor, 2011)[3].

However, both VMs and VTs, as discussed here, fall into what Turmakin (2013) once described as a cognitive bias overly focused on narration. She emphasized the importance of addressing intrapersonal forms of remembering through what is conveyed in silence or innuendo. Her exploration of this idea began when she interpreted her grandmother's habit of hunting breadcrumbs from the floor while she ate a sandwich as a form of remembering. It recalled the trauma of having survived starvation during war. This behavior, she argues, should be understood through what Edward Casey (1987) referred to as "thickening the understanding of memory"; which means that such a faculty must encompass not only what is immediately grasped by consciousness or conceptual understanding: it also should address the emotional load inherent in an event's original and transmitted meaning. This type of remembering, while not denying cognitive processes, operates pre-reflectively and is expressed through an active immanence of the past as embodied memory. Following Ollick's (2007) input, Turmakin suggests that memory might not be an outcome of social forms, but rather their *medium.*

Our embodied cognition framework opens up more conceptual possibilities for what embodied and vicarious memories might entail. For example, in interviews conducted by Kidron (2003: 20), descendants of survivors often had no clear answer to the question, "*What do you know about your parent's past?"* due to the silence surrounding it. However, when asked the rephrased question, *"Was the past present in your home?"* they had much to say, with some responses lasting over three hours. These answers focused on behaviors and habits, revealing how embodiment changes our understanding of memories as a broader concept. Along these lines, the pre-reflective embodied dispositions Turmakin seeks to classify as remembering may initially seem quite distinct from the notion of VM as previously defined: one involves repetitive behavior (e.g., picking up crumbs), while the other refers to mnemonic imagery derived from someone else's narrated life story. However, from an enactivist perspective, these two forms of memory do not have to be so different. Just as narrations can transmit memory, repetitive behaviors may also be inherited from another person's embodied life experience.

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[3] The phenomenon has been explained by the fact that they had already had a negative affect beforehand. This makes it easier for them to remember and integrate negative events from others to fit their schema (Blaney, 1986). PTSD in transgenerational trauma is a typical case of the mnemonic features of VT.

What an enactivist contribution approaching this phenomenon has to offer is addressing the problem through non-verbal interpersonal engagements that also communicate. And it has to, of course, justify how this is possible in terms of cognitive systems.

This paper argues that transgenerational trauma, when broadly understood, represents a form of emotionally charged embodied vicarious memory. I hypothesize that PTSD symptoms partially arise because survivors' descendants adopt the emotional load of these memories as their own from childhood through mimetic capacities and mirrored behaviors. This process is influenced by background emotions that bias experiences and by mnemonic factors that contribute to the persistence of this emotional load, such as the simplification of events in collective memory and the reliance of embodied vicarious memories on somatic markers.

In Section 1, I present enactivist assumptions regarding emotions, memory, and psychopathology. The aim is to outline the theoretical framework that subsequent sections will build upon and to demonstrate how the novel concepts and arguments fit within this framework. In Sections 1.1 and 1.2, I review existing accounts of memory that extend beyond intracranial processes, such as postmemory. However, I emphasize that none of them address imitated gestures, which can function as a form of embodied memory and can contribute to the formation of mental imagery. To address this gap, I propose an account of embodied vicarious memory. In Section 2, I argue that a compromised sense of self in survivors' descendants facilitates the persistence of embodied vicarious traumatic memories, as these memories are likely to remain vivid rather than fade and explain how observers trigger neural responses similar to those they observe. Sections 3 and 3.1 explore how early mimesis can lead to the phenomenon of background emotions—emotions that shape experiences and introduce biases—and how this can contribute to PTSD. Additionally, I discuss how mnemonic functions preserve an event's meaning over time. This preservation occurs differently in cases where interpersonal trauma is also collective, such as in the Holocaust. In these instances, collective memory and vicarious memory exhibit distinct characteristics, but both contribute to the persistence of a distressing event's meaning, with embodied memory being restaged in various contexts.

Section 1- Enactivist Assumptions

Emotions are embedded and extended. Embeddedness suggests that affectivity concerns interactions between individuals rather than just within a single person. This concept describes how people's emotions can amplify each other through their interactions. Embeddedness places significant emphasis on the social context, both in terms of how emotions arise and how they evolve over time (Griffths & Scarantino, 2005). Being extended implies that affectivity acts as a concentrated reflection of the surrounding environment. Enactivism builds on the idea that the lived body carries meaning, where expressions and gestures communicate effectively during interactions with others, leading to phenomena such as emotional contagion (Cole and Spalding, 2009; Krueger, 2014; Marzoli et al., 2013). Since the body conveys communicable meaning, a person's gestures or facial expressions can directly impact my own when we are in close proximity. As a person expresses emotions, these are mirrored in bodily gestures influenced by feelings such as wonder, delight, anger, or sadness. In this context, the environment shapes us as emotional agents, drawing emotions out of us rather than putting them in: an affective transmission. This transmission also involves mimetic capacities, which are the abilities to imitate and replicate observed behaviors, actions, expressions, and emotions from others. They hold a range of complexity fleeting from simple gesture imitation to social learning and emotional comprehension, as they slowly and diachronically weave a cultural embodied memory repertoire.

In the case of psychopathology, enactivism does not define a *mental* illness as a *brain* illness. Psychopathologies are outcomes of the interaction between a person and the world which tend to result, due to many reasons, in super biased patterns of behavior that can be very rigid or dysfunctional (De Haan, 2012). The focus is more on the person-world engagement and less on neural processes, as a mentally ill subject is not interpreted as someone with a *broken* cognition that is a *cause* of her condition. Pathology here is mostly an exaggerated behavioral disposition according to which someone makes sense of things.

Enactive remembering argues that memory is not a passive retrieval of static information but an active, embodied process intertwined with perception and action (Hutto & Myin, 2013; Di Paolo, Buhrmann & Barandiaran, 2017; Noe, 2004). It's a consequence of engaging with the world in ways that shape and are shaped by our ongoing interactions, constructed through sensorimotor experiences and emotional interplay. Past experiences are dynamically re-enacted and reinterpreted in the present moment. More recent accounts of emotional remembering in this

framework (De Ávila, *forthcoming)* show that a general concept of affectively-charged personal memory is one that re-creates an interaction or event through relevant bodily responses, which can range from a simple smile when recalling a friend to a PTSD-induced flashback with an increased heart rate. The intensity of these bodily responses depends on how emotionally connected a person remains to the past and/or how intensely it was integrated into someone's life story. An emotional memory exists in its fullest sense when it translates into action or an action tendency, such as recalling a childhood hometown and deciding to return there. In cases of transgenerational trauma, these memories often manifest as self-harm in the personal sphere, or through collective expressions like depicting the event in murals or graffiti, and even reenacting the trauma or types of torture once experienced.

Section 1.1- Towards non-declarative and non-representational ways of interpersonal remembering

In the existing literature, the concept of postmemory, for instance, partially integrates both remembering as a thickened concept and the subtleness of what, even through silence, is able to determine the dynamics within a household and partially fulfills what we mentioned to be Maria Turmakin's aim. Postmemory is a term coined by Marianne Hirsch (2008) to define a generational structure of transmission of an event through habitual dispositions that can be meaningful much later or be integrally accessed somewhere else. The prefix *post* alludes to indirect experience of a traumatic event within families of survivor's descendants. It refers at once to a posteriority in time and to the consequences and impacts of a fact to everyone in a family. Hisch highlights nonverbal acts of transfer which cause an event to be received not always discursively, mainly through photography and other media. She claims that it's impossible to have literal memories of other people's experiences because this concerns more of an imaginative realm. Yet this is precisely the concept of vicarious memory and vicarious traumatization already demonstrated by empirical sciences (Pillemer, 2015).

Hirsch (2008) understands those transmissions as, in her words, *"non-cognitive"* ones. Yet the statement seems to operate through a distinction enactivists do not agree to at all, namely the one between cognition and affectivity, as the author highlights that what is not cognitive about traumatic transfer is their emotional load. Here my account and that of Hirsch's and

Turmakin will differ completely. Enactivism claims that affective responses *are* cognition: they constitute how individuals act and attribute meaning to things and they're understood as embodied experiences emerging from constant interaction (De Haan, 2021). Cognition is not some type of intracranial information-processing, but rather what emerges from the ongoing interplay between subject and environment and it is, before anything, context-dependent. The implications for how memory can operate in this framework are not hard to see. If we consider emotional load as a form of cognition, we can turn to cognitive sciences as a way to determine if the transgenerational transmission of habits is indeed a postmemory or a type of traumatic vicarious memory shaped diachronically through interaction. This paper now argues for the latter.

Section 1.2- Mimesis as Embodied Remembering

Embodied cognition suggests that the way someone replicates others' gestures while forming a mnemonic repertoire of bodily dispositions can be considered a type, or even multiple types, of memory. Certain capacities within mimesis, understood as the ability to imitate others—such as gestures and pretend play, whether vicarious or not—are already forms of memory in themselves.. Mimesis make humans map actions onto event's perception, such as when a child imitates a fish by puckering its mouth[4]. It induces a layer of cultural interaction through an implicit grammar based on action and embodied practices (as extensively

[4] It is one of the most significant steps in the development of consciousness: the cognitive structure it demands is very specific. For instance, when someone reenacts dropping a ball at the goal line, the subject has to understand the point of view from the audience and somehow construct accuracy between the initial event and its embodied reenactment in a coherent way - not only a complex motor brain is necessary for this, but a comprehensive body awareness.

demonstrated by Donald, 2001) - it's a sort of first public dimension of personal identity[5]. For enactivists, recall doesn't always require mental imagery but instead always relies on an embodied, interactive process (Caravà, 2021). When replicating someone else's gesture, the body engages in sensorimotor activity, re-performing the observed action through physical experience. This goes beyond physical replication, for it engages both perceptual and motor systems to reenact observed gestures through one's own bodily experiences. From this perspective, mimicking a gesture is a form of memory, especially when it turns into a repetitive pattern triggered by certain events, like a child mimicking a fish multiple times. By embodying and repeating an observed movement, the individual accesses her sensorimotor engagement and bodily understanding through interaction. Imitation, therefore, requires engaging in both memory and learning, as the brain processes visual and kinesthetic information and retrieves it as motor patterns. Over time, this process strengthens memory, as it turns imitation into a type of motor skill that involves visual, motor, and procedural memory for smooth execution.

The concept of vicarious memory I'm exploring hinges primarily on mimesis as reenactment (the inclination of survivors' descendants to recreate their parents' experiences in their own lives through actions). What makes this exploration distinctly enactivist is its reliance on the body's communicative capacities and, as I shall argue in section 2, the need of embodied simulation as a means of understanding it. Imitating a fish might seem like nothing more than a simple mnemonic motor skill. But what if I recall an event that happened to someone else purely through embodied experience? Wouldn't that transform into a form of narration?

Philosophical discussions on memory, such as Righetti (2024); Dijkstra (2024); Trakas (2021); Martin and Deutscher (1966) - later referenced by Williamson and Sutton (2024), discuss similar themes of embodied episodic/autobiographical memory:

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[5] But the importance of mimesis is beyond this phase as it preserves rites and cultures diachronically. Mimesis is particularly efficient to communicate or regulate emotion. Affectivity facilitates sympathy and empathy and it is one of the first emotional bonds between two or more subjects (Kugiumutzakis et al., 2005). Even neonates display major interest for inter-mental and behavioral matching, in order to find a partner for emotional intersubjective games through which their identity is formed (Hobson, 2002). Reciprocal eye contacts, hugging, playing starts with the parents but eventually becomes reciprocal so that the child participates in a family routine. A structured framework gradually develops and extends into social interactions, shaping an ingrained set of behaviors that directs a child's focus throughout their lifetime. As a young mind absorbs and mirrors caregivers' expressions, it assimilates fresh behavior patterns within a collective educational journey, effectively becoming, besides embodied vicarious memories, a form of cultural memory constituted across time. This paper focuses, nonetheless, on the vicarious aspect of dyadic interactions.

> "the case where some swimming is an example of remembering and not, as is usual, an example of remembering how. Suppose that someone has never dog-paddled. He is not good at visualization and has never learned any words which would describe swimming. His method of representing the one time at which he saw a man dog-paddle is his actually doing the dog-paddle stroke. We can imagine him trying to remember the curious action that the man went through in the water. He cannot describe it, and cannot form any picture of it. He cannot bring it back. He gets into the water, experimenting a little until suddenly he gets it right and exclaims, "Aha, that's it!".
>
> (Martin and Deutscher 1966: 161–62)

If this happens with one's own memories, why not with someone else's? While it may seem odd to imagine someone recounting another person's story through purely bodily imitation—especially if the person isn't an outstanding mime—the absurdity of hypothetical scenarios is often overshadowed by the sheer strangeness of real life as it is. Gaensbaer (2011) mentions, for instance, that at the age of 2 and a half, Kevin experienced the tragic event of his father being fatally stabbed during a confrontation. By the time he was assessed at 4 years old, Kevin displayed consistent behavior of reenacting the incident frequently mimicking stabbing actions. A body does not reveal *where* or *when* something occurred, but it does convey *what* happened. I call this *embodied vicarious memory* because, while it engages the motor/cognitive skills involved in the previously-mentioned mimetic remembering, the event itself happened to another person. In this case, the child didn't experience being stabbed but witnessed it happen to their father. The reenacted memory is therefore not their own but vicarious—embodied through physical gestures rather than verbal recall.

This phenomenon demonstrates how memories of traumatic events, whether directly experienced or witnessed, can be absorbed and physically reenacted as a story to be told. In the next section, I will explore how this process of embodied memory occurs in trauma passed down through generations—where those who inherit it exhibit unique features related to identity.

While the earlier case did not investigate whether the child identified with the victim of the stabbing, such identification is often a key factor in transgenerational trauma.

Section 2 - The specificities of transgenerational trauma

Embodied memory, unsurprisingly, applies to both traumatic and non-traumatic cases simultaneously. As enactivism presupposes the phenomenological lived body, memory transcends mere learned routines (Gallagher, 2017), much like Merleau-Ponty's concept of intercorporeality (1960), where remembering is a product of social interaction ("being-with"). Instances of this idea include children and their significant caregivers (e.g., parents engaging in play or feeding), which form an unconscious understanding of relationships. These early interactions shape implicit ways of relating and construct meaning and identity. Through this process, we acquire physical abilities, body stances, and more. For example, reacting to authoritarianism might prompt a lowered stance, raised shoulders, and restricted movement from a young age. These learned responses become ingrained and are re-enacted in similar situations because we internalized them through others' behaviors. Such actions become integral aspects of our embodied character, ready to be triggered when similar contexts arise (Fuchs, 2006)[6].

Emotions, in turn, follow predictable patterns, often triggered by significant events—like sorrow arising from personal loss (Fridja, 2007). According to these principles, events themselves don't inherently possess emotional value; rather, the emotional charge stems from our embodied evaluation of them. Different emotional states correspond to distinct behavioral responses, as they are tied to our concerns, motivations, needs, goals, or values. These emotions shape our lasting tendencies in how we interpret our environments. However, following Fridja's laws of emotion (2007), if there is no closure regarding an event's meaning, its emotional load persists over time, underlying the reactions we tend to re-enact—making it a memory. In other words, these reactions inherently link to the past while engaging with the present, effectively re-living the original event. In this sense, what distinguishes an emotionally-loaded embodied

[6] As a possible objection, someone could claim that the repetition is not a memory, but just a replication of its emotional load. However, what seems to be implied in this claim is that emotion is something posteriorly attributed to mnemonic contents (i.e. mental imagery or embodied reactions), which for an enactivist is not true. As enactivism admits dynamic systems, emotions happen simultaneously with perception and cognition (Colombetti & Thompson, 2005)

memory (VM) is its repetition over time, likely retaining the same initial meaning and emotional valence [7].

Phenomenological approaches to the embodied mind often emphasize the active presence of the past manifested through current bodily actions, which mirror past assessments and corresponding actions (Merleau-Ponty, 1945). This behavioral inclination isn't caused by memory but rather embodies (literally!) a distinct form of remembering. The current situation maintains a connection to the past, characterized by assessments that resemble both present and past experiences, co-constituted in interaction. These experiences also prompt comparable interactions with the world, activating familiar response patterns within cognitive systems. According to Fridja's law of emotions (2007), when a pivotal personal event is reawakened, behavioral patterns persist despite the passage of time, and repeat themselves as if this event holds a central significance. As I show below, this reevaluation is in itself a form of emotional memory also vicariously, as it recreates an emotional environment using presently available contextual cues in a bodily-driven manner, which replicates past response patterns through interaction in dyadic states. Evidently, not every interaction that boosts the shared memory between two subjects becomes part of this habitual memory system. What makes that happen is diverse. For this paper's purpose, however, what matters is that a traumatic event for sure does.

The case of transgenerational trauma is a rich resource for the study of vicarious, emotional and embodied memory, because they involve cases in which through mimesis one reenacts events adopting someone else's embodied evaluation of events *as one's own.* The literature addresses this topic mostly through the imitation of a parent's disturbances which hinder the child's ability to establish an independent self[8].

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[7] This is even more true in traumatic cases that are also collective, as I will show ahead, because preserving its initial meaning also preserves group identity.

[8] Having a traumatic event at the core of personal identity means that the trauma is perceived as emblematic of the person's self or serves as a symbol representing persisting facts in their life story. This idea is not an original claim from this paper, as it has become common knowledge in both psychological and philosophical literature (cf. Dorothy & Hughes, 2023; Malabou, 2012; Herman, 1997; Berntsen, 2009; Berntsen & Rubin, 2007, 2012). This perception sets the stage for internal, stable, and global characteristics of the self that extend across various situations and is linked to depression and symptoms of post-traumatic stress disorder (Rubin et al., 2008). Yehuda (1998) proposed that children of Holocaust survivors are at a high risk for PTSD, showing a higher lifetime prevalence of PTSD and increased occurrence of mood and anxiety disorders compared to a control group exposed to similar traumatic events, as outlined in DSM-IV criteria. This understanding also presupposes that the self is constituted through intersubjective relationships, a claim extensively addressed in political and phenomenological

This may lead to the emergence of symptoms mirroring the father's disruptions, such as social withdrawal, guilt, and emotional detachment, as noted in studies by Ancharoff, Munroe, & Fisher (1998). Parents who struggle to manage the proximity or distance from their traumatic memories often find it challenging to maintain a healthy emotional distance from their children. This can result in a situation where the father is physically present but psychologically distant or emotionally unavailable, creating a sense of ambiguous loss (Boss, 1999). The difficulty in comprehending and explaining the father's behavior can lead to a lack of understanding and disappointment among the children, leaving the father to only partially fulfill his roles within the family. As a result, there's a blurring of boundaries, leading to a situation where the roles typically associated with the parents are shifted onto children. This process can further complicate the differentiation between one's own identity and the identities of others, at least within the family unit.

This does not stop there. The coping mechanisms adopted by the first generation born from trauma survivors resurface in the subsequent generation. This includes a milder form of automatism where the child appears to follow a predetermined script rather than living authentically, an exaggerated fantasy life used as a shield against an incomplete reality, reluctance to form deep emotional connections, self-harming behaviors[9], and sometimes aligning with the aggressor (Mucci, 2013, p. 173). Frequently, the pain experienced by parents is projected onto their children, who unconsciously replay significant themes present in their parents' lives, who, in consciously rejecting their suffering to endure, inadvertently pass down these unresolved themes to their sons and daughters. When they start therapy, symptoms might persistently manifest as efforts to reenact certain facets of their family's persecution, gradually surfacing year after year during analysis processes.

Other heart-breaking cases of compromised identity formation in vicarious traumatisation happens when children have some identification with a dead relative and the parent at once. In those situations, they grieve as an act of carrying out the parent’s mourning and thus renounce their own autonomy. The psychoanalyst Ilan Kogan (1998) attested that if no therapeutic intervention happens in those cases, the child ends up living someone else’s life. First

literature (e.g., Ahmed, 2004; Fuchs, 2016, 2017; Gallagher, 2005, 2013; Schmid, 2014; Zahavi, 2001, 2014).

[9] For an extensive analysis on how self-harming is related to identity disruption in traumatic events, see Ataria, 2018.

generations of Shoah survivors are often stuck in grief while unable to work it through, and the posterior ones begin to elaborate it. But this process, due to damaged identity formation, is a very slow one. It is manifested in several forms of parent and child identification and behavioral imitation, which can even extend the trauma to the third generation, if the previous one is still stuck in the same schema they inherited.

This allows for an understanding of remembering in which distributed and enactive memory explore how intersubjectivity leads to new identities or rather blurs a clear border between who subject A is and and who subject B is if both are in constant exchange. A dyadic personal relationship is translated into intercorporeal systems, as what is at stake here are not two individuals *containing* individual memories, but rather a collective shape of those by emotional attunement.

This facilitates PTSD, because at the same time emotional arousal (such as anxiety) increases mnemonic consolidation (Berntsen, 2020), negative vicarious memories also make someone's personality be what actually sets the negative valence of another's subject experience as it becomes her own (Thomsen and Pillemer, 2016). Neurotic individuals, for instance, see their lives mostly guided by negative experiences, so that their self-comprehension biases what is heard or perceived from someone else in the worst way possible. Such a feature is even worse in the case of individuals whose identities are blurred, damaged or merged with someone else's.

What an embodied account of vicarious memory offers as a contribution here is potentially showing how observing others' emotions can at once affect neural systems in order to facilitate future flashbacks vicariously acquired, while that is bodily given simultaneously. As a hypothesis, studies on embodied mirror emotions and empathy claim that this is based on an action-perception mechanism (Ferrari and Coudé, 2018). Affective empathy aligns with heightened activity within premotor-parietal, temporal, and subcortical regions traditionally linked to movement, sensation, and emotional processing. In contrast, neural circuits engaged in cognitive control and decision-making, encompassing the cingulate, prefrontal, and temporal regions, typically spark into action during activities demanding empathy (Zaki & Ochsner, 2012). In human studies utilizing fMRI scans, it has been demonstrated that both feeling empathy for pain and directly experiencing pain activate the anterior cingulate cortex and the anterior insula. These brain regions are renowned for their involvement in processing pain and regulating autonomic bodily responses linked to that specific experience (Lockwood, 2016).

From a neurobiological viewpoint, a mechanism aligning action with perception has been proposed to facilitate fundamental types of affective empathy. This mechanism involves neurons resonating with the motor and emotional states of similar biological individuals. This review thus outlines how the matching between self and others, mediated by mirror neurons, underlies a fundamental aspect of sharing emotions in an embodied way. In a particular study, they were identified in areas such as the supplementary motor area, hippocampus, parahippocampal gyrus, and entorhinal cortex. This discovery happened when patients not only executed and observed grasping actions but also engaged in facial expressions and observed corresponding facial expressions (Mukamel, Ekstrom, Kaplan, Iacoboni, & Fried, 2010). Individuals indeed have the ability to trigger common motor representations by utilizing various sensory pathways. This multi-sensory approach enriches and diversifies the shared experience with another person.

The way this translates into mnemonic systems, while committed to enactivist premises, can possibly be an outcome of embodied simulation. That is, observing another person experiencing an emotion could trigger neural activity in their own brain in a vivid and immersive way, re-creating a similar emotional experience for the observing subject while at also making them develop bodily symptoms of PTSD across time (hyperarousal, sleeping disturbances, sweating, trembling). In traumatic cases, this could be accentuated by the role of attention, because the event centrality (i.e. what is always in the spot of one's attention) will make the event be remembered more (Rubin et al.,2008). This, I understand, also increases the chances of developing flashbacks, as closure is reflected by a lack of spontaneous recollections of the emotional event and a lack of emotional reactivity (Beike & Wirth-Beaumont, 2005), and in the case of collective trauma closure most likely does not happen. Reenactments also seem to highlight how reactions happen automatically, beyond conscious awareness and this automatic activation can also contribute to the traumatic repetitive nature and their stubborn resistance to change. This idea remains as a hypothesis, in the attempt of answering if embodied cognition can account for emotional reactions that can *cause* mental imagery and not only happen *together with* them. This question, however, remains with no answer both in philosophy and in the empirical sciences.

Section 3- Mimesis and background emotions

A damaged identity development is also found in narrated reports of vicarious trauma[10]. Here are some curious ones: “The saddest part is when the parents identify the children with the persecutor. The results of a study carried out by Axelrod (1980) and her colleagues on thirty hospitalized children of survivors, show that often these young patients repeat on themselves the same form of persecution their parents suffered.” (Mucci, 2013, p. 174). Citing the words of the adult daughter of a survivor: “Their story sometimes becomes more real to me than my own life” (Bergmann & Jucovy, 1982, p. 268). And, still “This same patient used the word “we” when she meant “my parents”" while recounting episodes that occurred before her birth. Many of her actions were determined by the desire to take part in the trauma of her parents”. Those reports do not only present a narrated VM that guides decision-making as something learned through someone else’s experiences, as they are claimed to do in Pillemer’s account. VMs here rather frame sense-making as if the traumatic event was still being told, it replicates its initial meaning in different people. Enactivists would normally assert that when individuals synchronize their emotions or actions, it leads to the emergence of fresh independent systems that carry socio-culturally significant patterns formed through participatory sense-making processes (De Jaegher and Di Paolo, 2007). Here, we do not see any independence, but rather a strong identification that stops descendants from making sense of things in a different way than their family members. This raises the following issue: how does inherited emotional load regulate those patterns and which mnemonic features and functions make them persist in the same negative way through time? I now claim that a) background emotions also contribute for PTSD symptoms development; b) the mnemonic characteristics that also contribute to the event’s emotional load persistence and fuel those symptoms are: the way collective memory simplifies event’s meaning; the way embodied vicarious memories can rely on somatic markers; c) the way memory tries to reconstruct events whose knowledge is partial or fragmented.

Section 3.1 - Not-that-autonomous systems

Autonomous systems aren't that autonomous. Thankfully, enactivism already explores this problem, much like how Aristotle conceived socially acquired tendencies (*hexis)*. The bond between children and parents, while deeply connected, tends to be temporary. Yet, through repeated acts of copying and adapting each other's behaviors, ingrained habits form and become

[10] Which, once again, exempts this paper of arguing for it.

evident in various encounters, whether between parent and child or within larger family interactions. Within these scenarios, a closed system emerges, defining the limits of possible interactions. This system comprises shared emotions, expressions, and meanings that rely on one another, sustaining the identity of the family unit. However, as previously said, not every interaction that boosts the shared memory between child and parents becomes part of this habitual memory system through bodily interactions. But, again, a traumatic event, by definition, does, as they become an integral part of a person's childhood damaged self.

For this reason, I argue that inherited emotional patterns shape family dynamics through background emotions, which are connections between oneself and the world and shape our perception of the world's possibilities, such as anxiety, despair, melancholy, awe, alienation and absurdity (Ratcliffe, 2010). They contribute to framing our experience by highlighting certain possibilities while suppressing or diminishing others and they create a backdrop that influences our perception of action possibilities. They don't merely add emotional color to our cognitive experiences but fundamentally mold the content of cognition and our overall experience. And that’s done with an emphasis on the body's active role in the experience structure. Our empirical world is not just visually perceived but deeply felt as bodily potentialities. As argued by Varga and Krueger (2013), they also lead to psychological suffering as in, for instance, when a depressed person, who is inclined to low and negative emotions project them onto the world through this somewhat implicit frame.

The emotional aspect of mimesis can become a background emotion. Connecting with others through emotional resonance involves absorbing someone else's emotionally rooted perspective in a manner that allows the observer to potentially adopt that perspective as their own way of engaging with the world. The cognitive purpose of mimesis is not solely to learn *from* another individual but also to learn *through* them, as they are a pivotal aspect in exploring the external world (Varga and Krueger, 2013). The way this happens is that even among neonates, infants utilize fundamental sensorimotor abilities that enable them to actively engage with caregivers on a genuine interpersonal level (Varga and Krueger, 2013). This permits us to actively engage and not merely observe others from a very early stage (Hobson 2002). This implies that children born in households with a traumatic background from a very early age can

pick-up and imitate their parent's appraisal[11] towards things, which will start to shape their own[12]. The way children mimic trauma-related emotions occurs in several ways, as tragic events lead to heterogeneous consequences that reflect on parenting styles differently. As previously mentioned, a more direct way of transmission involves the transfer of PTSD symptoms—such as numbness, dissociation, and anxiety—from the parent to the child, significantly impacting the child's well-being (Dekel and Goldblatt, 2008). Conversely, a more indirect transmission occurs when PTSD symptoms shape or influence the distress experienced by the child. This is supported by observations indicating that children raised in environments marked by violence or high stress levels are susceptible to experiencing adverse effects. Harkness (1993) similarly discovered that instances of family violence stemming from PTSD had a stronger correlation with heightened distress in children compared to the PTSD itself. In other words, the actions of parents influenced by PTSD are more probable to exert a larger impact on passing down effects across generations than the syndrome alone, because it becomes a persistent dynamic that stops children from making sense of things in a positive way. This is precisely what defines a background emotion. PTSD symptoms are facilitated here, because they are somehow *in the air,* causing psychic distress that can facilitate the appearance of traumatic memories through contextual cues, as I will show ahead. The primary mechanisms of more direct transmissions, as expounded by psychodynamic approaches and drawing from psychoanalytical insights, involve projection and identification. In this context, fathers grappling with PTSD encounter challenges in managing their affective responses. In their efforts to alleviate their own pain, they extensively employ projection mechanisms. This entails the division and projection of intense emotions like persecution, aggression, shame, and guilt onto their children (Cf. Srour, 2005). Consequently, their offspring fashion their experiential world and internalize these projected facets of their

[11] This term is used here as a synonym of evaluation, deprived of its conceptual implication for enactivist literature that contrast appraisal and emotion, such as Colombetti & Thompson, 2008.

[12] This also happens with very young children born from depressed mothers. A study requested mothers to engage with their infants in a manner devoid of emotion. These mothers maintained neutral or even somber facial expressions while speaking to their infants in a flat tone. They deliberately slowed down their movements. Despite their responsive behavior, their emotional state appeared "depressed". The infants reacted notably to this simulated sense of depression. In comparison to regular interactions, infants exposed to this simulated depression exhibited pronounced emotional shifts towards protest: they became cautious and averted their gaze. Rarely did they either make eye contact with their mothers or display positive emotions. These findings strongly supported the notion that a depressive emotional state would adversely impact the emotional well-being of infants. (Tronick & Reck, 2009)

fathers' emotions, as they perceive his experiences and feelings as their own once again, which facilitate the disorder.

In the realm of two-person interactions and the ongoing support from caregivers in shaping these exchanges, individual interactions take on unique emotional qualities tailored to the relationship. These nuances materialize as background emotions emerged dynamically during emotional exchanges between pairs. Their nature varies based on the context of the interaction, which entails specific dynamics, durations, patterns of synchronization, peaks of heightened arousal, neutral phases and more.

Emotional and gesture synchrony within social interactions normally have the function of emotional regulation. But unchecked experiences, like transgenerational trauma, also pose the risk of heightened arousal which disrupt infants' socio-emotional growth. Both the encounter and management of emotions in children require the involvement of an attuned adult who can actively mold and co-regulate the positive emotions moment by moment (Varga and Krueger, 2013). However, in transgenerational trauma, this is also compromised, as mimicked behavior does not regulate emotion, but makes a child mirror the father's disturbances like social withdrawal, guilt, and detachment (Ancharoff, Munroe, & Fisher, 1998)[13].

Dyadic interactions regulated by parental inputs are background emotions because they set the affective contour of how a child will start to interpret her own experiences. It would be expected that as this individual grows, her own appraisals would develop into something more autonomous. I now argue that they often do not, not only because of the traumatic event

[13] An example of emotional regulation also can be pointed out in the case of Shoah survivor's descendants. They concern the embodiment of the therapist and analyst instead. Enactments stem from the primal defense mechanism known as projective identification, involving non-verbal communications between individuals (Schore, 2003a, 2012). Projective identification serves as a survival strategy for highly stressed infants. In therapeutic settings, emotions linked to the patient's past traumatic connections are projected onto the therapist, allowing these emotions to be felt by the therapist as well. These unconscious, non-verbal, mind-body exchanges (Schore, 2012) can profoundly impact the exchange of understanding between individuals in the therapy space, ultimately influencing the restoration of damaged aspects of the self. The emotional connection between therapist and patient, marked by intense physical sensations and unspoken communication, permits the therapist to step into and experience brief periods of traumatic states. During these moments, the therapist temporarily allows themselves to be emotionally unsettled in order to act as a stabilizer for the patient's heightened emotional arousal. This role stands in stark contrast to that of parents: in this context, mimicking is solely centered on emotional regulation. With the therapist representing an explicit sense of otherness, children experience validation, a sentiment that might not consistently occur within their homes.

centrality, but also due to the combined functions and features of collective memory, overall traumatic memories and vicarious memories. Those all contribute to PTSD development.

Transgenerational trauma, in cases like the shoah or war survivors, have different forms of reception in different forms of remembering. They all collaborate to make its initial valence endure. Collective memories in traumatic cases involve simultaneously the fact that the event is shared among many individuals and the cooperative construction of meaning towards the distressing situation. What is threatened here is not an individual identity, but a group one: the pivotal question is not "who did this to me?" but "what group did this to *us*?". Intellectuals, political leaders and symbol creators make claims about tragedies and what caused them, about the victim and perpetrator, about what is to be done as preventive measures. Instead of this enabling diverse narratives about a fact, this actually creates a simplification that, as noted by Novick (1999) and Sutton (2018), sees events from a single point of view, resulting in a convergent understanding of the past in order to preserve a group identity. It implies that even when trauma can be re-elaborated within a household, its transmission in a larger-scale (through museums, movies, photography, history, artifacts, etc) will always cause its memory (whether individual or shared) to be very similar in their details (Sutton, 2018; Hirst and Manier, 2008), as if a large-scale background emotion composed it.

Literature on Holocaust survivors name *the conspiracy of silence* (Danieli, 1981; 1993) the indirect communication that happens when subjects only have a partial awareness of what indeed happened - traumas are never recalled totally (Van der Kolk, 2014). The more time elapses, the more generations remember an event instead of forgetting it[14], as an attempt to comprehend what happened and give it proper meaning through re-enacting missing details. Among the descendants of the Chernobyl accident, for instance, children frequently paint scenes of the tragedy in walls, which can be a way of trying to attribute more details to the initial event and even a way of reconstructing a more or less accurate illustration of it in an embodied and enacted reconstructive process (Alexievich, 2005; Mucci, 2013). This makes an event endure through mnemonic functions in general (in this case, knowledge about the past).

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[14] Unless this is induced, as shown by Connerton (2008) The social aspects of induced forgetting are more related to a certain difficulty in accessing the fact, than the actual erasure of its permanence in a society. It represents an amount of practices that have taken place since very ancient societies. In the compilation named *Seven types of forgetting,* they are defined as repressive erasure; prescriptive forgetting; forgetting as a constitution of a new identity; structural amnesia; forgetting as annulment; and forgetting as humiliated silence.

In the case of vicarious memories, as I conceive them, the feature that prolongs the event's meaning can rely on somatic markers and embodied/emotional resonance through mimesis. Mimicry, as I have shown, isn't solely about replicating physical actions but also involves emotional expression and resonance. When you imitate someone's emotional expressions or gestures, it can trigger somatic markers—physiological reactions linked to emotions. These markers could be claimed to re-activate memories associated with similar inherited emotional experiences through mirror neurons that are automatically activated in similar contexts, which highlights the deeply-embedded character of recollection.

It is true that it is hard to claim that *one* specific reaction refers to that *one* traumatic event, as relationships and emotional lives are very fleeting and rich and also involve other things, situations and people. Max Silverman (2013), nonetheless, provides an interesting insight. It explores the concept of memory through the metaphor of a palimpsest, which is a manuscript or document that has been reused or overwritten and recreates its previous content. It might be the case that repeated embodied reactions, as they can be memory in themselves, are equally layered. And when we perform an imitated gesture, it might 'collapse' into other kinds of memory influenced by our current state, biases, or the context in which we're remembering it. How that happens remains obscure, as it requires significantly more empirical studies and further discussions on how causation in embodied remembering, whether vicarious or not, can be tangled.

Conclusion

This paper analyzed some cases of transgenerational trauma, with the aim of showing how mimesis/imitation can be translated into vicarious memories understood as inherited embodied and emotional appraisals. For that to happen, I have prescribed a concept of embodied vicarious memory according to which mental imagery may or may not be formed. They consist of repeated bodily dispositions that come from interaction in dyadic states that somehow re-create a past event in different ways. In the cases of vicarious traumatic memories, the concept is exemplified in how children also mirror their parent's experiential world and identity, often trying to take part in their trauma through diverse forms of re-enactments. In addition to that, I have argued for two possibilities that fuel the development of PTSD disorder in households in

which survivors' descendants only experienced an event indirectly. One is that embodied simulation allows other people's experiences to be recreated as our own in immersive ways through mirror neurons and attention. Another reason is that early mimesis biases children's experiential worlds since the beginning of their lives, as their parents' affective states form background emotions. They restrict their possibilities of making sense of things differently than elderly family members, as their identities are somewhat merged through identification. Consequently, those emotions shape experience and remembering: enactivist cognition is inherently affective.

References

Ahmed, S. (2004). *The cultural politics of emotion*. Routledge.

Alea, N., & Bluck, S. (2007). I'll keep you in mind: The intimacy function of autobiographical memory. *Applied Cognitive Psychology, 21*(8), 1091–1111.

Alexievich, S. (2006). *Voice from Chernobyl: the oral history of nuclear disaster.* New York: Picador USA.

Ancharoff, M. R., Munroe, J. F., & Fisher, L. M. (1998). The legacy of combat trauma: Clinical implications of intergenerational transmission. In Y. Danieli (Ed.), *International handbook of multigenerational legacies of trauma* (pp. 257–276). Plenum Press.

Ataria, Y. (2018). *Body disownership in complex posttraumatic stress disorder*. Palgrave Macmillan.

Axelrod, S., Schnipper, O. L., & Rau, J. H. (1980). Hospitalized offspring of Holocaust survivors: Problems and dynamics. *Bulletin of the Menninger Clinic, 44*(1), 1–14.

Beike, D. R., & Wirth-Beaumont, E. T. (2005). Psychological closure as a memory phenomenon. *Memory, 13*(6), 574–593.

Bergmann, M. S. & Jucovy, M. E. (1982). *Generations of the Holocaust*. New York: Basic Books.

Berntsen, D., & Rubin, D. C. (2007). The centrality of event scale: A measure of integrating a trauma into one's identity and its relation to posttraumatic stress disorder symptoms. *Journal of Personality Assessment, 89*(3), 271-278.

Berntsen, D. (2009). *Involuntary autobiographical memories: An introduction to the special issue on involuntary autobiographical memories*. Memory, 17(3), 1-10.

Berntsen, D., & Rubin, D. C. (2012). The centrality of event scale: A review and the introduction of a short form. *Journal of Traumatic Stress, 25*(5), 537-548.

Blaney, P. H. (1986). Affect and memory: A review. *Psychological Bulletin*, 99(2), 229–246

Boss, P. (1999). *Ambiguous loss: Learning to live with unresolved grief*. Harvard University Press.

Caravà, M. (2021). An exploration into enactive forms of forgetting. *Phenomenology and the Cognitive Sciences, 20*(4), 703–722.

Casey, E S. (1987). *Remembering: A Phenomenological Study*. Indiana University Press.

Cole, J., & Spalding, H. (2008). *The invisible smile*. Oxford: Oxford University Press.

Colombetti, G & Thompson, E (2005). Enacting emotional interpretations with feeling. *Behavioral and Brain Sciences* 28 (2):200-201.

Colombetti, G & Thompson, E (2008). The feeling body: Towards an enactive approach to emotion. In W. F. Overton, U. Müller & J. L. Newman (eds.), *Developmental Perspectives on Embodiment and Consciousness*. Erlbaum.

Connerton, Paul. (2008). Seven Types of Forgetting. Memory Studies. 1. 59-71.

Danieli, Y. (1981). Differing adaptation styles in families of survivors of the Nazi Holocaust: some implications for treatment. *Children Today, 10*: 6–10.

Danieli, Y. (1993). The diagnostic and therapeutic use of the multigenerational family tree in working with survivors and children of survivors of the Nazi Holocaust. In: J. P. Wilson & B. Raphael (Eds.), *The International Handbook of Traumatic Stress Syndromes* (pp. 889–898). New York: Plenum Press.

De Avila, N. (*forthcoming*). Enacting affective memory or: *environ*mental time travel.

De Haan, S. (2020). *Enactive psychiatry.* New York, NY: Cambridge University Press.

Dekel, Rachel & Goldblatt, Hadass. (2008). Is There Intergenerational Transmission of Trauma? The Case of Combat Veterans' Children. The American journal of orthopsychiatry. 78. 281-9.

De Jaegher, H., Di Paolo, E. (2007). Participatory sense-making: An enactive approach to social cognition. *Phenomenology and the Cognitive Sciences, 6*(4), 485–507

Donald, M. *A Mind So Rare.* W. W. Norton & Company, 2001.

Elsass, P. (2001). Individual and Collective Traumatic Memories: A Qualitative Study of Post-Traumatic Stress Disorder Symptoms in Two Latin American Localities. *Transcultural Psychiatry* 38. 306-316.

Ferrari, P. F., Coudé, G. (2018). Mirror neurons, embodied emotions, and empathy. In K. Z. Meyza & E. Knapska (Eds.), Neuronal correlates of empathy: From rodent to human (pp. 67–77). Elsevier Academic Press.

Frijda, N. H. (2007). *The laws of emotion.* Lawrence Erlbaum Associates Publishers

Fuchs A (2002) Towards an ethics of remembering: the Walser-Bubis debate and the other of discourse. *German Quarterly* 75(3): 235–247

Fuchs, T. (2006) Gibt es eine leibliche Persönlichkeitsstruktur? Ein phänomenologisch-psychodynamischer Ansatz. *Psychodynamische Psychotherapie* 5: 109-117. – Wiederabgedruckt in: H. Lang, H. Faller, M. Schowalter (Hrsg.) (2007) Struktur – Persönlichkeit – Persönlichkeitsstörung, S. 75-86 Königshausen & Neumann, Würzburg.

Fuchs, T. (2016). *The experiential self: A neurophenomenological perspective*. In D. Zahavi (Ed.), *The Oxford handbook of contemporary phenomenology* (pp. 301-320). Oxford University Press.

Fuchs, T. (2017). *Intercorporeality and intersubjectivity: A philosophical and empirical exploration*. In T. Fuchs, K. H. Høffding, & D. Zahavi (Eds.), *The Routledge handbook of phenomenology and mental health* (pp. 38-51). Routledge.

Gaensbauer, T. J. (2011). Embodied simulation, mirror neurons, and the reenactment of trauma in early childhood. *Neuropsychoanalysis, 13*(1), 91–107

Gallagher, S. (2005). *How the body shapes the mind*. Oxford University Press.

Gallagher, S. (2013). *Phenomenology and experimental philosophy*. In S. Gallagher & D. Zahavi (Eds.), *The Oxford handbook of contemporary phenomenology* (pp. 119-142). Oxford University Press.

Gallagher, S. (2017). The narrative sense of others. Hau: *Journal of Ethnographic Theory* 7 (2): 467–473.

Griffiths, Paul Edmund & Scarantino, Andrea (2005). Emotions in the Wild: The Situated Perspective on Emotion. In P. Robbins & Murat Aydede (eds.), *The Cambridge Handbook of Situated Cognition.* Cambridge University Press.

Dorothy, J., & Hughes, E. (2023). The death of the self in posttraumatic experience. *Philosophical Psychology*, 1–21.

Harkness, L. (1991). Transgenerational transmission of war related trauma. In: J. P. Wilson & B. Raphael (Eds.), *International Handbook of Traumatic Stress Syndromes* (pp. 635–643). New York: Plenum Press.

Hirsch, M. (2008) The generation of postmemory. *Poetics Today* 29(1): 103–128.

Hobson, P. (2002). *The cradle of thought.* Macmillan Education.

Krueger, J. (2014). Varieties of extended emotions. *Phenomenology and the Cognitive Sciences*. 13.4: 533-555

Kidron, C.A. (2012). Silent legacies of trauma: a comparative study of Cambodian Canadian and Israeli holocaust trauma descendant memory work. In: Argenti N, Schramm K (eds) *Remembering Violence: Anthropological Perspectives on Intergenerational Transmission*. New York: Berghahn Books, pp. 185–220.

Kugiumutzakis, G., Kokkinaki, T., Makrodimitraki, M., & Vitalaki, E. (2005). Emotions in early mimesis. In J. Nadel & D. Muir (Eds.), *Emotional development: Recent research advances* (pp. 161–182).

Laird, J. D. (2007). *Feelings: The perception of self.* Oxford University Press.

Lockwood PL. (2016) The anatomy of empathy: Vicarious experience and disorders of social cognition. Behav Brain Res.15;311:255-266.

Malabou, C. (2012). *The new wounded: From the myth of the hero to the trauma of the damaged self*. Columbia University Press.

Martin, C. B., & Deutscher, M. (1966). Remembering. *Philosophical Review, 75*(2), 161–196.

Marzoli, Mariagrazia Custodero, Pagliara & Luca Tommasi (2013) Sun-induced frowning fosters aggressive feelings, *Cognition and Emotio*n, 27:8, 1513-1521.

McCann, I. L., & Pearlman, L. A. (1990). Vicarious traumatization: A framework for understanding the psychological effects of working with victims. *Journal of Traumatic Stress, 3*(1), 131–14

Merleau-Ponty, M (1960). *Signes.* Paris : Les Éditions Gallimard.

Merleau-Ponty, M. (1945). *Phénoménologie de la perception.* Gallimard.

Merrill, N., & Fivush, R. (2016). Intergenerational narratives and identity across development. *Developmental Review, 40,* 72–92

Mucci, C. (2013). *Beyond individual and collective trauma: Intergenerational transmission, psychoanalytic treatment, and the dynamics of forgiveness.* Karnac Books.

Mukamel R, Ekstrom AD, Kaplan J, Iacoboni M, Fried I. Single-neuron responses in humans during execution and observation of actions. Curr Biol. 2010 Apr 27;20(8):750-6

Novick & Raphael (1999). *The Holocaust in American Life*. Boston: Houghton Mifflin.

Ollick J (2007) *Collective Memory and Chronic Differentiation: Historicity and the Public Sphere. Working Papers in the Humanities.* Windsor, ON, Canada: University of Windsor

Pillemer DB, Steiner KL, Kuwabara KJ, Thomsen DK, Svob C (2015). Vicarious memories. Conscious Cogn. 2015 Nov.;36:233-45

Pasupathi, M. (2001). The social construction of the personal past and its implications for adult development. *Psychological Bulletin, 127*(5), 651–672

Pond E, Peterson, C. Highly emotional vicarious memories. Memory. 2020 Sep;28(8):1051-1066

Ratcliffe, M. (2010). Depression, Guilt and Emotional Depth. Inquiry.

Righetti, F. (2024) Re-enactment and embodied resonance in episodic memory: reconciling phenomenological approaches and constructive theories. *Phenom Cogn Sci*.

Rubin, D. C., Boals, A., & Berntsen, D. (2008). Memory in posttraumatic stress disorder: Properties of voluntary and involuntary, traumatic and nontraumatic autobiographical memories in people with and without posttraumatic stress disorder symptoms. *Journal of Experimental Psychology: General, 137*(4), 591–614

Silverman, M. (2013). *Palimpsestic Memory.* Berghahn Books.

Schmid, B. (2014). *Intersubjectivity and the social dimensions of experience*. In M. L. Hester & D. G. Schmid (Eds.), *The Cambridge handbook of social theory* (pp. 164-185). Cambridge University Press.

Schore, A. N. (2011). The right brain implicit self lies at the core of psychoanalysis. *Psychoanalytic Dialogues, 21*: 75–100.

Schore, A. N. (2012). *The Science of the Art of Psychotherapy*. New York: Norton.

Schore, J. R. & Schore, A. N. (2008). Modern attachment theory: the central role of affect regulation in development and treatment. *Clinical Social Work Journal*, *36*: 9–20.

Sutton, J. (2018). Shared remembering and distributed affect: Varieties of psychological interdependence. *New directions in philosophy of memory.* Routledge.

Tabor, P.D. (2011), Vicarious traumatization: Concept analysis. Journal of Forensic Nursing, 7: 203-208

Sutton, J. & Williamson, K, (2024). Embodied remembering. In Lawrence A. Shapiro (ed.), *The Routledge Handbook of Embodied Cognition*. New York: Routledge.

Thomsen, D.K. & Pillemer, D.B. (2017), I Know My Story and I Know Your Story: Developing a Conceptual Framework for Vicarious Life Stories. *J Pers*, 85: 464-480

Trakas, M. (2021). Kinetic Memories. An embodied form of remembering the personal past. *Journal of Mind and Behavior* 42 (2):139-174.

Tronick, E., & Reck, C. (2009). Infants of depressed mothers. *Harvard Review of Psychiatry, 17* (2), 147–156. https://doi.org/10.1080/10673220902899714

Tumarkin, M. (2013). Crumbs of memory: Tracing the 'more-than-representational' in family memory. *Memory Studies*, 6(3), 310-320

Van der Kolk, B. A. (2014). *The body keeps the score: Brain, mind, and body in the healing of trauma.* Viking.

Varela, F. J., Thompson, E., & Rosch, E. (1991). *The embodied mind: Cognitive science and human experience*. The MIT Press.

Varga, S., & Krueger, J. (2013). Background emotions, proximity and distributed emotion regulation. *Review of Philosophy and Psychology, 4*(2), 271–292.

Volkan, V. D., Ast, G. & Greer, W. F. (2002). *The Third Reich in the Unconscious: Transgenerational Transmission and Its Consequences*. New York and Dove, East Essex: Brunner-Routledge.

Zahavi, D. (2001). *Beyond empathy: Phenomenological approaches to intersubjectivity*. Journal of Consciousness Studies, 8(5), 151-167.

Zahavi, D. (2014). *Self and other: Exploring subjectivity, empathy, and shame*. Oxford University Press.

Zaki, J., & Ochsner, K. N. (2013). The neuroscience of empathy: progress, pitfalls, and promise. *Nature Neuroscience, 16*(12), 1907–1916.

Yehuda, R., Schmeidler, J., Giller, E. L., Jr., Siever, L. J., & Binder-Brynes, K. (1998). Relationship between post-traumatic stress disorder characteristics of Holocaust survivors and their adult offspring. *American Journal of Psychiatry, 155*(6), 841-843.

Yehuda, R., Bierer, L. M., Schmeidler, J., Aferiat, D. H., Breslau, I. & S. Dolan (2000). Low cortisol and risk for PTSD in adult offspring of Holocaust survivors. *American Journal of Psychiatry, 157*(*8*): 1252–1259.